



Anoka County Radio Club and Emergency Services

Volume 3, Issue 5

Newsletter

September/October 2007

Simple Supper and General Meeting

This is a call to all members to attend the Simple Supper and our first General Meeting since the summer began. We will be discussing an offer from Dan Fish of a D-Star Repeater System donation to the club. We need club member input since there will be associated equipment that the club would need to acquire to fulfill the deal and make the repeater system operational. We may take a member vote on this as well.



So come join us on Friday, September 7th starting at 6:30 at the Blaine Baseball Complex, 1150 Paul Parkway. The club will be providing brats, hot dogs, buns and pop so bring a dish to share with everyone and enjoy the pot-luck dinner. This is a family friendly event too, so feel free to bring the kids. We look forward to seeing everyone there!

D-Star Repeater Opportunity

Dan Fish KBØXC of Radio City offered the Anoka County Radio Club the opportunity to receive, as a donation, a D-Star Repeater Controller and a 1.2 GHz Voice and Data module. Icom had setup a deal with their distributors where, upon meeting specific sales goals of Icom products, they would be given components of an entire D-Star repeater system (controller, 1.2 GHz Digital, 1.2 GHz Voice, 440 and 2-meter), one at a time. He would like to see the components he received used in the Anoka County area, preferably with ACRC, co-managed with Anoka ARES.



Dan feels that the D-Star technology is the direction to go for the future of ham radio and is excited to see the possibility of having a full D-star repeater setup in the Anoka County area. He is still working on attaining the 440 and 2-meter modules, but has promised them to us once they become available to him as part of the sales incentive program.

It should also be noted that this offer is for only the core repeater units and doesn't include any of the external pieces (Duplexer, Muxer, Antenna, feedline, etc). There are costs that we will need to cover before the system would be operational. We will be sharing more details on this opportunity at the Simple Supper and General Meeting on September 7th. We will be asking the members at that meeting what they think about the offer, so be sure to attend to have your voice heard!

Upcoming Events

Just a reminder that the annual **Christmas party** is coming up! All members are invited to bring your family and join us as we get together for a night of food and fun on Saturday, December 8th, 2007. Details and a tentative menu will be presented at the September Simple Supper and General meeting. The **Kit Builders Group** will be starting up again real soon. **Ham radio exam classes** will be announced shortly as well. Please stay tuned to our website for dates and times.

ACRC Net

The Anoka County Radio Club hosts a net every Wednesday night at 7:00 p.m. on the 146.670 Repeater. Your regular Net Control is club member Parry Brown KCØTWB. Don't forget the 114.8 PL tone needed to access our repeater. If you have any ideas for content on the net, please contact Parry at kc0twb@msn.com or on the net!

Silent Key

Club member John Johnson KCØWTH became a silent key on January 26, 2007. He had first received his Technician Class license on May 18, 2006 and was a frequent check-in to our 2-meter net. Our condolences go out to his wife and family. He will be greatly missed.

A D-Star Primer

Here are some history, details and benefits of using D-Star. These pages were used with permission from the ICOM America website: <http://www.icomamerica.com/amateur/dstar/default.asp>

What is D-STAR?

The History

D-STAR, a standard published in 2001, is the result of three years of research funded by the Japanese government and administered by the JARL to investigate digital technologies for amateur radio. The research involved Japanese radio manufacturers and other observers. Icom provided the equipment used for development and testing. D-STAR radios and repeaters have been tested extensively and are now ready for public use.

An Overview

D-STAR is an open protocol – although it is published by JARL, it is available to be implemented by anyone. While Icom is the only company to date that manufactures D-STAR-compatible radios, any equipment or software that supports the D-STAR protocol will work with a D-STAR system. D-STAR systems can be built using both commercial and homebrew equipment and software.

