Amateur Radio Mail

BBS, WinLink and NTS
Outline

• Digital Mode Options
• BBS Services
• WinLink
• NTS and NTSD
• Emergency Services
• References
Digital Mode Options

- AX25 (Packet) – Mostly VHF
- PACTOR – HF
- Sound Card modes
  - Winmor – HF – From the WinLink people
  - Soon, ARDOP
  - Others
BBS Services

• Basic service: Store and Forward
• FBB B1 or B2 Protocol
  – B1 – “old-school BBS” – one addressee; no attachments
  – B2 – “new-school BBS” – multiple addressees; attachments
• Old-school – manual login
• New-school- many “client” possibilities:
  • Manual
  • Airmail
  • Paclink with POP mail client (Thunderbird, Outlook, iPhone email, etc.)
  • RMS Express
  • Outpost
• Clients make Radio Mail look and behave like email

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BBS Network

- Multiple BBS software programs are used in a global BBS network (independent of WinLink), linking digital mail stations everywhere.
  - FBB
  - JNOS
  - BPQ
- All forward over various paths/bands/modes
  - HF – PACTOR/Winmor/ARDOP/Robust Packet/more...
  - VHF/UHF – AX25
  - Mesh Nets/Microwaves - 802.11/TCP-IP/OLSR
  - Internet – AXIP/Telnet
- BPQ provides the most “modern” network – with B2 Forwarding
  - Supports all current “modes” including ARDOP
  - Widely deployed and actively supported
  - BPQ provides support for the widest range of “clients” software
  - Click on this link to see a map of ONLY the BPQ network stations in operation: [http://nodemap.g8bpq.net:81/](http://nodemap.g8bpq.net:81/)
WinLink

- Defaults to internet forwarding.
- Similar “gateways” to BBS message forwarding.
- Provides for “all-radio” forwarding. However, Winlink all-radio networks are few and not well-exercised.
- Interfaces with internet “e-mail”. (NOTE: BPQ network will allow this as well, without use of the WinLink system).
E-mail-like Clients

• While it is possible to use BBS systems with their basic manual interface, much convenience and improved accuracy can be obtained by using one of the popular “client” applications to connect, transfer, and manage your messages to/from the BBS.

• There are four popular clients available for Radio-only connections:
  – RMS Express
  – Outpost
  – Airmail
  – Paclink

• Please also note that for times when internet access is appropriate, BPQ will allow internet email clients to connect (Thunderbird, Outlook, iPhone email, etc.).
Outpost BBS Interface

Outpost Packet Message Manager

http://www.outpostpm.org/
See “How To” to configure Outpost

Also, see this video on using Outpost for NTS messages.

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AirMail BBS Interface

**Good for EMCOMM.**

AirMail – message client also provides NTS and WinLink connections.

- Does all the connections and login for you.
- Automatically gets a message listing.
- Automatically downloads, and stores messages locally.
- Automatically “deletes” the messages from the BBS.
- Automatically logs out.
- Requires special BBS permission for Forwarding
Email Client Interface

Any **POP** mail Client such as **Thunderbird, Outlook, or iPhone mail.** Via internet directly with BBS POP/SMTP servers or, Via packet radio via **PacLink** packet link manager.

- Does all the connections and login for you.
- Automatically gets a message listing.
- Automatically downloads, and stores messages locally.
- Automatically “deletes” the messages from the BBS (optionally).
- Automatically logs out.
- Requires special BBS permission. Ask the Sysop.

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RMS Express BBS Interface

- Does all the connections and login for you.
- Automatically gets a message listing.
- Automatically downloads, and stores messages locally.
- Automatically “deletes” the messages from the BBS.
- Automatically logs out.
- Requires special BBS permission for Forwarding

RMS Express – Ideal for EMCOMM.
Standard forms and templates are available for many services
BBS Client Trade-offs

- RMS Express is the recommended radio-only client for AG6QO-1 BBS, due to its support level, B2 capability, NTS support, and WinLink secure password support.
- Just about any client that can be used with WinLink, can be used with BPQ BBS.
- Only Outpost does not allow B2 forwarding (multiple addressees and attachments), or WinLink connects.
- See [http://www.winlink.org/ClientSoftware](http://www.winlink.org/ClientSoftware) for detailed comparison from the WinLink perspective.

