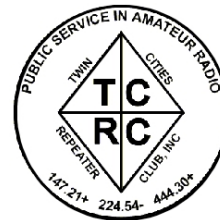


The Repeater



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.

President's Report

by Shanon Haralson, KCØEIG

The Burnsville Fire Muster will soon be upon us!

It all starts on September 6th, 2003, at 7:00 a.m. For the last seven years, the City of Burnsville has counted on the TCRC to help make their annual parade and festival go smoothly. We help out with traffic control, and direct people to where they need to be. Once again, we have agreed to help, and so we need volunteers to show up with their HTs and pitch in.

If you like fire trucks, this is the place to be. Trucks from fire departments all over the region, and some from outstate, show up to participate in the parade. Many antique units, and even some horse-drawn units will be there. If you come out and volunteer, the City will give you a free weekend pass to the entire event. It is a really fun and easy job. I have been doing it for the last three years now, and I really enjoy working with the Burnsville Fire Department and the City of Burnsville.

Besides the opportunity to get personally rewarded with a free pass to the Burnsville Fire Muster in return for doing a little talking on the repeater through your HT, it is also very important for the TCRC to give the City a hand when they ask us. The City provides us sites for our repeaters at no charge. We are one of the only clubs in the metro area that does not have to pay rent for repeater sites, and we try to give the City of Burnsville something back in return for the free rent.

Like last year, we need to give the City a list of the volunteers that will be there, *in advance of the event*. So it is important to let me know *now* if you can help out. Please contact me and I will get your name on the list. I hope to see many of the TCRC members out there with me!

Quarterly Membership Meeting

Also, please don't forget the upcoming Quarterly Membership Meeting! It is scheduled to take place on Tuesday, September 16th, in Burnsville City Hall. I hope to see you there.

Shanon Haralson, KCØEIG

TCRC President
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Remember!
TCRC Quarterly
Membership Meeting
Tuesday, September 16th
Burnsville City Hall 7:00 PM
Talk-in available during the TCRC
Info Exchange Net, 147.21 MHz
Please Join Us!

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: Shanon Haralson, KCØEIG
Vice President: Phil Lefever, KBØNES
Secretary: Jim Rice, NØOA
Treasurer: Pat Cain, KØPC

Board Members:

All of the above Officers, plus...
 Ivan Frantz, WØBU, **Repeater Trustee**
Ivan has currently appointed Mogens Dantoft, OZ9MD, as his proxy for Board Meetings.
 Ian Boje, KCØITQ, **Past Vice-President**
 Tim Cole, KØOLE, **Past Secretary**
 Kevin Uhler, NØBEL
 John Toscano, WØJT

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

Kevin Uhler, NØBEL, **Chair**
 Phil Lefever, KBØNES, **Vice Chair**
 Shanon Haralson, KCØEIG, **Tech Team Manager**
 Doug LaBore, NØBIS
 Mike Ferguson, NØDGG
 Rich Kenney, WØRFK
 Steve Filek, NØOWL
 Kelvin Olson, NØMQL
 John Toscano, WØJT
 John Phelps, KFØZM
 Tyler Williams, KØZDA
 Ed Walsh, KØCKK

Field Day Committee:

Phil Lefever, KBØNES, **Chair**
 Kevin Uhler, NØBEL, **Site Setup Manager**
 Monica Filek, KBØUWZ, **FØOD Station Manager**

Information Services Committee:

Kelvin Olson, NØMQL, **Chair and Head Webmaster**
 Ian Boje, KCØITQ, **Foot Webmaster**
 Phil Lefever, KBØNES, **Assistant Webmaster**
 John Toscano, WØJT, **Assistant WebSlave**

Membership Committee:

Mark Neuman, KCØITP, Co-Chair
(vacant), Co-Chair
 Steve Kickert, WØGXO, **Member Meeting Guest Speaker Coordinator**

Newsletter Committee:

John Toscano, WØJT, **Editor**

Net Control Operators:

Kevin Plummer, KBØUEU, **Chair**, 1st Tuesday
 Ian Boje, KCØITQ, 2nd Tuesday
 Thomas Gagnon, KBØDCO, 3rd Tuesday
 Phil Lefever, KBØNES, 4th Tuesday
 John Toscano, WØJT, 5th Tuesday

Metro Skywarn Liaison:

Jeff Goodnuff, WØKF

Minnesota Repeater Council Liaison:

Jeff Goodnuff, WØKF

Welcome, New Members!