In a D-STAR system, the air link portion of the protocol applies to signals traveling between radios or between a radio and a repeater. D-STAR radios can talk directly to each other without any intermediate

equipment or through a repeater using D-STAR voice or data transceivers. The gateway portion of the protocol applies to the digital interface between D-STAR repeaters. D-STAR also specifies how a voice signal is converted to and from streams of digital data, a function called a codec. The D-STAR codec is known as AMBE® (Advanced Multi-Band Excitation) and the voice signal is transmitted in the D-STAR system at 3600 bits/second (3.6 kbps).

D-STAR Digital Voice(DV) and Digital Data

The D-STAR system supports two types of digital data streams. The Digital Voice (DV) stream used on 144 and 440 MHz contains both digitized voice (3600 bps including error correction) and digital data (1200 bps). Using a DV radio is like having both a packet link and FM voice operating simultaneously. The Digital Data (DD) stream, used only on 1.2 GHz, is entirely data with a bit rate of 128k bps. The data connection to a radio that uses DV is via an RS-232 interface or USB 1.0. An Ethernet connection is used for high-speed DD D-STAR data. Ordinary terminal emulation software (DV) or a Web browser (DD) will do just fine for exchanging data.

Repeaters and repeater systems

Repeater links and groups

D-STAR gateway protocols and software support linking repeater systems over a few miles or around the world. A regional group of repeaters create a D-STAR zone working together and addressable in the D-STAR system as a unit. Whether you live in the wide-open spaces or a densely populated area, D-STAR repeaters can be tied together to make up the repeater system you want using either Internet or microwave links.

Repeater system management

Repeaters linked with D-STAR can also share information using the same D-STAR link. This information includes repeater operating information and statistics. System designers can add entirely new functions, sharing weather and control information, for example. Another possibility is “smart systems” that track interference or user location.

D-STAR channel spacing = more channels

If you've tried to coordinate a repeater channel on 2-meters or 440 MHz in any metropolitan area, you know how crowded the bands are!

The D-STAR voice and low-speed data signal offers a significant improvement in spectrum efficiency, requiring only a 6 kHz channel instead of the 20, 25, or even 30 kHz of analog wide-band FM. D-STAR repeaters can be interleaved between existing channels or multiple repeaters deployed in the spectrum of only one analog FM repeater.

D-STAR registry

As authorized users make their initial transmission to a D-STAR system, the call sign information attached to the digitized voice packets is recorded by the repeater controller. The controller then shares the information with other D-STAR systems through the D-STAR gateway registry. The registry is maintained on gateway servers located around the world -- currently Japan, the United States, and the UK. When an authorized D-STAR user makes a call to a call sign not currently registered on that repeater system, the registry allows the repeater controller to route the call to the repeater on which the targeted user was last registered.

New services and system examples

Information and services - the D-STAR kiosk

Imagine arriving in town as a visitor or on business. Connect a laptop or PDA to your D-STAR handheld, key in a few simple characters, and request a "what's happening" report from a local D-STAR kiosk server. In seconds, you're viewing text listing meetings, clubs, electronics stores, and events. Need a weather check? A few more characters and the screen fills with the current report.

D-PRS

The low-speed data ports of D-STAR handheld radios are compatible with the GPS NMEA data interface. With GPS data integrated into the D-STAR digital data stream, your location data is forwarded to the D-PRS server where gateway software connects you to the APRS® reporting system. The interface is built-in to D-STAR radios – no separate TNC and transceiver required!

IRLP and EchoLink

It's only natural that D-STAR's digital voice capabilities will be linked up with the most popular repeater sharing applications, EchoLink® and

IRLP. Since your voice is already digitized within the D-STAR system, third party bridges and converters to and from other digital voice systems an obvious and expected future addition.

Remote control and monitoring

Since D-STAR's data looks just like any other Internet data to a browser or Web application, why not use D-STAR's high-speed data to build a link to your club's HF station? Want to control your electronics at home? Either high-speed or low-speed D-STAR data can do the job. D-STAR is built to support 21st century tools - the Web, networking, Ethernet, TCP/IP - so free your imagination!