<table>
<thead>
<tr>
<th>Client Program</th>
<th>Forwarding Protocol</th>
<th>Multiple Addressees</th>
<th>Attachments</th>
<th>Support</th>
<th>WinLink Secure Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMS Express</td>
<td>B2</td>
<td>Y</td>
<td>Y</td>
<td>Strong</td>
<td>Y</td>
</tr>
<tr>
<td>Outpost</td>
<td>B1</td>
<td>N</td>
<td>N</td>
<td>Strong</td>
<td>N</td>
</tr>
<tr>
<td>Airmail</td>
<td>B2</td>
<td>Y</td>
<td>Y</td>
<td>Weak</td>
<td>N</td>
</tr>
<tr>
<td>Packlink</td>
<td>B2</td>
<td>Y</td>
<td>Y</td>
<td>None</td>
<td>N</td>
</tr>
<tr>
<td>Internet/Email Client</td>
<td>B2</td>
<td>Y</td>
<td>Y</td>
<td>Strong</td>
<td>Y</td>
</tr>
</tbody>
</table>

Note: WinLink will soon require secure passwords for login. As of this writing, I understand the Outpost folks are working on B2 and Secure WinLink upgrades. But Packlink and Airmail are not likely to ever support WinLink secure login and therefore will not work with BPQ BBSs for direct RMS Gateway access. It is still possible to send WinLink via the BBS with these clients. Contact Joe if you have any questions.

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National Traffic System (NTS)

- American Radio Relay League was established as a message relay organization.
- Oldest method for message forwarding.
- Well-established “tradition”
- “Manual” NTS as well as “Digital” [NTSD](http://www.arrl.org/files/file/Public%2520Service/MPG604A.pdf)
- Radio Relay International Digital Ops:
  - [http://radio-relay.org/about/dtn/](http://radio-relay.org/about/dtn/)
- Advantage over WinLink and BBS alone:
  - Commitment of NTS volunteers to get the message through
NTS Hierarchy and Modes

- US and Canada organized into Area, Region, and Local Nets
  - 3 Areas
  - 12 Regions
- Traffic Flow:

Graphic thanks to Dave Struebel, WB2FTX
NTS Areas

Thanks to Dave Struebel, WB2FTX
**The American Radio Relay League**

**RADIOGRAM**

Via Amateur Radio

<table>
<thead>
<tr>
<th>Number</th>
<th>Precedence</th>
<th>HX</th>
<th>Station of Origin</th>
<th>Check</th>
<th>Place of Origin</th>
<th>Time Filed</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>704</td>
<td>R</td>
<td>C</td>
<td>N2GS</td>
<td>14</td>
<td>CHESTER NJ</td>
<td>1830</td>
<td>JUL 2</td>
</tr>
</tbody>
</table>

To:

**JOE SMITH KC2XXY**
1234 SECOND ST
SUMMIT NJ 07901

This Radio Message was received at:

Amateur Station: __________________ Date: ______
Name: ___________________________ Street Address: __________
City, State, Zip: ________________

Telephone Number: 650-123-4567

**THE ARRL RADIOGRAM TO FOLLOW**

---

This Radio Message was received at:

Amateur Station: __________________ Date: ______
Name: ___________________________ Street Address: __________
City, State, Zip: ________________

Telephone Number: 650-123-4567

**Thanks to Dave Struebel, WB2FTX**

---

**GREG SZPUNAR N2GS**

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The American Radio Relay League, Inc. is the National Membership Society of licensed radio amateurs and the publisher of QST Magazine. One of its functions is promotion of public service communication among Amateur Operators. To that end, the League has organized the National Traffic System for daily nationwide message handling.
To Manually Send NTS Traffic via AG6QO BBS

• First compose and format your message:

```
Subject Line

QTG WOODLAND / NO PHONE

NR 1 R HKX AG6QO 24| WINTERS CA JAN 5 2014
BARK Members
637 Fairview Drive
Woodland, CA 95695
NO PHONE
BT
AG6QO BBS can ACCEPT NTS TRAFFIC X USE THE ST COMMAND X SEE AG6QO DOT COM SLASH BBSUSE DOT PDF FOR MORE INFO X
BT
JOE AG6QO
AR

Message No; Priority; Instructions; Originator; Count; Orig Location; Date
```
To Manually Send NTS Traffic via AG6QO BBS

• Next enter it into the BBS:

```(0) AG6QO BBS>
  st 95694@NTSCA
  We have no forwarding route for 95694. SYSOP will be advised.
  Enter the title for this message to 95694 :
  QTC WOODLAND / NO PHONE:
  Enter the text for this message, end with Ctrl-Z or /EX on a blank line):
  NR 1 R HG AG6QO 34 WINTERS CA JAN 5 2014
  BARK Members
  Woodland, CA 95695
  NO PHONE
  BT
  AG6QO BBS can ACCEPT NTS
  TRAFFIC X USE THE ST
  COMMAND TO SEND X USE
  THE LT COMMAND TO LIST
  TRAFFIC X SEE AG6QO DOT
  COM SLASH BBS USE DOT PDF
  FOR MORE INFO X
  BT
  JOE AG6QO
```

End your message with a line that starts with:

```
/EX
```

That’s IT! Your message will be sent via RF to the area specified in the address zip!


