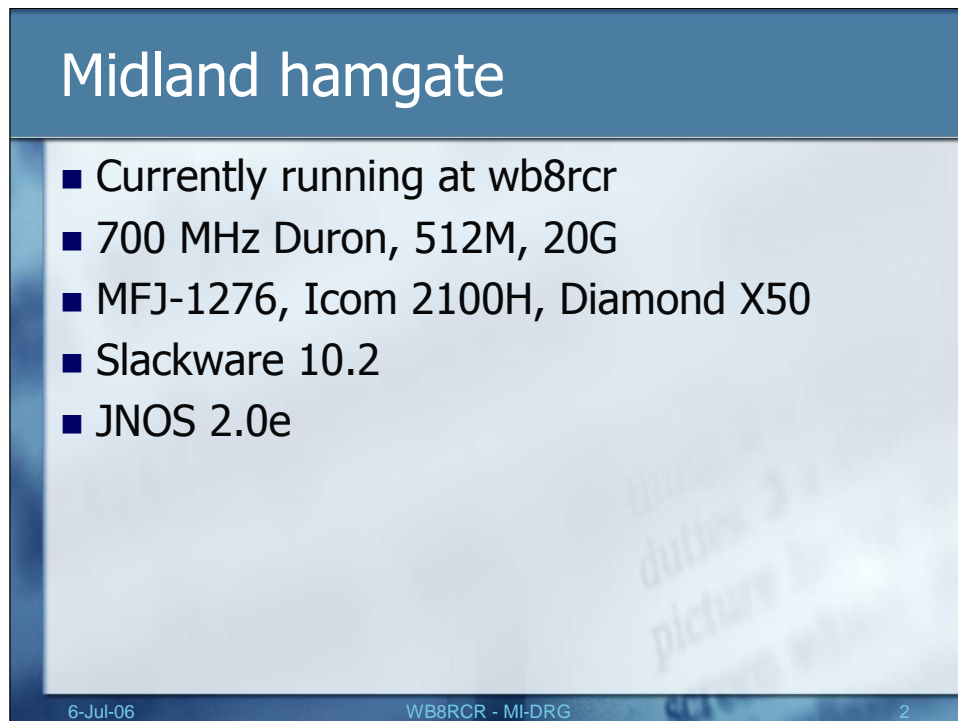




# Midland Status

MI-DRG 8-Jul-06



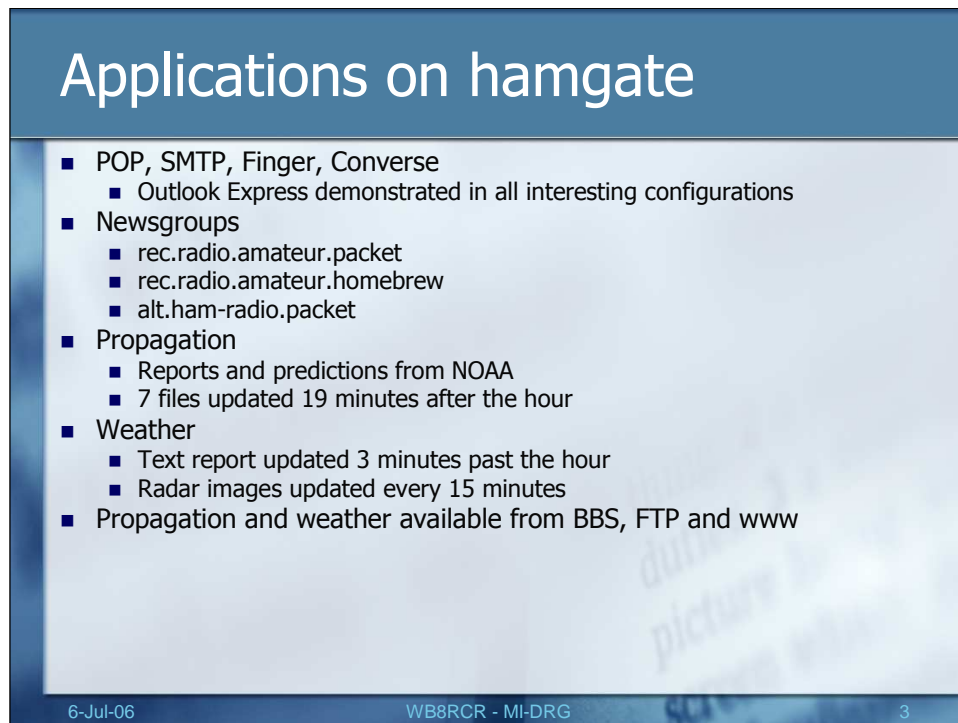
## Midland hamgate

- Currently running at wb8rcr
- 700 MHz Duron, 512M, 20G
- MFJ-1276, Icom 2100H, Diamond X50
- Slackware 10.2
- JNOS 2.0e

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wb8rcr is currently providing IP routing for Midland county, and surrounding counties without hamgates. JNOS is currently running on Slackware 10.2 on an older box.