Application Developers

The open D-STAR protocol provides a rich, exciting set of tools with which hams can experiment and build. Icom supports developers with the D-STAR forums at www.icomamerica.com/amateur/dstar – please join this growing community. In addition, Icom is preparing technical support documentation for the developer, such as protocols and interface descriptions.

Frequently Held Myths About D-STAR

Myth #1: "D-STAR only works on 1.2 GHz."

Low-speed DV D-STAR voice and data works just fine at 144 and 440 MHz. 1.2 GHz supports the bandwidth needs of high-speed DD data. Choose the technology that satisfies your needs.

Myth #2: "There's no difference between D-STAR and packet."

Even D-STAR's lowest speed is competitive with the highest-performance packet systems available today. D-STAR's simultaneous digital voice and data at 4800 bps is beyond the capability of any packet technology. High-speed D-STAR systems are ten times faster than the highest packet speeds.

Myth #3: "D-STAR is no different from IRLP or EchoLink®"

VOIP systems like IRLP and EchoLink® are only capable of routing voice signals. They don't support data exchange at any speed. Calls targeted to a specific user are not possible by any amateur technology except for D-STAR.

Myth #4: "D-STAR is just a digital party line!"

The ability of D-STAR repeaters to route data and digitized voice worldwide sets it far apart from a simple party line. Sophisticated D-STAR controllers and gateways implement modern telecommunications functions in an amateur package.

Myth #5: "D-STAR is a replacement for broadband home Internet"

Truly a fantasy! D-STAR can connect a user to the Internet, true, but all of the amateur radio restrictions on commercial activity still remain in place. D-STAR will provide the tools for a lot of great amateur innovation, but it's not intended to replace Internet providers.

Myth #6: "I'll be locked into Icom equipment forever."

While Icom is the first manufacturer to support D-STAR, any manufacturer or amateur can use the JARL standards to create equipment – transceivers, repeaters, and gateways – compatible with the D-STAR system. As the D-STAR system grows, look for other manufacturers to join the fun.

AERO Basic Class

The AERO Basic Class will be held on Saturday, September 15, 2007 at Bloomington Fire Station #1. Please contact Dan Peitso, N0PIY to register for class at N0PIY@arrl.net.



Anoka County Radio Club and Emergency Services

Volume 3, Issue 5

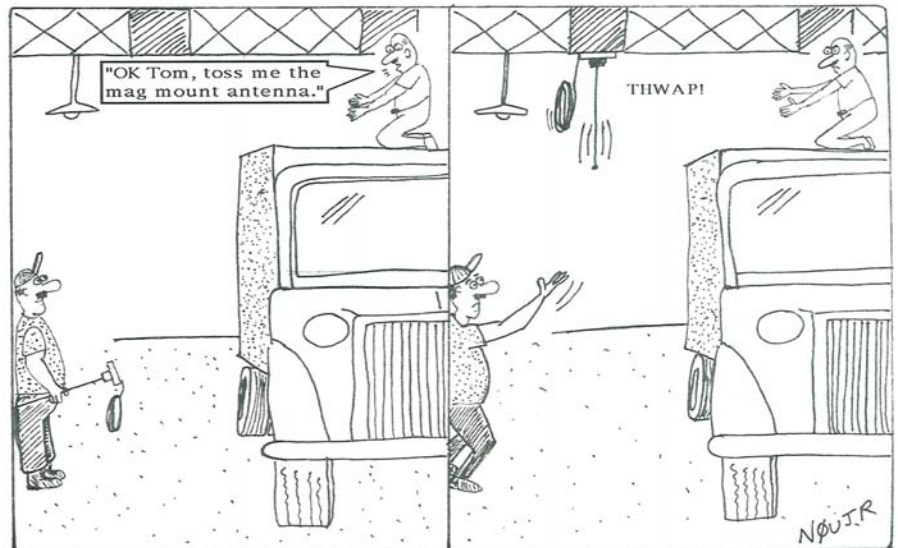
Newsletter

September/October 2007

Inside This Issue

- 1 Simple Supper and General Meeting
- 1 D-Star Repeater Opportunity
- 1 Upcoming Events
- 1 ACRC Net
- 1 Silent Key
- 2-3 A D-Star Primer
- 4 Board Members / Membership
- 4 Calendar Of Events
- 5 Comic