The Twin Cities Repeater Club would like to welcome the following fine folks who have joined our organization since the last newsletter. Listen for them on the air, and give them a friendly TCRC Hello!

Callsign	Name	Residence
KCØPZN	John Laxson	Wayzata, MN
KCØQEJ	John Oden	Cottage Grove, MN



Volunteers (Still) Needed!

and...

Thanks to the New Volunteers!

Ok, face it. When did an all-volunteer organization like ours ever **NOT** need more volunteers? I think it was the same day that you looked in your wallet and said to yourself, "Something's not quite right. I have **too much** money in here." Right?

Anyway, I'm not one to beat a dead horse. Look over to the left of this article, and you will see the sidebar that lists the club's committees and their chairs. See any still marked "*(vacant)*" over there? Please consider doing something about it.

My heartfelt thanks go out to Mark Neuman, KCØITP, for his willingness to volunteer to take up the reins of the Membership Committee. And my deepest apologies for not listing him in the last newsletter! He actually volunteered awhile ago, and I somehow managed to not make note of it. Hey, I never said I'd be perfect in this Newsletter Editor's job that I volunteered for, only that I would do my best! So if you're holding back your offer to contribute some of your time to the club because you're afraid you might not do the job perfectly, all I can say is "welcome aboard, we'd be happy to have you join the rest of us imperfect folks!"

And while I'm passing out the kudos (no, not Kudo™ 's, some of you us don't need the extra calories!), I would be extremely remiss if I failed to point out that I got a record number of newsletter article submissions from club members this time, and I hardly had to write anything myself! I actually got to spend most of my effort **editing**. What a concept! Thank you, thank you, thank you! Please keep it up, over and over again! The more good stuff that people send me, the more good stuff we can send out to all of the members.

73 de WØJT, your Newsletter Editor

Parking Lot Mobile Radio Installation

by Janet (KBØZFB) and Jim (NØOA)

This article is for everyone that has struggled with mobile car radio "installation block". It is intended to reduce the fear of doing what is needed to get on the air from your car with the signal strength and clarity that comes from a solid mobile radio installation. In this article we will describe the process of installing a mobile radio in the parking lot in front of Caribou Coffee in Apple Valley, during a Tuesday night coffee gathering, armed with only a Leatherman Pocket Survival Tool (loaned to us by Mark, KCØITP), and a little ingenuity. Our victim – er, vehicle – is a small SUV.

The process started with selecting the right radio, with a little trip to Radio City and a little help from Josh (KBØVUD). In this case, the radio is a dual band, dual receive ICOM 2720. This radio not only has the ability to detach the faceplate from main unit, but almost as importantly, it has the ability to fit the main unit nicely under the front passenger seat. With a little Velcro, we were able to connect the faceplate onto the dash, where it's easy to access, and is easily seen by the driver. The only tool we needed at this point was the Leatherman to hand craft a little microphone hook from a short piece of coat hanger, hooked onto the dash.

Of course, getting the antenna connected to the radio is pretty important. We had limited tools (and desire) to drill holes or make any kind of permanent mounting on the roof. Nor did we want coax draped across the inside of the car. So, we started by clamping a simple antenna mount to the roof rack. This style of mount was easy to install with the Leatherman, and is far more stable than a magnetic mount would be. By putting the mount on the luggage rack near the intersection of the front and back doors on the passenger side, the coax cable could be routed into the passenger space with minimal wear on the cable. In order to limit the visibility of the cable as it traversed the path to the space under the front passenger space, we routed it under the plastic molding of the door pillar.

Antenna mount, antenna, coax and radio installed – all we had to do was power up the radio. Of course this meant trying to find a route from under the front seat to the battery. After a little poking and prodding with a length of coat hanger wire, we were able to get the wire routed. The path we took from the battery was along the engine compartment wall, along the hood hinge, behind the fender, through the passenger door hinge, and beneath the interior molding under the dash. From here we went under the molding at the base of the door and under the seat. Voilá! No holes, no extra tools beyond a coat hanger.

Now came the tricky part. We were stuck. We had the wire routed from under the seat to the battery. But, we had to hook it up. We needed to crimp some wire ends onto the power lines and disconnect the battery terminals to make the connection. We were missing the wire ends and the tools to work on the battery. It was Phil (KBØNES) who pointed out the auto parts store in Apple Valley. So, we jumped in our cars and popped over to the store, where we picked up some wire ends and a wrench for the battery terminals. We also picked up some wire ties for good measure. In the parking lot of the auto parts store – a couple of blocks from Caribou Coffee, and about an hour into

the project, we powered up the radio and made the first QSO with our new installation.

So with minimal tools, a coat hanger and the help of a few fellow HAMS, a new mobile radio installation is on the road and ready to use the fantastic repeaters of the TCRC.

Remembering the GOTA Station

by Pat (KCØJAF)

Hello fellow TCRC members. My name is Patrick Rice. I had the chance to run the GOTA station at the TCRC 2003 Field Day. Starting out with the basics: the Acronym GOTA stands for **Get On The Air**. GOTA is special station that does not count in the station count. For example, we had a 20m station, a CW station, GOTA, and VHF/UHF (another special station), and so our Field Day station designation was 2A (two transmitters – off the power grid).

My setup was a Yaesu FT-897, a power supply, a Heil Traveler Headset, and a straight key, all hooked up to Hustler trap vertical antennae set up with 10 radials. I had two objectives for the whole weekend. (1) Get new or inactive HAMS on the air and (2) make one hundred or more contacts. For those of you who work Field Day often, get back on your chair and stop laughing. It was hard. But we'll cover why later on. On to the main event...

Go time for Field Day was 13:00 on Saturday, and it ran until 13:00 on Sunday. So in short, I had 24 hours to crank out 100 contacts. I thought back to my previous Field Day experiences, and figured that I could do that quite easily. I started out, and got... nothing, for a whole 4 hours... nothing. I started to think that this may not be as easy as I thought it would be. Then some younger non-hams started showing up, and even some hams who were maybe techs and this was their first time to get on the air on HF. I gave a turn to everyone who came and wanted a turn. It took a little arm twisting for a few. But by midnight on Saturday night, I had 34 contacts.

The day had been awesome! I got to know about 20 people I had never meet before. I also had the chance to watch an awesome storm. Yes, a storm. A little before dusk, a nice-sized storm rolled through the Field Day site. We had to disconnect all the antennas and wait out the storm. For about 20 minutes, a few of us just hung out in the camper and talked. The storm passed, we hooked the antennas back up, and things got back underway.

Sunday came, and yes, I did sleep. By morning, I still only had 34 contacts. But, I knew we could still make 100... There were still 7 hours left. I sat down and started to call CQ, and 10 or 20 people answered my call! We worked them all, and called CQ some more. And another 10 or 20 got into our log. After only 30 or 40 minutes, we had all hundred, and I had met my second goal. After that, it was pure fun. I loved managing the GOTA station. As a whole, I think that the TCRC Field Day was a success. We all had a good time (I hope), we watched movies, we got to see a great storm, we partied, we just plain had fun. Here's to next year, and many more Field Days to come.

Learning CW by Jim (NØOA)

There are numerous reasons to pick up a little skill with the Morse code. As the band conditions start their steady decline to the cellar past the peak of the sunspot cycle, digital modes like CW can make it through the noise even when we can't hear a phone QSO in the static. You might be interested in doing a little kit building. There is very little that can compare to the excitement of making a DX contact with a radio that you built from a \$35 kit and placed in a Altoids tin. Maybe you want to jump into Microwaves. Again, those long haul contacts are so much easier to make with CW when you are dealing with the dicey QSOs that are bounced off of buildings, airplanes, or even rain clouds. Heck, you may just want to take on a little CW skill in order to pass the Element One FCC examination for your General Class Amateur Radio License.