The intention is to move the function to hamgate.midland which will be located at the site of the current W8KEA digipeater.



## Applications on hamgate

- POP, SMTP, Finger, Converse
  - Outlook Express demonstrated in all interesting configurations
- Newsgroups
  - rec.radio.amateur.packet
  - rec.radio.amateur.homebrew
  - alt.ham-radio.packet
- Propagation
  - Reports and predictions from NOAA
  - 7 files updated 19 minutes after the hour
- Weather
  - Text report updated 3 minutes past the hour
  - Radar images updated every 15 minutes
- Propagation and weather available from BBS, FTP and www

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JNOS of course provides a capable BBS, but it also provides SMTP and POP3 services, which allow email to be routed over radio circuits. Packet messages (or email messages) can be composed, sent and received with any email client such as Outlook Express.

To make the hamgate an interesting place to visit, a number of other features have been added.

A few newsgroups are picked up from Internet news servers and fed to the BBS.

Propagation reports are taken from NOAA every hour and posted in the downloads section.

The NWS 7-day forecast is downloaded from NWS, reformatted, and posted in the downloads every hour.

Every 15 minutes, Detroit and Grand Rapids radar images are downloaded and processed to reduce the size to a resolution reasonable for packet.

Files in the download area are available through FTP as well as on the BBS.

In addition, an http server was configured. The home page contains an index to the files in the download section, permitting files to be viewed merely by clicking.

## Receiving Mail

The screenshot shows the Outlook Express interface. The 'Send and Receive All' menu option is highlighted in the 'Send and Receive All Ctrl+M' section. A callout bubble points to this menu option with the text: "Once mail is properly set up, getting messages is a matter of selecting the account".

Another callout bubble points to the message content in the message window, stating: "Received packet messages look no different from ordinary email".

The message window shows the following details:

- From: wb8tkl@HamGate.Washtenaw.AMPR.org
- Date: Friday, June 30, 2006 10:38 PM
- To: wb8rcr@wb8rcr
- Subject: #62 R WB8TKL 16 YPSILANTI MI 6/30

The message body contains the following text:

```
MI-ARPRC NET REPORT FOR JUNE
EIGHTEEN X QNI 8 QTC
ZERO QTR 34 MINUTES
NCS WB8TKL
-bk-
Jay WB8TKL
```

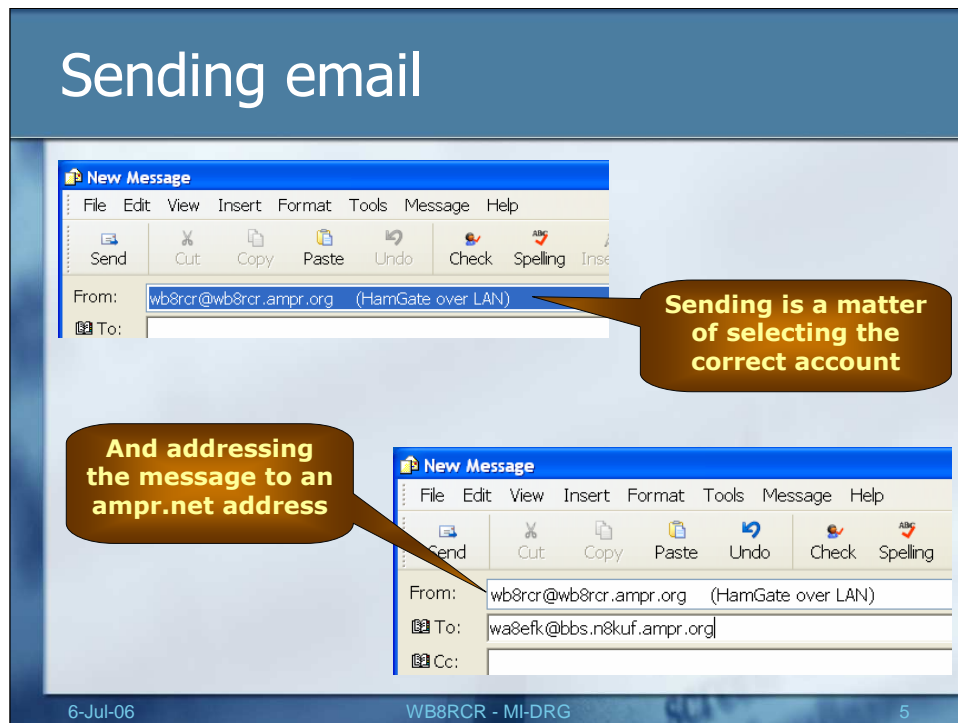
At the bottom of the screenshot, the date "6-Jul-06" and the call sign "WB8RCR - MI-DRG" are visible.