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To Manually Receive NTS Traffic via AG6QO BBS

- Use the LT command to “List Traffic”

- Must follow strict protocol to avoid loss or dead-ending of messages
  - It is recommended that you become an official NTS DRS if you intend to deliver traffic. SOPs are a must!
  - On the BPQ system, traffic messages are not ‘killed’, but simply marked ‘delivered’ with the ‘D’ command.
  - Do not attempt to deliver traffic which has already marked as forwarded. It can result in double-delivery. Very unprofessional.

If you want to know how to become an NTS or RRI participant, please ask a DRS or contact a member of RRI. [http://radio-relay.org/](http://radio-relay.org/)

AG6QO logs into the California NTS hub and picks up messages for area 95***@NTSCA zip codes and forwards outgoing messages many times per day.
To Use RMS Express to Send/Retreive NTS Traffic 1

• First Install and Configure RMS Express as described in the RMSE Configuration Section at the rear of this presentation

1. To send a message, click on the “New Message” icon.

NOTE: Be sure you are configured as a “BBS” user on the AG6QO-1 BBS. If you are uncertain, contact the Sysop (Joe).
To Use RMS Express to Send/Retreive NTS Traffic

2. In the message form, enter a properly addressed and formatted NTS message.

3. Be sure the “Winlink Message” is clicked. This may not make sense since you are sending via the BBS/MBO, not WinLink, but this allows the BBS/MBO to recognize you as a RMS Express user.

4. Click on “Post to Outbox”. This will Queue the message for sending, but you aren’t done yet.

If connecting to BPQ, MBO or DRS, be sure to pre-pend “NTS:" to the zip address, so BPQ will tag it as a “T” type message.
To Use RMS Express to Send/Retreive NTS Traffic 3

5. Your message will now show up in the “Outbox”.

6. Now click on “Open Session”, which will open a connection dialog, and connect to the BBS using the previously configured information.
To Use RMS Express to Send/Retrrieve NTS Traffic 4

8. RMSE will log into the BBS/MBO, send your message and retrieve any waiting for your callsign or tactical callsign on the BBS/MBO.

7. Click on “Start” session.

That’s it! Your message is now posted on the AG6QO-1 BBS which will automatically forward it to its destination via the most appropriate route!
Reference Material

- **Online BPQ BBS User Guide**
  - [http://www.cantab.net/users/john.wiseman/Documents/BBSUserCommands.html](http://www.cantab.net/users/john.wiseman/Documents/BBSUserCommands.html)

- **AG6QO BPQ BBS web log**
  - [http://ag6qo.com/RpiBPQnode.html](http://ag6qo.com/RpiBPQnode.html)

- **AG6QO BPQ BBS Tutorial**

- **NTS, NTSD, ARES – NTS, WinLink interoperability reference guide**
  - [http://wx4j.com/MPG6_NTS_NSD_RADIOEMAIL.htm](http://wx4j.com/MPG6_NTS_NSD_RADIOEMAIL.htm)

- **ARRL National Traffic System**
  - [http://www.arrl.org/chapter-one-national-traffic-system](http://www.arrl.org/chapter-one-national-traffic-system)

- **ARRL NTS-Digital (NTSD) Manual**

- **NTSD Wiki-page**

- **Berks Co ARES - “Getting Started with Airmail Packet”**

- **WinLink Client Comparison**
  - [http://www.winlink.org/ClientSoftware](http://www.winlink.org/ClientSoftware)
Joe Contact Info

– Cell Phone: Ask via message or email
– BBS: AG6QO@AG6QO.#NCA.CA.USA.NOAM
– WinLink: AG6QO@winlink.org
– Email: jod@online-tek.com
– Ham info: http://ag6qo.com/
– Professional Info: http://www.linkedin.com/in/joedeangelo/
RMS Express Configuration 1

From the Files Menu:
Select: RMS Express Setup

- Use “Packet WL2K” or “PACTOR WL2K” to connect to the BBS

NOTE: If you use RMS Express, the BBS should automatically configure your user profile properly. But if you have any difficulties, contact AG6QO for assistance.
Please uncheck the “Add ‘WL2K’ to the subject” option when using RMS Express for NTS messages.