If you are ready to take on the challenge, the first thing to know is that there are no short cuts. Learning the Morse code takes a little time and regular practice. Different people learn at different rates and through different methods. Everyone that has learned the code has found a different place and time to practice. Personally, I used tapes and my commute time in the car to get the basics down. You might be a morning person that can get up early and practice over your cereal. You might like to spend time at your computer keyboard in the evening before you head to bed. Regardless of the time you pick – it's important to choose a regular time to spend practicing. A regular schedule will get you to your goal of learning the code faster than anything else you can do.

The next decision is to pick a method to use to learn the code. Believe it or not, there are many different ways to learn the code. The ARRL sells a set of code practice tapes (<http://www.arrl.org/catalog/?item=8322>) that you can use to pick up the code. A tried and true method, you can spend time listening to the tapes and gain an appreciation for the musical quality of the code as you work your way through the alphabet, punctuation and procedural signs that you will need to learn, in order to pass your 5 WPM examination and/or to make a QSO.

Another method for learning the code is computer-based training. HAM University has a great game that is fun to play as you develop skill with the code. You can pick up Ham University from the following web site: <http://www.hamuniversity.com/>.

There are also quite a few web sites dedicated to helping you learn the code. The best practice site I've discovered so far is the AA9PW site (<http://www.aa9pw.com>). I have also found the MFJ Code Tutor (a pocket-sized device) to be a handy tool to drill on random QSOs and call signs when you are trying to warm up for a contest or practice for your exam element. You can get more information on the MFJ Code Tutor at: <http://www.mfjenterprises.com/products.php?prodid=MFJ-418>

My favorite learning method for the code was developed by Dr. Wheeler, and is called Code Quick (<http://www.cq2k.com>). Using the Code Quick method, the student learns "sound a likes" that are reminiscent of the sound the CW character makes when you hear it. For example, the letter 'D' (Dah-di-dit) is learned as "Dog did it" and the letter 'M' (Da-Dah) is learned as "Ma Ma". Using the language portion of your brain you quickly learn mnemonics for each of the characters, numbers, and pro-signs. I personally like this method because it defeats that filter in your brain that keeps you from hearing all the background noise around you when you are concentrating on talking with someone or reading this article. This is the same filter that desperately tried to filter out all those dits and dashes and keeps you from getting to your goal. Code Quick will quickly get you through the 5 WPM basic examination. I personally still like the ARRL tapes for speed practice. But Code Quick, in my opinion, gets you to the point of being able to work on your speed via the shortest path.

Of course, gaining any level of proficiency is far harder than passing the 5 WPM Element One examination. The best way to do this is with your radio. Listen and copy the ARRL code practice sessions. Try setting up a

schedule with someone that is willing to help you learn. If you don't have someone that you know that can help you pick up the code, you can join the FISTS (Morse code preservation society) and apply for a "code buddy". A code buddy is an experienced (well at least a day or two more practice than you have) CW operator with whom you can practice with regularly. You can also hop onto the Novice portion of the bands and find a Ham or two that is willing to rag chew at your speed. (In the CW world, generally speaking, the higher the frequency you use in the band, the higher speed CW you will find when you listen along. So, the Novice portion of the bands is a good place to get your feet wet.)

If your goal is to pass the 5 WPM Element One examination, then you should know that not all Morse code examination sessions are the same. Some VE groups have head phones for each participant. Others send the test code using speakers in the room. If you are one of those folks that have trouble taking tests, or who has a hearing loss that makes it difficult to hear certain character combinations, there are VE sessions that offer alternate testing methods. Every month, the Apple Valley VE Team allows no more than one Ham to take a version of the ARRL code examination in which you the testee *sends* the code to three examiners to demonstrate his or her code proficiency. Contact your local VE team to explore various options before you decide that the code test impossible for you to pass. They are there to help you.

Getting your first key can be a big choice. Learning to use a code key is a lot like learning to drive a car or use a keyboard on your computer. Choosing the right key for the way you want to operate can have a huge impact on how well you enjoy operating CW. There are several very popular choices. But in general, there are nearly as many different key designs as there are Hams.

Probably, the most common kind of key is the straight key. With the straight key, you open and close a contact, and your radio transmits a tone while the contact is closed. This is probably the kind of key that most people think of first when they think about learning the code. While it is the easiest to learn how to use, it is also very hard to build up enough stamina in your wrist to hold a long rag chew QSO.