Email is a particularly simple thing to do, once the correct routing has been set, and an email account has been established for the local (or not so local) JNOS node. The JNOS node looks exactly like a normal mail server, and accepts POP3 and SMTP connections.

An account must be first set up on the JNOS node (just like any other mail server). Then an account needs to be set up in the mail client (in this case, Outlook Express) to access the mail account.

The default in Outlook Express is to add the account to the list of accounts normally checked. If the JNOS box is over the air, it might make sense to uncheck the "include this account ..." box and only check when specifically requested.

In either case, the email looks just like ordinary email when it appears in the inbox.



Sending a packet message is equally simple. The user simply selects the packet account in the From: box, and addresses the message to an ampr.org address.

The routing is slightly different, but the usage is exactly the same should the client machine be running AGW's IP stack rather than having a JNOS box on the LAN. Thus, the local EOC, where presumably there would be a JNOS server on the LAN, will be operated exactly the same as a lone laptop in the field.

## Newsgroups

```

You have 0 messages.
New mail in: alt.ham-radio.packet rec.radio.amateur-band
Area: wb8rcr Current msg# 0.
PROP,WX,?,A,B,C,CONV,D,E,F,H,I,IH,IP,J,K,L,M,O,P,PI,R,S,T,U,V,W,X,Z >
area alt.ham-radio.packet
alt.ham-radio.packet: 5 messages - 2 new.
Area: alt.ham-radio.packet Current msg# 4.
PROP,WX,?,A,B,C,CONV,D,E,F,H,I,IH,IP,J,K,L,M,O,P,PI,R,S,T,U,V,W,X,Z >
l
Mail area: alt.ham-radio.packet
5 messages - 2 new

St. # TO FROM DATE SIZE SUBJECT
> N 4 ted Jun 26 1972 Re: Can I ??
N 5 mm58 Jun 27 1543 Looking for article on packet
Area: alt.ham-radio.packet Current msg# 4.
PROP,WX,?,A,B,C,CONV,D,E,F,H,I,IH,IP,J,K,L,M,O,P,PI,R,S,T,U,V,W,X,Z >

```

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When a user logs on to the BBS, whether through Telnet or AX.25, he is notified of any new arrivals in the newsgroups.

A newsgroup is selected with the **Area** command, just like any mailbox area. Messages can be listed with the **List** command, again, like mail.

## Newsgroups

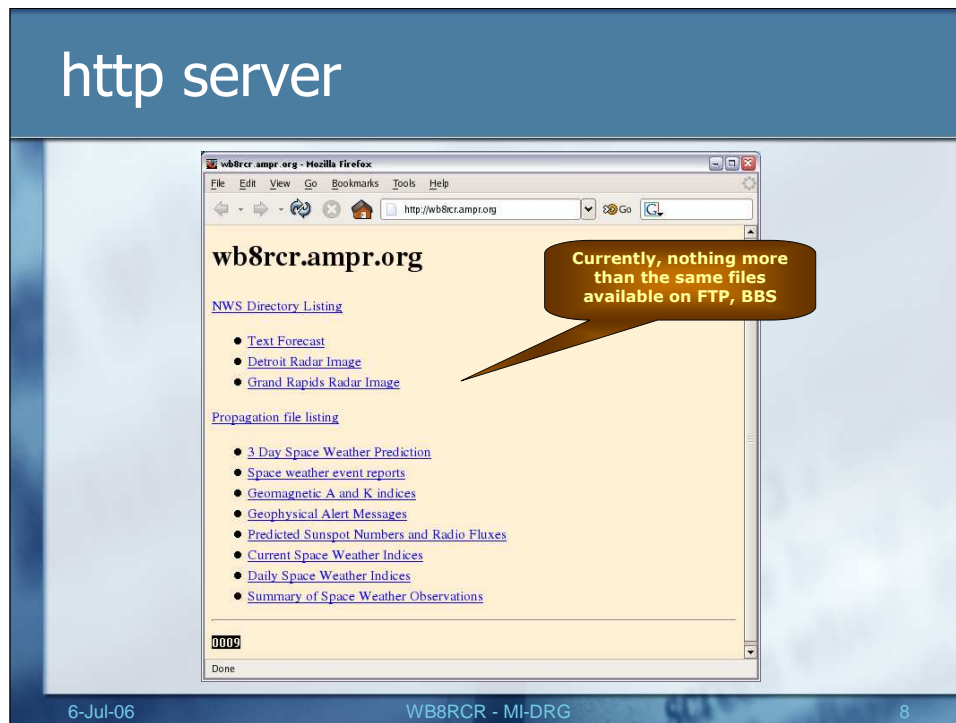
```
St. # TO FROM DATE SIZE SUBJECT
> N 4 ted Jun 26 1972 Re: Can I ??
N 5 mm58 Jun 27 1543 Looking for article on packet
Area: alt.ham-radio.packet Current msg# 4.
PROP,WX,?,A,B,C,CONV,D,E,F,H,I,IH,IP,J,K,L,M,O,P,PI,R,S,T,U,V,W,X,Z >
R 4
Message #4
Date: Mon, 26 Jun 2006 08:20:54 +0100
From: Ted <ted@trufflesdad.plus.com>
Subject: Re: Can I ??

F8BOE wrote:
> Yes, the with the flex soundmodem driver for Linux
>
> 73 de F8BOE Olivier ...-.-
>
> Ted wrote:
>> Can I run packet on Linux without a tnc ??I would like to see what
>> activity there is before I splash out much dosh...I have looked at
```

Read messages like mail

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Messages are read with the Read command, or simply by pressing return for the next message.



The web server provides a reasonably friendly, if somewhat spartan, front end to the file downloads.

# Propagation

The screenshot shows a Mozilla Firefox browser window displaying a plain text file. The address bar shows the URL: <http://wb8rcramp.org/Propagation/Predict.txt>. The text content includes a title, creation date, source information, and a table of predicted sunspot numbers and radio flux values.

```

:Predicted_Sunspot_Numbers_and_Radio_Flux: Predict.txt
:Created: 2006 Jun 19 1400 UTC
# Prepared by the U.S. Dept. of Commerce, NOAA, Space Environment Center (SEC).
# Please send comments and suggestions to sec.webmaster@noaa.gov
#
# Sunspot Number: S.I.D.C. Brussels International Sunspot Number.
# 10.7cm Radio Flux value: Penticton, B.C. Canada.
# Prediction values are based on ISES cycle 23 forecast of 13-month running
# smoothed values.
# Current interpolation prepared by IPS Radio and Space Services, Australia
#
# Missing or not applicable data: -1.0
#
# Predicted Sunspot Number And Radio Flux Values
# With Expected Ranges
#
# -----Sunspot Number----- ---10.7 cm Radio Flux---
# YR MO PREDICTED HIGH LOW PREDICTED HIGH LOW
#-----
2005 12 22.7 23.7 21.7 85.0 86.0 84.0
2006 01 20.0 23.0 17.0 83.0 86.0 80.0
2006 02 17.4 22.4 12.4 81.0 86.0 79.0
2006 03 15.5 22.5 8.5 79.4 86.4 72.4
2006 04 14.8 22.8 6.8 78.2 87.2 69.2
2006 05 14.2 23.2 5.2 77.3 88.3 66.3
2006 06 12.2 22.2 2.2 75.7 88.7 62.7
2006 07 10.3 21.3 0.0 74.3 89.3 60.0
2006 08 9.9 21.9 0.0 73.4 90.4 60.0
2006 09 9.7 22.7 0.0 72.9 91.9 60.0
2006 10 8.5 22.5 0.0 71.9 92.9 60.0
2006 11 6.9 21.9 0.0 70.7 92.7 60.0
2006 12 5.1 20.1 0.0 69.6 92.6 60.0
2007 01 5.4 20.4 0.0 69.8 92.8 60.0

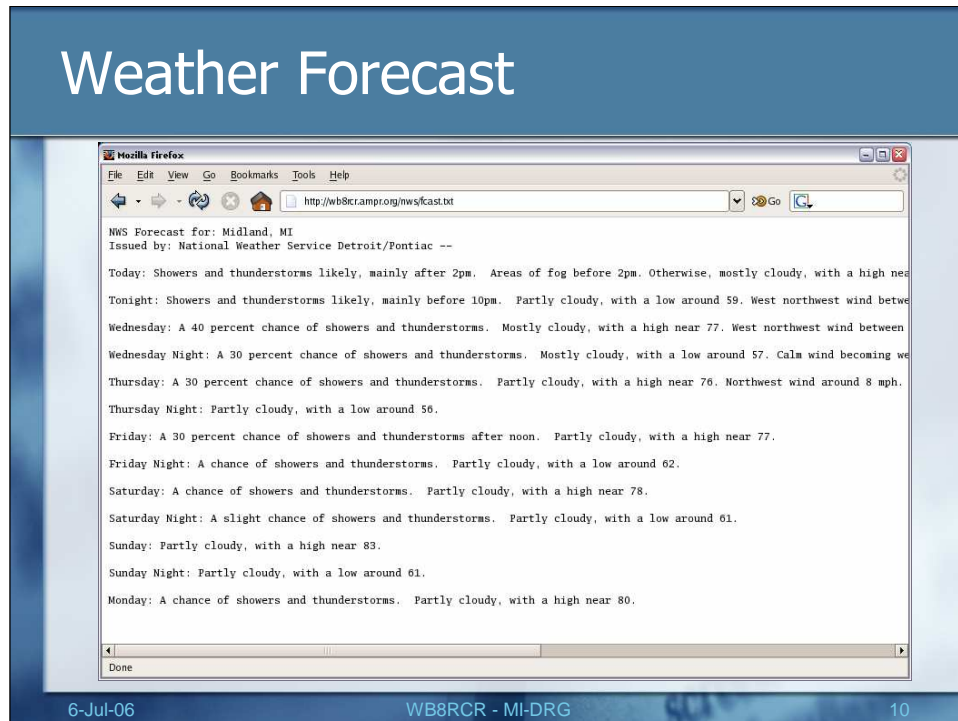
```

