

# Both Way Radio Internet Email

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## Abstract:

BWRIE is a software system that allows the user to send and receive Internet Emails via Amateur Packet Radio. BWRIE consists of two plain vanilla AX25 packet radio stations. One station runs my "Send" software the other runs my "Receive" software. The Receive station also has an Internet connection. A Full Time or Dial Up connection, either will work.

## Key Words:

BWRIE, Amateur Packet Radio, Emergency, Disaster.

## Why Was BWRIE Created?

BWRIE was created to fill the perceived need of sending Internet Emails during an emergency. Yes the Internet is down inside the disaster area. But outside of this area the Internet is doing just fine. All that is needed is a Receive station be set up outside where the Internet is working. Naturally also a Send station would be needed inside the disaster area. If Send and Receive can reach each other via RF then this system will work very well.

## Receive Station Hardware:

The RECEIVE packet station consists of the following:

- 1) Computer:
  - Capable of running Windows 95 or better.
  - BWRIE was tested using Second Edition Windows 98.
- 2) TNC :
  - BWRIE was tested using a Kantronics KPC3+
  - Note the RECEIVE packet station has to have a TNC capable of doing full HARDWARE control. In other words a full 9 wire serial cable has to be used.
- 3) Internet Connection:
  - Full time or dial up is ok. Note BWRIE was tested using a full time Internet connection.
  - BWRIE does not have proxy support. In the future if there is demand then proxy support will be Added.
- 4) Transceiver:
  - Any FM transceiver will work. BWRIE was tested on 2M using a Yaesu FT-5100.

## Send Station Hardware:

- 1) Computer:
  - Capable of running Windows 95 or better.
  - BWRIE was tested using Second Edition Windows 98.
- 2) TNC:
  - BWRIE was tested using a Kenwood D700.
  - Note the SEND packet station's TNC can be any TNC. A two-wire type of serial connection is fine. Which means you can use a Kenwood THD7 for the SEND station.
- 3) Transceiver:
  - BWRIE was tested on 2M. As stated above a Kenwood D700 was used.

## **How Receive And Send Work Together:**

Please refer to Figures 1 through 4. Which are found at the end of this paper.

### **SENDING EMAILS:**

Once the user has the RECEIVE and SEND Stations up and running and a Packet Radio connection is established between SEND and RECEIVE. The next step is for the operator of the SEND Station to fill in the "Email" fields and then click on the Send button. When the Send button has been clicked the message is first saved to the SEND Stations hard drive. This is done incase there is a problem with the packet connection. This way if the message is lost during the packet transmit phase then at least the message is saved and can be sent manually when the packet connection is restored. Cutting and pasting the file into the txtmessage field can do this.

The files are stored in the C:\Program Files\BWRIE directory.

The first Email that Send sends is named 1.txt. The second file is named 2.txt and so on.

Note each time you start up Send send starts with file name 1.txt which of course means that the old 1.txt gets written over. This was done so that your hard drive would not run out of room and old not needed files would be automatical removed.

After SEND has saved the message locally then SEND sends the message to RECEIVE via Packet Radio.

If all goes well with the packet phase of the process the first thing RECEIVE does is save the message to its hard drive. For the same reason as above. You may have lost your Internet connection. After RECEIVE has saved the message it then formats it into an Internet Email message and then it uses Simple Mail Transfer Protocol to send it out to the Internet.

At this point RECEIVE then sends a Packet Radio message to SEND stating its success or failure with sending the Email message. If success then the status field in SEND contains "Mail Sent Successfully"

If RECEIVE is not successful then the status field in SEND contains "Mail Sent". Note the missing word SUCESSFULLY.

Note: Once Receive is setup and is running it can be run automaticaly with no operator intervention. Running Receive in this mode is recommended for uses such as Field Day. Where if the Internet connection is lost it is easy for the send operator to go home and restore his or her Internet connection. It is recomended for an operator to be at the "controls" of the Receive station during emergency mode of use. This way if the Internet connection is lost the receive operator can restore the Internet connection and then send the Email manually. Just like with send above.

### **Receiving Emails:**

Once the user has the RECEIVE and SEND Stations up and running and a Packet Radio connection is established between SEND and RECEIVE. The next step is for the operator of the SEND Station to click on the "Getmail" button.

Clicking on this button causes Send to send a request to Receive asking for a list of the Emails that Receive has waiting to be sent to Send.

When Receive receives this request it sends the list of waiting Emails to Send.

When Send receives this list, Send displays this list on its screen.

The Ham at the controls of SEND can read this list and then by double clicking on a list item would then cause SEND to send a request for this particular Email to Receive.

When Receive receives this request for this particular Email, Receive would then send this Email to SEND.

When Send receives this Email, Send will display the Email on its screen.