Another very common type of Morse code key is the Iambic key. An Iambic key has two (typically) vertical paddles that you press alternately with your thumb and forefinger, closing one or the other of two contacts. The Iambic key is used with a "code generator". The code generator sends a string of dits when you close the contact with one key and a series of dahs when you press the other. (Naturally, if you only touch one of the paddles briefly enough, your "string" may be only one dit or dah in length.) It is a little harder to learn how to use the Iambic key. But once you master it, the easier left-to-right movement, combined with the reduced movement of your hand due to the support of the code generator makes long QSOs or contest marathons far easier to deal with.

Operating CW is a lot of fun, and it is a family-friendly way to operate if your radio is not out of earshot of the rest of your household companions. I hope you give it a try, and find it as enjoyable an operating mode as I have.

Editor's Note:

Although Jim didn't admit it in any of the wonderful articles he submitted for this newsletter (thanks again!), he was brave enough to volunteer as HF Station #1 Manager at this year's TCRC Field Day gathering. His station ran CW for the entire contest, and Jim spent many of those 24 hours in the "driver's seat", working the key and bringing up our total score, while getting a fantastic amount of practice at it. He's a braver Ham than me to take on that challenge! (Yeah, I obviously must have passed my Morse Code test to have earned my Extra Class license, but as Jim correctly pointed out, the key to building skill at CW is practice, something that I sorely lack. I really look forward to the day when my hectic schedule settles down enough that I can become much more proficient at CW. There truly are times when almost nothing else will get the message through the noise! -- WØJT

Jamboree on the Air

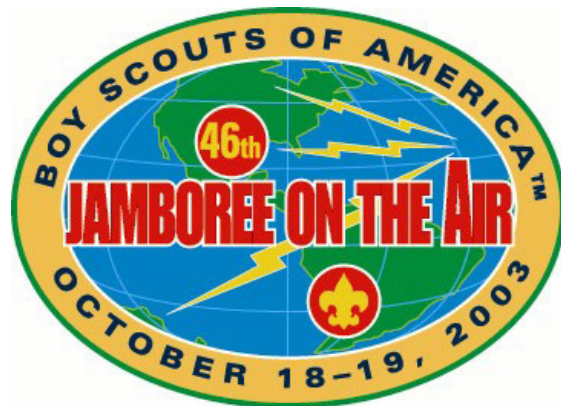
by Jim (NØOA)

"Jamboree on the Air" (or JOTA) is an international event though which Boy and Girl Scouts alike spend time exploring Amateur Radio. Far from a contest, JOTA is a weekend opportunity for HAMS to share their love of the Hobby with youth, who will be the next generation of operators.

JOTA is held the third weekend in October of each year. JOTA takes place starting Saturday at 0001 hours local time to Sunday, 2359 hours local time, though some activity continues over from Friday to Monday to take advantage of long distance (DX) time differences.

Local amateurs can participate by working with local scouting units to help them get on the air. Alternately, they can help out by taking some time to lend an "air smile" and give a friendly greeting to a young person that you hear on the air.

Aside from local repeater activity in the area, there are standard calling frequencies for JOTA participation. These frequencies are:



Band	SSB (Phone)	CW (Morse code)
80 meters	3.740 / 3.940 MHz	3.590 MHz
40 meters	7.270 MHz	7.030 MHz
20 meters	14.290 MHz	14.065 MHz
17 meters	18.140 MHz	18.080 MHz
15 meters	21.360 MHz	21.140 MHz
12 meters	24.960 MHz	24.910 MHz
10 meters	28.390 MHz	28.190 MHz

A SIDE NOTE:

For several years, the Jamboree On The Air (JOTA) CW frequency on 20 meters, 14.070 has conflicted with, and interfered with, the international PSK-31 "band", which is also on 14.070. For various reasons, the Boy Scouts of America and World of Scouting Movement have been unable to officially change this frequency in their publications and websites.

After consultation and agreement with numerous Scout-Hams from around the world, it is the consensus that the world-wide Scouting organizations change the frequency themselves to 14.065. This information is being circulated widely through email groups and websites. So, please change any notes you might have on the established JOTA frequencies.