It violates NTS Message formatting.
RMS Express Configuration 2

- Fill in “My Callsign”
- Add your Grid Square
- You don’t have to enter your WinLink password, as you are using RMSE to access the BBS, not WinLink.
- Contact Information, is only used with WinLink and, only if you need support from the WinLink team. You don’t need to fill this in.
RMS Express Configuration 2

Select “Open Session” with Packet WL2K

Next Set up your TNC configuration.
RMS Express Configuration 3

From “Setup” click to configure your TNC
RMS Express Configuration 4

- Select your TNC type and connection info
- Hit “Update”
Select whether you’re connecting direct or via digipeater or node script

• Add digi’s after “Via” if using digipeaters
• Callsign for the BBS is AG6QO-1
• To start a connect session, hit “Start”
• Any messages in your Outbox will be forwarded to the BBS.
• Any messages on the BBS for you, will be downloaded and appear in your Inbox

That’s it! You’re ready to begin using RMS Express to access the BBS!
How To Configure Outpost 1

To set up Outpost for use of AG6QO BBS from Setup>BBS * BBS Name tab:

![Select a BBS dialog box](image-url)
How To Configure Outpost 2

• Go to the “BBS Commands” tab:

If not already the same, setup the commands as shown.
How To Configure Outpost 3

- Now that you have a BBS setup for AG6QO-1...
- From the Outpost “Setup” menu selection, choose *Setup > BBS*
- First select *AG6QO-1*
- Then Select *BBS Path Tab*
How To Configure Outpost 4

• You’ll get the following window,
• Then, select “KA-NODE/Netrom Access”.
• Then, select “Create/Update Path”
How To Configure Outpost 5

- When you get the “Node Path Setup for AG6QO-1” Screen,
- fill it in as follows, then click OK:

You are now ready to use AG6QO-1 BBS from Outpost!

REMEMBER, the above Node setup will only work on 144.37! BERR37 does not exist on 145.050
Paclink/Thunderbird Configuration 1

- After installing Paclink, configure as follows:
- From File>Site Properties

  Enter your callsign with SSID

  Enter your POP user password. This is the password you’ll enter into your POP mail client to retrieve mail from Paclink

  Enter your Site grid square location.
Paclink/Thunderbird Configuration 2

• From File>Packet TNC Channels...

Enter a name for the channel indicating it’s for AG6QO BBS and select “Add New Channel”

Select TNC Type from the list

Enter frequency and connect script as shown

Enter correct baud rates and COM port

Select “Manual” radio control

“Update the Channel”
Paclink/Thunderbird Configuration 3

- From Connect> Connect to...>Channel Name

After Paclink is configured for your TNC and station information, connect to your TNC and radio tuned to the BBS.

Be sure you have a user account on the BBS configured to forward to you with B2 protocol.

From Paclink initiate a message check by selecting Connect> Connect to...> Channel Name
After Thunderbird is installed, configure a new “email” account to use Paclink as its POP mail server.

Paclink was developed for use with WinLink, so you MUST use an @winlink.org address (you do have a WinLink address don’t you?).
Enter the account name (can be whatever reminds you of its use).

Enter a winlink.org email address (note you don’t really need to have one, if you are using Paclink only for BBS communication, but Paclink will only accept winlink or normal email addresses. More about this later.) Enter your Paclink POP mail password (from slide 27)

Select “Continue”
Select “Manual Config” or wait for the auto-verification to fail.

Select Incoming POP3; 110; None; Normal password

Select Outgoing SMTP; 25; None; Normal password

Username will autofill.

Select “Done”
Paclink/Thunderbird
Configuration 6

- At this point, start up paclink (your mail “server”)
- you should be able to compose a new Radio Mail using Thunderbird, hit send and have Thunderbird hand it off to Paclink
Go to Paclink and with your radio/tnc connected and tuned to the BBS frequency, select: Connect>Connect to...> BBS Channel Name

At this point Paclink will connect to the BBS, forward your queued messages, and download any waiting for you on the BBS.
Paclink/Thunderbird
Configuration 7

- At this point, your message appears on the BBS message list, and will be queued to forward via the BBS forwarding network (in the case of a BBS addressed message), or the WinLInk network (in the case of a WinLink addressed message). The BBS takes it from here!

MID: 58E6PUYGR1ME
Date: 2015/07/12 21:49
Type: Private
From: AG6QO
To: K6ETA@K6ETA.#NCA.CA.USA.NOAM
Subject: //WL2K Greetings
Mbo: AG6QO
Body: 183

Hey Steve,
How goes the BBS? Any new developments?

I'm in the midst of a user recruitment/training campaign here. Such as it is.

--
73,
Joe
AG6QO@AG6QO.#NCA.CA.USA.NOAM
Paclink/Thunderbird Configuration 8

• If Paclink downloaded any messages FOR you from the BBS, you can retrieve them for reading within Thunderbird: