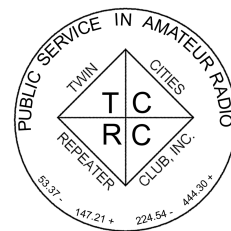


The Repeater



The Official Publication of the Twin Cities Repeater Club, Inc.

Mission Statement of the Twin Cities Repeater Club, as Adopted on September 20, 1993

The purpose of the TCRC is to facilitate the local communication needs of its members by owning and operating a state of the art wide area coverage two meter repeater system. The club will further involve itself in secondary activities intended to (1) promote the exchange of ideas and information related to amateur radio, (2) strengthen the fellowship and camaraderie among the members, (3) serve the local amateur radio community, and (4) increase local public safety.

ARRL Field Day 2010 is Almost Here!

by Tanna Morse, KCØURO

The ARRL sponsored Field Day contest is the most popular amateur radio on-the-air event held in the United States and Canada. For some of you, this contest inspires fond memories of Field Day contests past; perhaps as one of the first times you ever exercised your ham radio skills! For others this is a brand new experience, piquing your curiosity about antenna and radio set-ups and perhaps garnering ideas for your ham shack at home.

Do you know it is estimated there are approximately 6 million amateur radio operators worldwide? We know that ham radio operators are famous for disaster relief assistance, including during the 9/11/2001 World Trade Center disaster, Hurricane Katrina, and the earthquake in Haiti this past January. As a hobby, it is simply fun to talk on the road during drive time, communicate with other hams in distant states or countries (collecting cool QSL cards in the process), experiment with Amateur TV (ATV) or Slow-Scan TV (SSTV), or coordinate a moon bounce, to name just a few of the myriad of activities one can do as a ham operator. Each ARRL-sponsored Field Day contest is a terrific opportunity to dabble in all of the stimulating aspects of amateur radio with your fellow club members, family and friends, and also to meet new people and make new friends.

The weekend of June 26-27, 2010 is your chance to commingle with TCRC members in the great outdoors, setting up emergency operations stations, erecting antennas, and contacting ham operators of every age and expertise around the North American continent and Hawaiian islands. Currently, it is the TCRC plan to set up three stations, the G.O.T.A. (Get On The Air) station for your family and friends who would like to experiment with amateur radio operation, our voice station (station 2) and our CW station (station 1). We're also hoping for a VHF/UHF/Satellite station. Everyone is welcome, and is encouraged to participate, whether you stay for a day or for an hour, to operate a shift on the radio, assist with set-up and tear-down of the site or just to visit during the family picnic that is always a part of this weekend event on Saturday evening. Don't forget the TCRC quarterly membership meeting at 7:00PM Saturday at the Field Day site. Your experience and time are essential to the success of our club's Field Day weekend. Join your fellow TCRC hams as we set up stations and antennas on Saturday morning, June 26th and stay or return to operate a shift at one or more of the stations. Our CW station is in particular need of operators as there aren't too many hams in our group that are comfortable with Morse code. Your help with setup on Saturday June 26th and teardown on Sunday, June 27th is crucial; we need 10 or 12 people to help pull up the antenna tower Saturday morning and (gently) take it down on Sunday afternoon at 1:00 PM when this contest ends.

Our final planning meeting for this Field Day contest is scheduled for Tuesday, June 15, at 7:30PM at the Caribou Coffee on Cliff Rd. and Hwy. 13 in Burnsville. This is where we normally meet for coffee on Tuesday after the net. Come on down, we're expecting you!

Spring, 2010
Volume 33, Number 1

Inside this issue

Mission Statement.....	1
ARRL Field Day 2010 is Almost Here... 1	
Map to Get You to the Field Day Site....	2
Colonial Hills Water Tank Painting	2
TCRC Sponsors Skywarn Classes.....	3
President's Letter.....	3
Welcome, New Members	3
A New Yorker's Dream Station.....	4
Other Ham Radio Activities	4
Membership Application	6

**Please Join Us
for Field Day 2010
1 PM Sat. 06/26 to
1 PM Sun. 06/27
and the
Quarterly
Membership
Meeting
06/26/10 7:00 PM at
the Field Day Site**