6-Jul-06

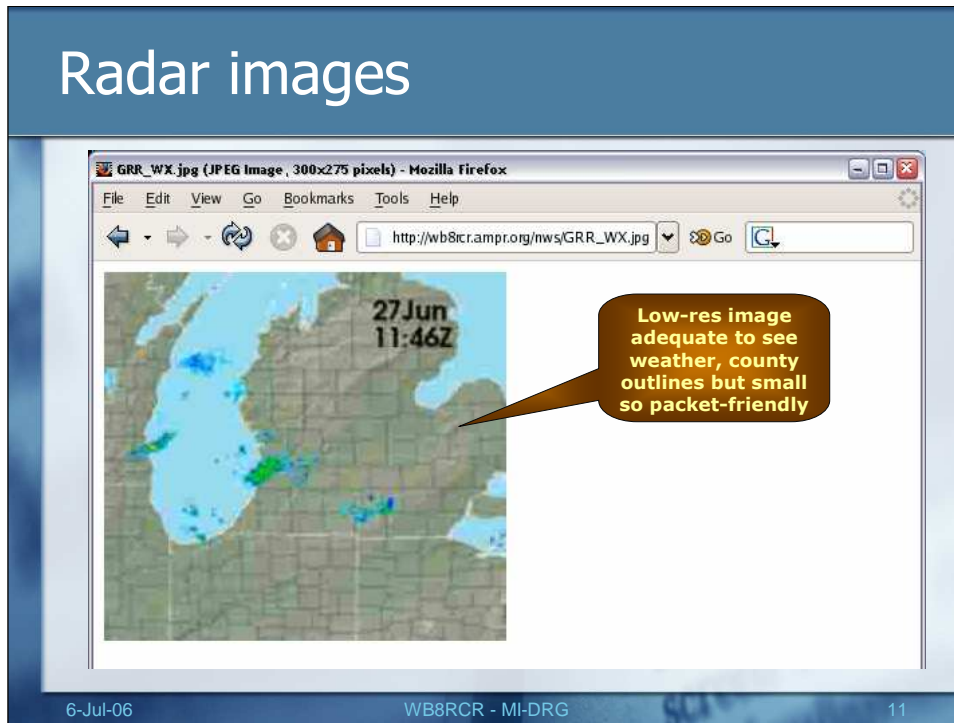
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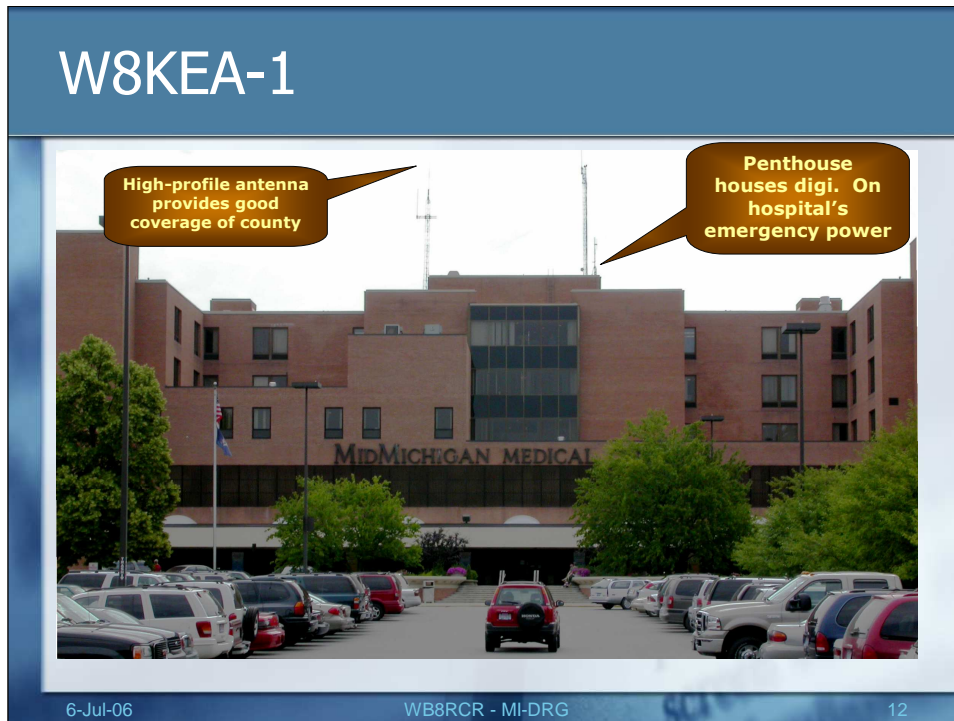
The propagation reports are plain text, and appear in a browser the same as if were they read from the BBS.



