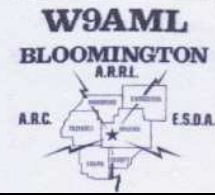


CENTRAL ILLINOIS RADIO CLUB

Short CIRCuits



July 2007

From the President

Repeater Problem

At the last club meeting we formed a repeater study group. Norm will include the notes I wrote from our last meeting. Basically we recommend making one last attempt to fix the current repeater while simultaneously adding lighting protection to the feedline, improving water protection for the antenna power divider and cleaning / realigning the cavities. Suffice to say a new commercial repeater will be expensive.

Field Day – May Planning Session

We had a great Field Day – Our score was just short of 3,000 points, well ahead of last years. I think the difference was having people operate all through the night and staying with the contest until the very end. Great job everyone who participated! It was really fun, even with the rain. Special thanks to Mike Sallee for coordinating our efforts.

June Meeting –

We did a post mortem on Field Day. First lesson was do NOT lose the post mortem – since we could not locate last year's. I am sure we made some of the same mistakes two years running!

Ham Networking –

No – I am not talking about our circle of friends and acquaintances, but making computers talk to each other. This year we again networked our Field Day logging software – what a difference in the operation, being able to see the current overall score, who was making the contacts and what a difference in final scoring. Basically I

was able to push a button and send in our entry.

This week I networked the computers in our house and can now share our main printer with the other systems. That may not be a big deal, but the real payoff was being able to log contacts from my upstairs radios to the main database in the basement. Logic, which I demonstrated at an earlier club meeting, has the ability to operate in client / server mode and it makes the operation of multiple radios as easy as our Field Day operation. It is a nifty proposition. Too bad I waited for years to retire to get the half-day it took to figure it out.

July meeting –

The long delayed Connector Night – we are going to demonstrate our techniques for PL259s, N connectors, Anderson Powerpoles, Molex, BNC and whatever anyone brings to the meeting. Jim Shaffer and I will bring soldering irons / guns and everyone else is welcome to do so also. Anyone volunteering to show us how to do DINs? They are my personal frustration; I invariably soften the plastic housing enough to misalign the pins. It has gotten to the point where I order expensive cables terminated on one end with a DIN and unterminated on the other end.

August Meeting –

Dr. Don Jones will present his collection of early microphones and give a little bit of the history of early AM radio in the area. He comes highly recommended and I am looking forward seeing his presentation.

Take care everyone. See you Wednesday, July 25 at 7:00pm in the

Red Cross on Route 9 East, across from the Fire station.

Thanks –

Keith
AC9S

Central Illinois Radio Club

P.O. Box 993
Bloomington, IL 61702-0993

<http://www.qsl.net/w9aml/>

President: Keith Hanson AC9S
(309) 378-4416

Vice President: Mike Sallee,
KC9FWL

Secretary: Chuck Kostelc N9RZV
(815)-842-4058

Treasurer: Norm Huber N9ZKS
(309) 378-4674

Newsletter Editor: Norman Huber,
n9zks@earthlink.net
(309)-378-4674

The CIRC is a not-for-profit ARRL special service club whose purpose is to advance the service of Amateur Radio. Located in Central Illinois, CIRC and its members welcome all to use the 146.94 repeater and to attend club meetings.

Submissions for the newsletter must be received by the 10th of the month and may be snail or e-mailed to the editor at:

Norm Huber
19266 US Highway 150
Bloomington, IL 61704-5855

e-mail n9zks@earthlink.net

Permission is granted to Amateur Radio-related organizations to reproduce contents of Short CIRCuits provided full credit is given.

CIRC June 2007 Meeting Minutes

June 6/27/2007 meeting, & followup to Field Day
Start at 7:05pm

Club treasurer Norm N9ZKS is off scouting

The \$100 collected for Dayton booth was used for Field Day breakfast 6/23 & 24

Gary AB9M motioned to defer treasurers report, Rick WD9HRU 2nd, carried

Mark Snyder AB9MP now has club R7 antenna & aluminum telescoping base.

Keith AC9S reviewed last month's minutes.

Gary AB9M motioned to accept minutes, Mike KC9FWL 2nd, carried

Old Business:

Loaner Repeater from Rich N9YAY needs to get returned, so we have to address issues.

Discussion ensued to review poly-phaser lightning protection, determine root cause(s), get quote from Rich to purchase current equipment.

Subcommittee formed to research facts & costs for presenting progress at next meeting -Gary AB9M, Rick WD9HRU, Chuck N9RZV, Jim WB9UWA, Keith AC9S.