**Talk-In on the
147.21 Repeater**

**Abbreviated Net
Starts at 7:00 PM**

The Repeater is published quarterly by the Twin Cities Repeater Club, Inc. (the TCRC). The TCRC is organized as a nonprofit corporation in the State of Minnesota, with Articles of Incorporation and Bylaws. The club elects officers annually. These officers are simultaneously elected for a two-year term on the Board of Directors. The Repeater Trustee is a permanent member of the Board of Directors. Unlike the other Officers and Board Members, the Trustee may select a proxy to serve in his place at meetings of the Board. Membership in the TCRC is \$25 per year. The TCRC is an official ARRL affiliated society.

TCRC Officers:

President: Artie Johnson, WBØJMG
Vice President: Phil Lefever, KBØNES
Secretary: Tanna Morse, KCØURO
Treasurer: Craig Larsen, KCØDMF

Board Members:

All of the above Officers, plus...
Chris Buck, WØHO, Club Callsign Trustee
Appointed: Mark Neumann, KCØITP
Appointed: Dale Morgan, KCØTAP
Appointed: Jeff Goodnuff, WØKF
Appointed: Kevin Uhler, NØBEL

Technical Committee (a/k/a Tech Team):

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 Phil Lefever, KBØNES, **Vice Chair**
 Doug LaBore, NØBIS
 Rich Kenney, WØRFK
 John Toscano, WØJT
 Jeff Goodnuff, WØKF
 Art Johnson, WBØJMG

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Tanna Morse, KCØURO, **Chair**
 Open, **Vice-Chair**
 Kevin Uhler, NØBEL, **Site Setup Manager**
 Open, **FØOD Station Manager**

Information Services Committee:

Kevin Uhler, NØBEL, **Chair and Head Webmaster**
 Phil Lefever, KBØNES, **Assistant Webmaster**
 John Toscano, WØJT, **Assistant Webmaster**
 Jeff Goodnuff, WØKF, **Web Calendar Maintainer**

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Craig Larsen, KCØDMF, **Chair**
 Tanna Morse, KCØURO, **member**
 Dave Ventura, KEØNA, **member**

Newsletter Committee:

John Toscano, WØJT, **Editor**

Net Control Operators:

Chair: Larry Jenkins, KØLEJ
 1st Tuesday: Jeff Goodnuff, WØKF
 2nd Tuesday: Mark Newman, KCØITP
 3rd Tuesday: *Open*
 4th Tuesday: Phil Lefever, KBØNES
 5th Tuesday: John Toscano, WØJT

Metro Skywarn Liaison:

Jeff Goodnuff, WØKF

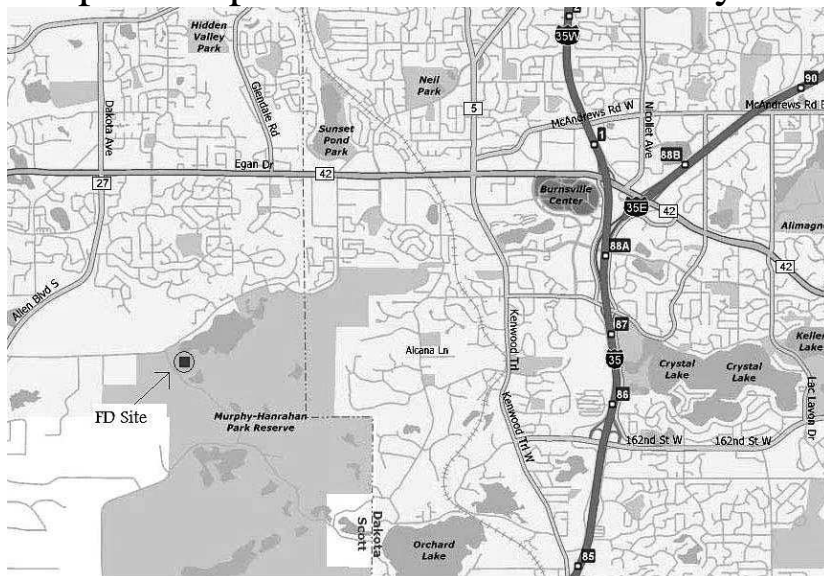
Minnesota Repeater Council Liaison:

Jeff Goodnuff, WØKF

Emergency Services Coordinator:

Janet Skovran, KBØZFB

Map to Help You Get to the Field Day Site



**Colonial Hills Water Tank Painting Project
 by Phil Lefever, KBØNES**

Over the past two months the City of Burnsville has been having our main repeater site water tank painted. Typically this is a project they undertake every 8 to 10 years. This time around it was easier as they didn't have to blast the tank to bare metal for preparation. The old paint was in decent shape so they were able to simply pressure wash and paint. There were some structural and mechanical improvements made as well.