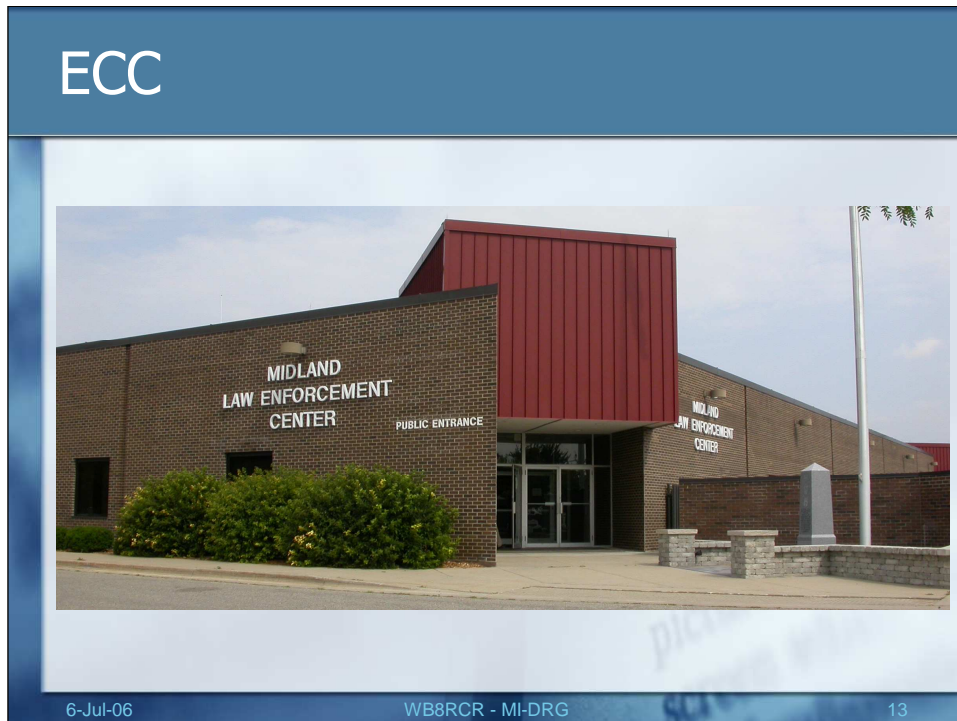
The weather forecast is not wrapped in the browser, something that should perhaps be corrected. Since the Telnet client wraps, this was not an issue until the http server was turned on.



Weather radar is very low resolution to be packet-friendly, but the images are sufficient to see county outlines and identify where the storms are.