## How Do I Get BWRIE?

BWRIE can be downloaded from the following URL.

<http://www.qsl.net/kb2scs>

Figure 1

The screenshot shows the 'Receive' configuration window of the BWRIE software. The window title is 'Receive'. It contains several input fields and a button:

- File Station:** Call 9771, with a text field containing 'The Call Sign'.
- Com Port:** A dropdown menu showing 'Com1'.
- Baud Rate:** A dropdown menu showing '9600'.
- Parity:** A dropdown menu showing '8'.
- Stop Bits:** A dropdown menu showing 'None'.
- Flow Control:** A dropdown menu showing '1'.
- From Name:** A text field labeled 'txtToEmailAddress'.
- From Name:** A text field labeled 'txtFromEmailAddress'.
- From Name:** A text field labeled 'txtFromName'.
- Subject:** A text field labeled 'txtEmailSubject'.
- Subject:** A text field labeled 'txtEmailServer'.
- Message:** A large text area labeled 'txtMessage'.
- MONITOR OFF:** A button with a small square icon to its right.

Figure 2

The image shows a dark-themed software window titled "Send". It contains several input fields and buttons. At the top, there are two text boxes labeled "OtherCallSign" and "OtherCallSign". Below these are four smaller text boxes with the values "Com1", "9600", "8", and "None", followed by a text box with the value "1". There are three larger text boxes labeled "txtToEmailAddress", "txtFromName", and "txtE mailSubject". A large text area labeled "txtMessage" is positioned below these. On the right side, there are three buttons: "MONITOR OFF", "Get Mail", and "Disconnect". A small status window is visible in the bottom-left corner.

Figure 3

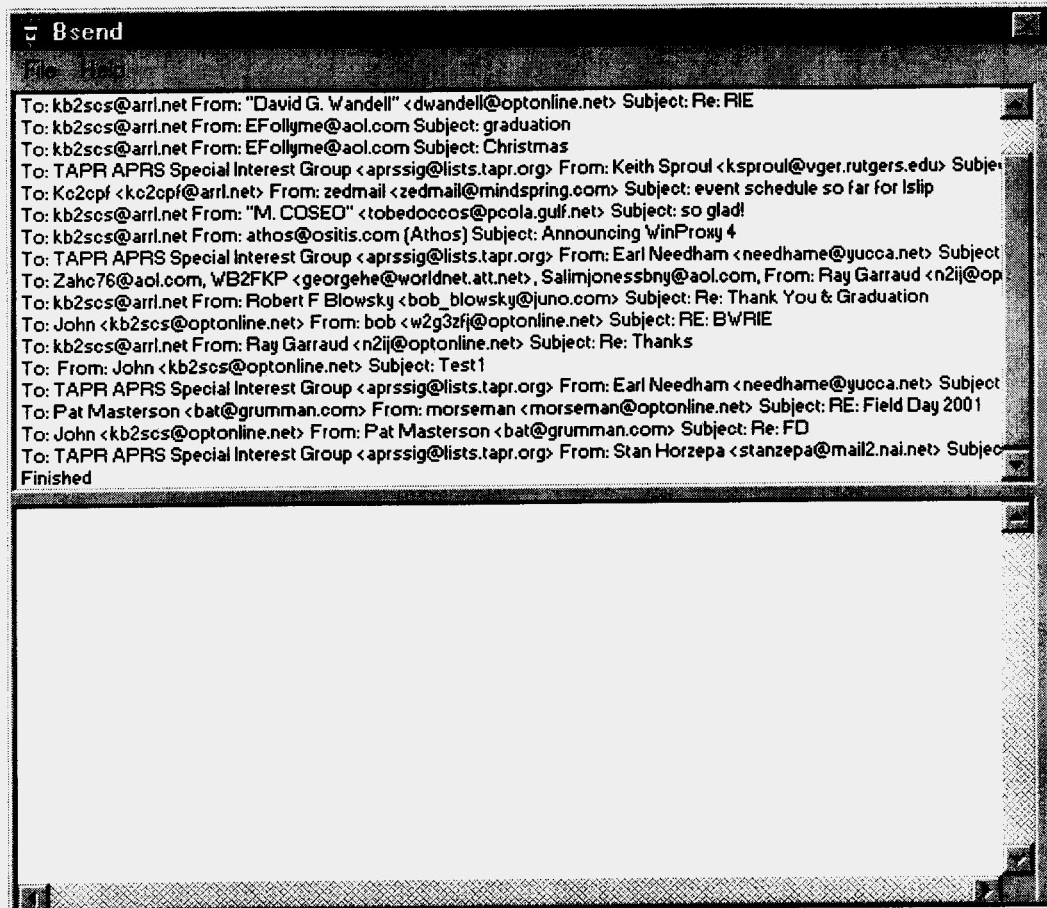


Figure 4