One issue that made this project differ from prior painting projects was that the workers were wearing RF exposure monitoring alarms. These devices will alert the worker if they get into a strong RF field near a transmitting antenna over an operating range of several MHz to several tens of GHz. The greatest dangers when up on the tank are from the highly directional cell phone panel antennas which operate near 100% duty in the low microwave range. These have pretty high power density and it wouldn't be good to have your head in the beam path. Our antennas have an omnidirectional radiation pattern. They operate at low frequency; power and duty cycle so in comparison they are much safer. During past painting projects we never shut off our equipment. But this time even our low power-density signals would set off the worker's safety alarms.

So, for this project, we had to shut off the systems daily during the hours that the workers would be on the tank. The two main concerns we had with the shutdowns were the IronMan bicycle ride and any Skywarn alerts that may occur. We managed to work out the schedule with the contractors to allow us to be up for the IronMan and luckily we had no Skywarn alerts. Of course in the case of bad weather, the workers would most likely get off the tank, and with a few phone calls we could have likely resumed operation. All of the systems could be controlled remotely so the hassle was not so bad.

They wrapped up the project a few weeks ago and the tank once again looks shiny, white and clean. For the first time in my memory they have applied "Burnsville" decals to the tank(s) to give them their own distinctive look. With luck we won't have to go through this again for a number of years.

TCRC Sponsors Metro SkyWarn Classes Again This Year

On March 6 and May 22 this year the TCRC again sponsored Metro SkyWarn spotter training classes. Certified Metro SkyWarn severe weather spotters must re-certify every two years. Through the generosity of the Open Circle Church, the TCRC was able to train nearly 100 severe storm spotters in 2010. We had in excess of 30 persons attend the March 6 class and there were 66 at the May 22 class. The TCRC plans on repeating these training classes in 2011.

If you have any questions regarding Metro SkyWarn or the training classes, do not hesitate to contact Jeff, WØKF, at 952-927-0201.



Letter from the President

Greetings, fellow TCRC members! Welcome to the Field Day edition of your newsletter. I would like to discuss all sorts of topics, from the general state of ham radio, to operating practices, to the state of the Solar System, and many different topics in between.

First, thank you to the members at the last general membership meeting for voting me in for another year. Also, I received the Arnie Pung award for exceptional promotion of Amateur Radio. I feel like another president who received a Nobel Peace Prize recently. Anyway, I will have to live up to that award. (I have to PAY to have my name engraved on it, though).

The general state of Ham Radio seems to reflect the general state of the economy. Perhaps the hobby and discretionary income go hand in hand. Perhaps the state of the Sun spot count is taking away the fun of DX or QRP operation. Perhaps the internet and cell phones have taken away the mystique of radio. I still think about sitting in my darkened shack, with some arcane piece of technology glowing on the desk in front of me, cruising the Ham bands in search of a weak signal, a station in distress calling SOS, just some old friends chatting or calling CQ while not knowing where your signal will go.

What would make Ham Radio more interesting? I think that it starts with social interaction, despite the interaction of radios, antennas, and the ether. Radio is just a means of bringing people together. Or is it? Some might think radio is a way for shy, introverted techies to meet people without the discomfort of social cues and eye contact. This may be the reason for some people to get involved, but it soon evolves into a new social network of friends and acquaintances. Social networking is what it is all about. Before FaceBook, Twitter, and the Internet, there was Ham Radio, the ORIGINAL electronic social networking mode. Consider these CW shortcuts that came long before they were "invented" by Tweeters.