Traveling with Ham Radio

by Mark, KCØITP

I recently took a vacation trip to Glacier National Park (/7) and the Canadian Rockies (/VE6), and Ham radio came along for the ride. Here are some thoughts and observations I made during the trip.

The 2M National Simplex (146.520) is alive, fun, and interesting, more than HF on the road, which I will address later. Along my route I would call "CQ 2 meters KCØITP" once in a while, and about 50% of the time I got a response. Most responders were other mobiles, but there were a few base stations willing to have a chat. I discovered that you will not know where, or which direction, the other mobile stations will be moving. Thus, it turned out to be a good idea to switch to low power for the CQ, then I had some headroom to increase power as we separated; this extended several conversations I had with other mobile stations. The best instance of a National Simplex contact came in

Glacier National Park, where, while passing a parking lot I noticed a truck with a ham license plate. The other driver noticed my ATAS-100 antenna on the roof; I do not have a ham plate (yet), and he leaned out his window to yell "CQ CQ". I turned the volume up on my radio just in time to hear him also call out on 146.520. He was with a group of seven cars using another 2M simplex frequency to stay in touch, and was able to give me some information on the road and smoke conditions in the direction I was heading. During the conversation I saw three other cars with ham plates pass by, and told the other party "I think I see some of his friends coming up the road." He responded that his group was all with him, when someone in that third group (that had just passed) came on the air to say hi, whereupon we had a 3-way contact for a while. What a blast!! I did not do much repeater work during this trip, as I did not want to bother to re-program my radio for tone etc. while driving.

HF on the road was somewhat disappointing this trip as conditions were against me, but that does not mean I did not make any contacts. As mentioned above, I use an ATAS-100 screwdriver as my HF mobile antenna. This, along with my Yaesu

Traveling with Ham Radio , continued

FT-857, provides me with the ability to change bands (6M through 40M) while on the move. While on the move, however, I had to contend with road noise, ignition noise, power line noise, and tough band conditions, which limited the number of mobile contacts. One thing I did, in the interest of domestic tranquility, was use a headset (one sided) while driving so Jean (KCØIWY) could read without hearing the squeaks and squawks as I tuned through the bands on SSB. While on the road, the noise level ran about S8 to S9 on the lower bands. It was less on the higher bands, but propagation did not seem to be there on the higher bands (17M – 10M), well maybe later (like 8 years from now.) This high noise level drowned out most stations, and I was getting better reports than I could honestly give. But while parked, things were much quieter, except for the one campground in Banff park where there was S9+ noise everywhere. After watching the BPL video from the ARRL, I concluded that this is what it sounded like. If BPL was what I was experiencing in the Banff campground, then BPL would be an unmitigated disaster for Amateur radio if it were implemented, since the noise was loud, harsh, and everywhere. Before the trip, I had set up some schedules with some hams back home, and while I could hear them, they could not hear me. I did have the parts to put up a full sized dipole, but after sightseeing for the entire day and getting back to the campsite at 8:30PM, I did not have the time or inclination to put it up. If I had, I am certain that I could have made the scheduled contacts. This did not stop me from making contacts with other stations while /VE6, which provided me something to do after sunset. In all, I think that having Amateur radio along on this road trip made some of the slow times go by faster and enhanced the experience, and I plan to have it along on future trips.

Minnesota to Winnipeg on 10 GHz!

by Phil, KBØNES

On Tuesday, July 29th, I read an email from Jon, WØZQ, who said that he was going out to set up his 10 GHz portable station at the "usual" location in Burnsville, overlooking Interstate 35W. His goal was to attempt to make a contact with Barry, VE4MA up in Winnipeg! The local Northern Lights Radio Society (NLRs) club has fostered a lot of local activity on 10 GHz as of late, and many of the operators have been experimenting with "rain scatter" off of nearby thunderstorms!