Gary AB9M brought up something about packet node request from Joe Tokarz via Norm N9ZKS. He still has SF data engine dual port packet controller which he can make available as the topic is discussed when Norm returns. Joe wanted to fill a gap in packet coverage in the B/N area if at all possible.

Jim WB9UWA mentioned club's old antenna on Corn Belt's tower has high SWR, but capable for packet if tuner used to compensate.

Keith was asked to city wide emergency drill by fire chief Keith Ranney, wants to include hams in this drill. Will be in September sometime. McLean county disaster council. Jeremy Hendricks, a member of the local Civil Air Patrol, is involved with this organization & expanded on Keith's talk. This is the 3rd planned disaster drill, so we can be in the planning stages. Rick WD9HRU also asked about local ARES group to support that effort. Training still an issue, online or classroom still required. Rich N9YAY ARES leader.

Ruth Davis, a descendant from David Davis family, offered a 60 foot tower for free if removed. Jim WB9UWA stated he thought it is Rohn SSV, which will need a crane to remove. Keith brought up for information & offer, Located at 200 N. Belmont, off Country Club place, Canterbury court off Washington.

New Business:

Jeremy is active in Civil Air Patrol, Air Force has like 100M\$ to spend on equipment, meet at hanger on Monday nights. They have a new repeater needing to be setup, would like guidance from knowledgeable hams on how to do so properly. They would supply the personnel to perform the work/installation.

Also interested if CIRC would teach a basic ham class for roughly 30 students. A classroom at ISU was offered for this use if Heartland space is too small by Ed Livingston WB6NNW. Ed stated the head of CAP is also a ham & he will help in these projects as well.

Representative Dan Brady offered us to visit Springfield State Police IEMA communications center. Discussed for a Saturday visit, Keith to contact their office for planning future tour.

Also, Ron Ross of WJBC offered to do a station tour. This is local & could be done in lieu of an evening meeting.

Close meeting Gary AB9M, Rick WD9HRU 2nd, carried.

2007 Field Day - Lessons Learned

Do not lose the critique!

RYFM - Read your Friendly Manual - how to run your own equipment...Bring copy of manual Have cheat sheets for each station.

Training to show participants how to use

Pre-network setup & install logging software before FD.

Discussed club purchase of N3FJP log software. At last notice, it was \$10, other parts in suite included for total \$60 lifetime, included other contests too. This would help us prepare with FD operations & club competitions throughout the year.

We could also align training with 10-10 breakfast, contests, Tues night net, club meeting.

Ground system issues. Need to use counterpoise, SWR went down significantly installing. Same for NVIS, needs counterpoise as well. OK on 80, fair on 40, need upper bands 1/4 wavelength for each band to be effective. Gary AB9M has rotor wire to build grounding radials like Cushcraft. Floyd W9EX was told ground radials needs to be as long or longer than the lowest band for best effectively.

Ground system maintenance, Epsom salt the rods, use megger to check out quality.

CW & digital station had no interference located in trailer (This was attributed to the many ants using their antennae as parasitic radiators. Hi Hi).

Test bandpass jumpers, traps & all equipment prior to FD.

Noise was down using double bazooka antenna.

Start teardown after contest ends by the clock. More contacts could have been made had the antennas not been taken down before 1 p.m.

Add internet feed for weather radar from ARC.

Need additional CW and digital mode operators.

Doug KO2R suggested we have station captains, go-to person for setup, etc.

Satellite setup / contacts, APRS too

20M antenna worked great on digital for ARRL bulletin.

Go-to station was discussed but not brought or setup, very few users to get points for.

Manning was better, ran all night on stations, don't quit on Sunday morning unless bands dropped off.

Plan to use R7 at night for digital when quieter.

Antenna tuners

Lift & rotor worked well for beam.

Send Thank You's to site visitors, dignitaries, ARC, etc.

Need donations for ARC use, etc.

Better contingency planning for weather conditions.

Eric's Antenna

After about 2 weeks of hard work by Eric Lowery (N9DOA), Norm Huber (N9ZKS), and Jim Shaffer (WB9UWA), the tower and HF antenna system of silent key, NQ9M is down.... and part of it is back up at N9DOA's at the 60, 70, and 80 foot level of Eric's, now 90 foot tower. The HF antennas consisted of a 20 meter mono bander and a 10/15 meter dual bander. The 20 meter mono bander is slated to go on Eric's tower at the 90

foot level. Eric loves to climb, so he was the designated tower monkey. The roof attachment for the East guy wires are no ordinary dish mount. That's heavy duty steel and is a design that several of us came up with together. The challenge was to guy the tower in the front yard. Part of the top set of guys from SK NQ9M was used "as is" to allow the use of torque arms and insulated guying for the 20 meter mono band to go at tower top.