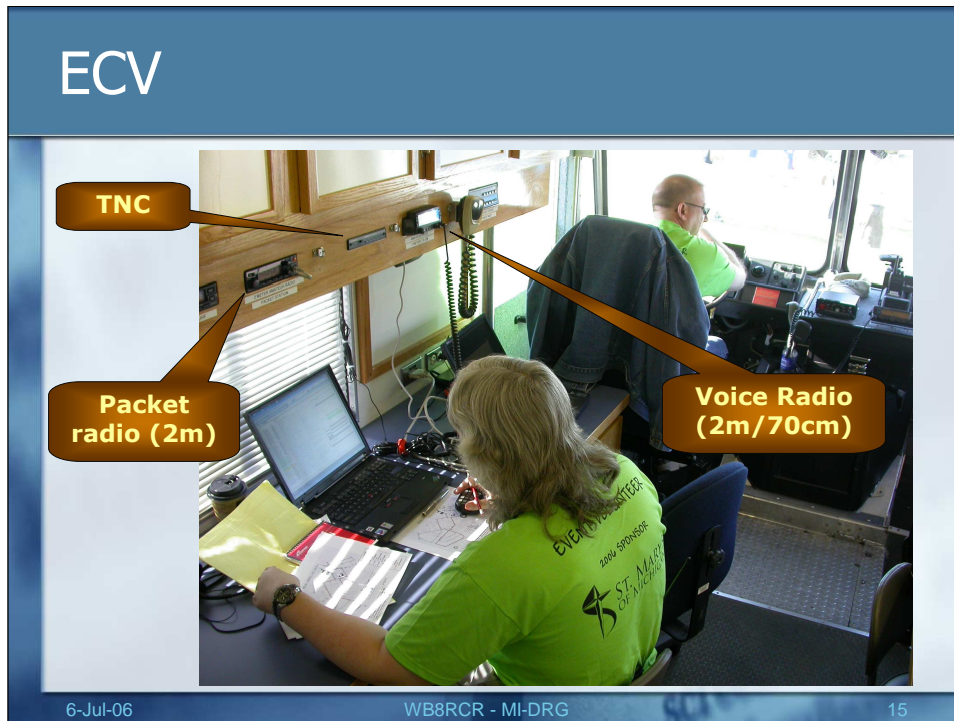
The current Midland digipeater is sited at the Mid-Michigan Medical Center, which will be the future home of hamgate.midland. The equipment is located in a sixth-floor penthouse and powered from the hospital's emergency power. The digipeater provides good coverage of Midland County.



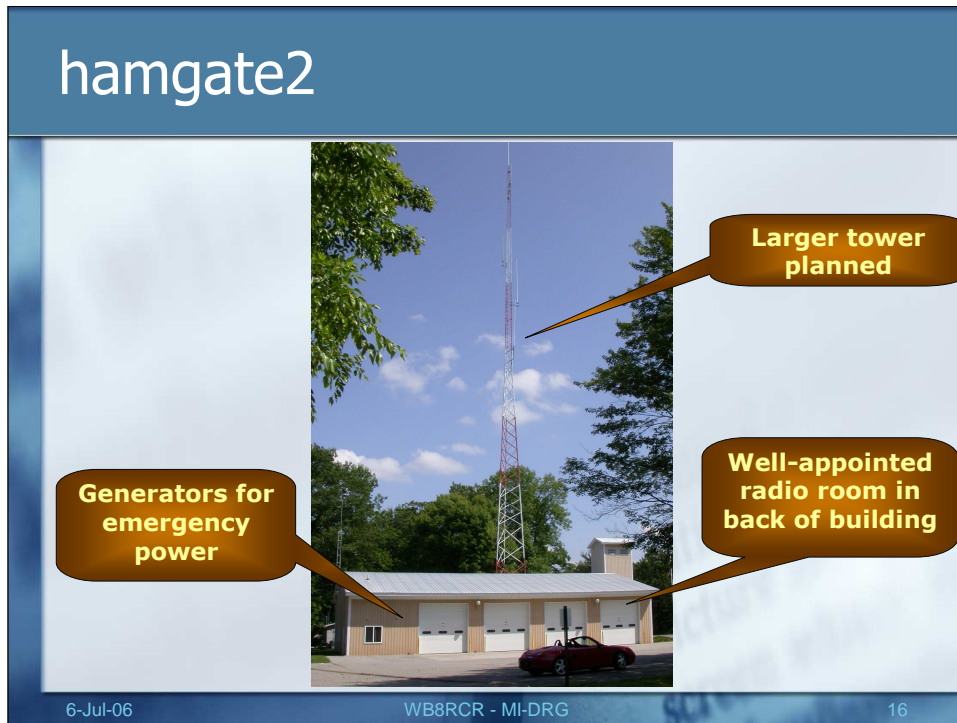
Our primary customer is the county ECC (Midland-speak for EOC), which operates from the Midland Law Enforcement center. The local RACES group currently maintains a packet station just outside the ECC room, in the 911 center.