Since I was on my way to Caribou Coffee anyhow, I thought I might stop by their site and see how things were going. I wasn't totally sure of where they set up, so when I got close to the area, I put out a call on 146.46 simplex, the usual gathering frequency for the local microwave guys. Jon gave me directions, and when I pulled up, he was already set up. Gary, WBØLJC, was finishing his setup as well. As I walked up, I realized that Jon was on the cell phone with Barry discussing the fact that they had just been successful in completing a 10 GHz contact! I took a listen to Jon's radio, and easily copied Barry's call, VE4MA, in Morse code. There was no tone, just the sound of gated white noise, due to the Doppler shift, since moving hail and raindrops were reflecting the signal. It sounded somewhat similar to the sound of CW on aurora propagation. The most striking part was that Barry was

moving the S Meter on the radio. Jon said that at the time of the contact, Barry was 5x9! I thought this was supposed to be "weak signal" work. When I asked where the storm they were using was located, I was told it was in Northern Minnesota near Thief River Falls. Simply amazing!

After Jon's contact was in the log, he helped try to coordinate attempts at contacts for others in the Twin Cities metro area, including Gary (WBØLJC), who was also at the Burnsville location. Unfortunately, while Gary could hear Barry's signal, the storm had dissipated enough that they couldn't get a valid 2-way contact. It will have to wait for another time and another storm. Also heard locally was another local Ham named Gary, WØGHZ, who was calling Barry from his home in Moundsview. His signal was an interesting mix of a direct signal and a reflection from the storm as well.

The successful contact was from Maidenhead grid square **EN34is**, here in Burnsville, MN, to grid **EN19lu**, in Winnipeg, Manitoba. This calculates out to around 635 kilometers (or nearly 400 miles, for the Metrically-challenged), which was a distant enough contact to earn a new record for 2nd place in the nation for a rain scatter contact at that time. It was also certainly a Minnesota state record! The local guys are really starting to push the envelope on 10GHz and some are starting to move to even higher bands, like 24 GHz.

Just for the record, Jon's portable setup was running about 2 watts of 10 GHz RF into a 19" DSS dish. Barry has a tower-mounted 19" dish as well, but he has about 40 watts of power going up the pipe. Big power for the microwave Ham bands! By the way, Barry also holds the bragging rights for being one half of the world's first 24GHz EME contact with AI, W5LUA in Texas.

The NLRs guys deserve hearty congratulations for all the recent achievements on 10GHz! The ARRL-sponsored "10GHz And Up Cumulative Contest" runs on two weekends in August and September. Many of the gang went up to Northern Minnesota to try paths across Lake Superior on the first weekend. The results of the first weekend greatly surpass last year's totals for both weekends! It looks like the NLRs group is going to put in a great showing in the contest this year, to be sure. Not bad from the flat "black hole" of radio land that all the local contesters complain about.

For those that would like to learn more about microwave (and VHF/UHF) activity in the area, check out www.nlrs.org for the Northern Lights Radio Society web pages.

Field Day 2003, Station #2 Report

by John P. Toscano (WØJT)

Pat (KCØJAF) wasn't the only one who had a "new" experience of Field Day this year (see page 3, "Remembering the GOTA Station"). For as long as I have participated in Field Day prior to this year, namely the years 1998 – 2002, I was the VHF/UHF/Satellite station manager. In most of those years, I brought out nearly every piece of ham gear that I owned, struggled to get it all installed, operated until I was ready to pass out, passed out (well, caught a few hours of sleep), operated some more, tore it all down, dragged it all home, and took a week to recover from it all. (Not quite, but heck, I'm writing this article, I get to exaggerate a little bit!). Last year, I threatened to not run the station, but gave in at the last minute and did it anyway, albeit without as complex a station as in some prior years. But as each year passes, I have become more and more convinced that someone younger and healthier than me should take over the VHF & Up station, and that I should get my opportunity to work Field Day on the HF bands. So, once again this year, I promised NOT to run the VHF & above station, only this year I kept my promise. (In the process, I ended up promising also to run HF Station #2 instead. But that was not a problem, I've always wanted to work HF during Field Day, and this solution "guaranteed" me the opportunity to do so!