Wx = weather
 BCNU = be seeing you
 Es = and
 73 = best wishes (it's already plural, so don't use 73s)
 88 = love and kisses (same as above)
 OM = old man (any age male operator)
 YL = any age female operator
 XYL = ex young lady = wife
 TNX = thanks
 FER = for
 QSO = contact

So, what we as a ham radio club must do, is become a collection point and creator of activities and social contacts. Without the social connection, we are merely a group of people tending a bunch of machines. Rage against the machine. Get involved. Promote an event. Above all, have fun.

73 to all,
 Artie, WBØJMG
 President, TCRC



Welcome, New Members!

The following folks have joined the ranks of the Twin Cities Repeater Club since our last newsletter was published, or have re-joined after a period of elapsed membership. Please welcome them the next time you hear them on one of our repeaters! The club thanks them for their willingness to participate in the club.

Callsign	Name
KDØFZI	Eric Philipp
~	Javad Billoo
ABØOT	William Lord
KDØBUY	David Olson
KBØWR	Gerald Johnsted
KRØK	Larry Larson
KBØMON	Rob Hagerstrom
KDØITR	Andrew Johnson
KØJNE	Gary Williams
KDØJTJ	Joshua Carlyle
NØKFF	Denny Henchal
KDØJSL	Joshua Bovee
NØSBW	Greg Reis
KDØKYA	Michael Prezioso
KBØYMO	Mike Thompson
KC9HT	Rodney Freeborg
KBØJUJ	Steve Bennett
NØMQL	Kelvin Olson

A New Yorker Finds His Dream Station

by Craig Larsen, KCØDMF

Before moving to Riverside, Iowa, my friend Bill Hartley, K3JNZ, was living in a New York City apartment. Being an enthusiastic contester, he noted how his coverage was meager at best. However, something in him always caused him to be on the look out for a place that would make a great amateur radio station. He did this for years.

Then one day, he found a house for sale in an ad on ARRL.org. It was a house that was also a VHF contest station! And this contest station had a write-up in a VHF magazine (CQ VHF). The reason for this was that it included a 42-ft dish capable of doing EME on 144 MHz, 220 MHz, 432 MHz and 1296 MHz. Not too many houses had a feature like that! Bill's comment to me: "Who wouldn't want a place like this?" Others had looked at the place but they hesitated. Bill didn't hesitate and ended up scoring this dream station.

Of interest to me is all the things he's doing with this new station. He's had a couple open houses, inviting people over to learn more about amateur radio. I can certainly tell that Bill has a heart for this. He seated my friend's son Mark in front of a keyer and small TV screen.

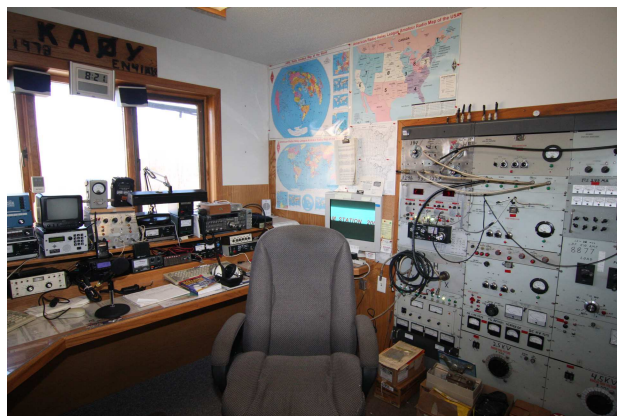
Each time Mark guessed the right dit and dah combination, a character would appear on the screen. Through this, Bill got Mark to find all of the letters and numbers in Morse code. Bill thought it was a treat seeing this. He had used the curiosity of youth to teach Morse code.

More than just teaching others about amateur radio; he sees his new radio station as an opportunity to learn things for himself. "The learning curve is incredible," Bill said. "I've learned so much already. My learning curve is exponential."

I think one of the things Bill would want to convey is to never give up on your dreams. Keep alert and be on your watch. Be ready to jump when that rare opportunity appears. Hesitating could cause you to miss out on your dream (or dream station).

More info about this incredible contest station is on the web at <http://www.ka0y.com>.

(Editor's note: Kenneth, KAØY, is the former owner and builder of this station, while Bill, K3JNZ is the present owner.)