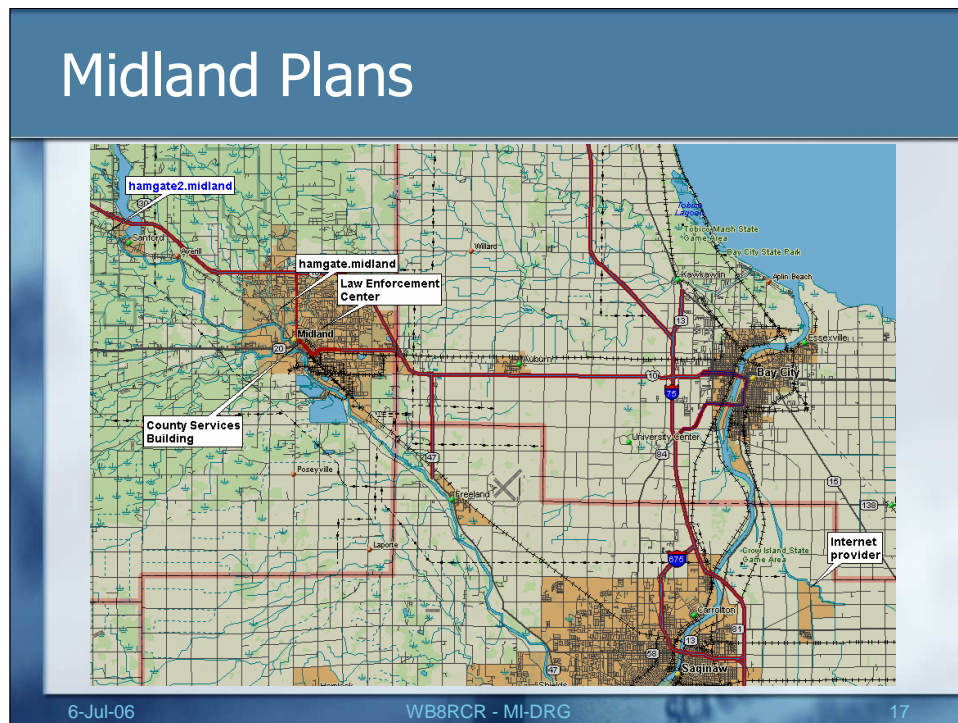
Another key customer site is the County Services Building. The organization also maintains a packet station at this location, which includes the headquarters of Midland County Emergency Services.



The county's Emergency Command Vehicle provides a command post for incidents. The ECV includes both packet and voice radios, as well as a laptop dedicated to packet. When hamgate.midland is deployed, the AGW IP stack will provide for IP connectivity.



A second hamgate is planned west of town in Jerome township. This site also has a good radio room and a high profile tower, planned to be replaced with an even larger tower. This site should provide handheld coverage to the western edges of the county, as well as providing a backup should the hospital site become disabled.



The Internet connection for the hospital site will be provided by a wireless provider approximately 23 miles from the hospital. Internet for the Jerome site will be provided local to that site.

This arrangement should provide two points of access relatively immune to the same assaults that might affect the ECC. In the future, it is expected that hamgate.bay will provide a third point of contact.

In a worst case scenario, hamgate.alcona is accessible, although we currently know of no TCP/IP radio paths; only AX.25.

## RF Considerations

- 2 meter local access frequency, followed soon by 70cm local access
- 23 cm link to hamgate2
- Possible 23 cm to EOC
- Would like to see fast (70, 23 cm) link to hamgate.bay

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The hamgate makes higher speed local access frequencies feasible. With the gateway in place, a 9600 baud local access frequency can be considered without excluding the bulk of the amateurs who are currently equipped for 1200 baud.

Point to point links, possibly 23 cm., are being considered to link hamgate2, and possibly the ECC.

When hamgate.bay comes online, we would like to see a high speed link there, too.

In experimenting with the local HamGate, it has become obvious that router to router links must operate on different frequencies than incoming traffic. Given the proximity of most packet frequencies, at least on 2 meters, this likely will mean different bands.