So this year was very different for me. I didn't make a single Field Day contact on 50 MHz or above, and I was able to leave most of my gear at home. I basically brought out my Yaesu FT-847 radio, an Astron RS-30 power supply, an MFJ-969 antenna tuner, a Heil Goldline microphone, a couple of sets of headphones, and not much else in the way of operating gear. Station #2 ran mostly 20 Meter SSB, although we had a beam for 10, 15, and 20 Meters, and a trapped dipole that added 40 meters to our options. And like Patrick, I had an awesome time.

It was great to call CQ and get a pileup of stations all wanting to work WØBU! I made literally hundreds of contacts, many more than I usually make up at the VHF station, and I got lots of help from other folks who took turns with me at logging, operating, partying, and sleeping!

For those of you who didn't come out this year, shame on you! You missed a great time. Josh (KBØVUD) and Richard (KCØNPA) brought out a professional Surround-Sound audio setup and a video projector. They rigged up a large screen out of a home-built wooden frame and someone's white bedsheets, and we had a "drive-in movie theater" but without the cars! Folks who weren't operating or logging at one of the radio stations sat around the campfire watching DVD movies 'till late at night. How's that for "roughing it"? Even though I tend to be a hard-core radio operator during Field Day, even I took a break from the radio and watched some of the movie. My only complaint about the movies was that late at night, while I was mentally focused on working the radio, I heard a bunch of booming noises that sounded like a new thunderstorm rolling into the area! I ran outside to see if it was going to be necessary to unplug all the coax again, and I finally figured out that the noise was from movie explosions played in high fidelity through the Surround Sound system. So I calmed down and went back to the radio. ©

And, of course, Monica (KBØUWZ) and Becky (KBØWZU) once again did a wonderful job operating the FØOD station – no site

visitor had any excuse to go hungry, night or day. You all shoulda' been there, even if contest-style radio operating isn't your "cup of tea"! Oh well, you can redeem yourselves by coming out to Field Day next year! See you then.

TCRC Field Day 2003 – Fun on the Farm

by Phil, KBØNES

As always, the 4th full weekend in June, this year brought us yet another excellent ARRL sponsored Field Day event. The TCRC participated in the event at our normal location just, South of Rosemont. While participation was a bit below other years, everyone had a great time. The weather even cooperated fairly well; I guess we can consider it a blessing that we had only a single Skywarn activation during the event!

This year we did do things a bit differently. Normally we run three full-time HF stations, but this year we scaled back down to two. This greatly simplified setup and logistics, and required fewer people to keep everything running smoothly. In total, we had about 50 people participate in one form or another. Of course, the loss of the additional station will impact our total score when compared to the scores of years past.

As for the radio part of the event, conditions were pretty lackluster. As we start our slide into the less active part of the solar cycle, this is to be expected. We also had a serious lack of sporadic "E" conditions, which normally peak in June. Lacking good propagation on the higher HF bands really hurt our total scores, and resulted in very few 6 Meter contacts. This is the first year where we didn't work any distant stations on 6 Meters!

Due to the aforementioned reasons, our total number of contacts was down to about 1150 this year. We did do far better at earning valuable bonus points this year as an attempt to make up for the missing station though! This will place our final score at just over 4000 points. All in all, considering the variables, this wasn't bad at all. In fact, we have had years when we scored even lower, even though we ran the 3rd station!

The social aspects of the event were as successful as always! There was a lot of great food and excellent company to share it with. The crowd around the bonfire was even treated to watching the movie "Monsters, Inc." on a big screen projection TV complete with 5.1-Surround Sound! It was a lot like a drive-in movie of old, but with *much* better sound. Outdoors, there are no room reflections to alter your perception, so the surround effects were impressive! We always come up with something new at every TCRC Field Day. Stay tuned to see how we top it next year.

I'd like to say thanks to everyone that became a part of our effort. No matter how much or how little you were involved, Field Day wouldn't be what it is unless people came out and joined in! We all had a chance to have some fun and to gain the experience of setting up and operating under temporary conditions. I hope it was an enjoyable learning experience for everyone that participated. I also hope you will keep the 4th weekend of June in 2005 open, so you can come out and join in the fun with the TCRC next year.



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- Are you a member of the ARRL? ___ No ___ Yes
- Are you a member of Metro Skywarn? ___ No ___ Yes, spotter ID: _____
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- 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)
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