Other Ham Radio Activities in the Twin Cities

by John P. Toscano, WØJT

In August 2009, the Northern Lights Radio Society (NLRS) put their commemorative club callsign, WØAUS, on the air for the first time. This callsign was formerly held by Bob Wesslund (SK), who was a founding member of the NLRS. The club wanted to rock the Upper Midwest in the ARRL August UHF contest, so they set up a station on the top of Buck Hill, in Burnsville, to give their signals the best chance of reaching distant locations. Since this contest allows the use of amateur frequencies of 222 MHz and higher only, line-of-

sight communication is easiest, but if you can't achieve that, then, at least, elevation above average terrain, and lack of nearby obstructions are helpful traits.



Since there is no ham shack on the top of Buck Hill (it is a ski resort, after all!), the club set up a tent with the "low band radios" (222 through 450 MHz), as shown here, and pulled up a few masts to support these antennas. The setup for the microwave bands (902 through 10368 MHz) was a bit unusual. Here we see Dave (NØKP)'s pickup truck, to which he has attached a section of antenna tower.



Way up there, are loop yagi antennas for 902, 1296, 2304, and 3456 MHz operation, along with parabolic dish antennae for the 5760 and 10368 MHz bands. In addition to a standard rotator to turn the array of antennae to any compass bearing, there is an elevation rotator up near the top, so that the dishes can be pointed precisely in not only the azimuth direction, but the elevation direction. This is critical for these extremely high

frequencies, where the dish antenna's gain is extremely high and the beam width is very tight.

So, what does the operator's position look like? Here's a shot of Dave, sitting in the "driver's seat" (in this case, both figuratively and literally) to operate the microwave station.



So how did they do? How about first place in the nation in the multi-operator category, and second place in the nation in all categories combined! Congratulations are definitely in order!

Another event involving extremely high frequencies, which got a bunch of NLRs folks to come out to play Ham Radio is the San Bernardino Microwave Society's annual 2 GHz and Up Contest. In the contest that was held on May 2, 2010, a group of us went up to the top of Buck Hill (same justification as for the August UHF contest), and set up loop antennas and dish antennas. In this case, however, we had a second group of club members working mobile in southern Minnesota. These (Rover) stations can be worked over and over again, as long as at least one end of the QSO is made from a new location that is at least 10 miles away.

Here's a shot of several of the stations on Buck Hill set up and waiting for the rovers to reach their next QSO spot...





Twin Cities Repeater Club, Inc.
P.O. Box 11534
St. Paul, MN 55111-0534

**Place
Stamp
Here**

Your Membership Dues Have Expired.
 Please Renew your Membership Today!

Join the Twin Cities Repeater Club!

P.O. Box 11534, St. Paul, MN 55111-0534

<http://www.tcrc.org>

Fill out this Membership Application Form, and mail it with your check for \$25.00 payable to the Twin Cities Repeater Club, to the mailing address listed above. You can also fill out this form electronically at the web address listed above, and either send us a check, or pay online using the PayPal system.

Name _____ Callsign _____ License Class _____

Address _____ City _____ State _____ Zip _____

Home Phone _____ Work Phone _____ Computer Phone _____

Ok to list your address in club publications? ___No ___Yes

Ok to list your phone in club publications? ___No ___Yes

Are you available for Emergency Service? ___No ___Yes

Are you a member of the ARRL? ___No ___Yes

Are you a member of Metro Skywarn? ___No ___Yes, spotter ID: _____

Are you a member of ARES? ___No ___Yes

Would you like an autodial speed dial number? ___No ___Yes, to phone # _____

Would you like a club ID badge? ___No ___Yes (free to new members, otherwise \$5.00)

What is your internet e-mail address, if any? ___None

Would you like an e-mail alias set up, so that mail sent to **yourcallsign@tcrc.org** gets redirected to the e-mail address you listed above? This can be handy on the air! ___No ___Yes

Do you want a copy of the TCRC Handbook? ___No ___Yes (add \$9.50, which includes postage)

Do you want a TCRC binder to hold it? ___No ___Yes (Add \$5.50 to the above)

This is ___New Application ___Renewal ___Other Change ___Callsign update, old call was _____