Copyright © 2007 by Greg Trook



© Copyright 2007 by Anoka County Radio Club, Written by Shawn Rung KØSMR

Anoka County Radio Club and Emergency Services
P.O. Box 982
Anoka, MN 55303

ACRC Board Members

President
Chrissy Neu – KCØOKE
chrissysharp@gmail.com

Vice President
Bob Cordell (KBØGIP)
kb0gip@juno.com

Secretary
Shawn Rung – KØSMR
k0smr@arrl.net

Treasurer
Tim Neu – KCØLQL
tim.neu@gmail.com

Board Member at Large
Pete Alcock – KBØKHZ
kbokhz@juno.com

Board Member at Large
Dan Peitso – NØPIY
dan-peitso43@comcast.net

Our Repeaters

Anoka County Radio Club sponsors two repeaters:

146.670 / 146.070 with a 114.8 PL Tone
224.940 / 223.340 with a 100.0 PL Tone

For more details on our club's repeaters, visit our website at: <http://www.anokaradio.org/repeaters>.

Our Homepage

You can check out our homepage on the web at:
<http://www.anokaradio.org>.

Becoming A Member

Ready to join the Anoka County Radio Club? Becoming a member is easy! Just download a membership form from our website at: <http://www.anokaradio.org/membership>, fill it out and either mail it to us or bring it to any of the club meetings. Forms are also available at those meetings. Some of the common membership options are:

| Membership | Annual Cost |
|------------|---------------------|
| Individual | \$25 |
| Senior | \$15 |
| Family | \$35 |
| New Ham | Free for one year * |

* See more membership details on our website.

Send the form and payment to:

Anoka County Radio Club and Emergency Services
PO Box 982
Anoka MN 55303

Calendar Of Events

September 2007

ACRC Net
Every Wednesday night at 7:00 p.m. on the 146.670 Repeater (114.8 PL Tone).

Anoka County ARES Net
The second and fourth Wednesday of each month after the ACRC Net (about 7:30 p.m.) on the 146.670 Repeater (114.8 PL Tone). See the Anoka-ARES website for more details.

Simple Supper and General Meeting
Friday, September 7th at 6:30 p.m. at the Blaine Baseball Complex. All members are strongly encouraged to attend.

VE Testing
Saturday, September 8th at 9:00 a.m. at the Blaine City Hall.

AERO Basic Class
Saturday, September 15, 2007 at Bloomington Fire Station #1. Please contact Dan Peitso, NØPIY to register for class at NØPIY@arrl.net

Anoka County ARES Meeting
Monday, September 17th from 7:00 to 9:00 p.m. at the Blaine Service Center. More info is on the website – www.anoka-ares.org.

ACRC Board Meeting
Tuesday, September 18th at 7:00 p.m. at the Blaine Baseball Complex. All members are welcome to attend.

October 2007

ACRC Net
Every Wednesday night at 7:00 p.m. on the 146.670 Repeater (114.8 PL Tone).

Anoka County ARES Net
The second and fourth Wednesday of each month after the ACRC Net (about 7:30 p.m.) on the 146.670 Repeater (114.8 PL Tone). See the Anoka-ARES website for more details.

General Meeting
Friday, October 5th at 7:00 p.m. at the Blaine Baseball Complex. All members are encouraged to attend.

VE Testing
Saturday, October 13th at 9:00 a.m. at the Blaine City Hall.

Anoka County ARES Meeting
Monday, October 15th from 7:00 to 9:00 p.m. Location and more info is on the website – www.anoka-ares.org.

ACRC Board Meeting
Tuesday, October 16th at 7:00 p.m. at the Blaine Baseball Complex. All members are welcome and encouraged to attend.