As Eric was installing the tower, he paused at the 65 foot level to exclaim that he was finally above his trees ! At that level he could see well past the El Paso city limits and in to the country side in all directions. At the 80 foot level, he identified Waterson Towers in the haze. How many of us are jealous of THAT tower? If you have worked him on .52, you know he has a booming signal at just the 50 foot level of his tower.
Jim Shaffer, WB9UWA.

Nets in the Area

Mon thru Sat	9:00 A.M. CT	14.2475 (HF)	Displaced Peorians
Monday	9:00 P.M.	146.730	123.0 PL Open Net
Tuesday	9:00 P.M.	146.255	(103.5 PL) Woodford County
Tuesday	7:15 P.M.	146.910	Tazwell County ESDA Net
Tuesday	8:30 P.M.	28.450	CIRC Open 10 meter Net
Tuesday	9:00 P.M.	146.940	(103.5 PL) CIRC Open Net
Wednesday	9:00 P.M.	147.060	Open Net Has Newslines
Wednesday	9:00 P.M.	442.250	103.5 PL ARES Open Net
Wednesday	Varies	147.100	103.5 PL <i>Sometimes</i> Trader's Net follows ARES Net held on 442.250
Thursday	9:00 P.M.	146.760	(162.2 PL) Open Net with Newslines
Thursday	9:00 P.M.	146.850	(103.5 PL) Open Net Peoria
Thursday	9:00 P.M.	146.895	North central IL Traders Net
Sunday	08:15 A.M.	1.815	Open 160 meter AM net
Sunday	7:00 P.M.	146.985	Clinton ARC net (NEW)
Sunday	8:30 P.M.	147.075	Open Net with Newslines

Central Illinois Area Repeaters

Freq	Callsign	Location	PL
145.390	N9EZJ	Lincoln	103.5
146.730	K9HGX	Decatur	123.0
146.790	WD9HRU	Bloomington	
146.850	W9UVI	Peoria	
146.940	W9AML	Bloomington	103.5 CTCSS
146.985	KA9YPK	Clinton	
147.015	NX9M	Normal	88.5 (open*)
147.075	W9UVI	Washington	103.5 CTCSS
147.100	WA9RTI	Decatur	103.5
147.150	WD9FTV	Bloomington	
147.345	K9ZM	Lincoln	103.5
147.390	WB9DUC	Pontiac	127.3
442.250	WA9RTI	Decatur	103.5
442.700	WB9UUS	Normal	107.2 (open**)
444.350	W9EX	Normal	107.2

* Repeater is currently in open mode with pl for those with QRM

** Repeater RX with tight carrier squelch and loose tone squelch (107.2)

(Please help me keep this list correct. I know it may not be up to date at this time. Norm N9ZKS)

LOCAL DX PACKET CLUSTER INFORMATION

"DX spotting network" - N9PE (Memorial Station) 144.91 MHz - 1200 baud - Connect to N9PE - Contact AB9M or KB9LNS for more info.

FOR SALE

Hy-Gain TH6DXX 6-element triband beam, 10, 15, & 20 meters w/heavy duty mast, disassembled and labeled. Butternut HF-2V 40 & 80 meter vertical with ground radials and mounting bracket. \$275 for all. Gary - WA9BJU. Ph. 663-9211 or 706-2914. --Gary Frankeberger

Amateur radio festival slated

CARLINVILLE — The Macoupin and Montgomery County amateur radio clubs are hosting their annual Amateur Radio/Computer Festival from 7 a.m. to 2 p.m. Saturday, Aug. 4, at the Macoupin County Fairgrounds, 1 mile north of Carlinville on Illinois 4.

The gate opens at 6 a.m. for tailgaters and vendor setup.

Talk-in frequencies 146.820 and 444.250 PL 103.5 are available.

Activities include a hot-air balloon launch, displays and demonstrations by the Illinois Terrorism Task Force transportable emergency communications trailer and the secretary of state's police bomb disposal team.

There will be consignment and silent-auction tables, a food stand, door prizes and a grand prize of an ICOM 2720-H dual-band radio.

For those interested in testing for an amateur radio license, testing will be held at 9 and 10 a.m.

CIRC Repeater Problem Group

July 15, 2007

Group:

Gary Huber – AB9M *
Jim Shaffer – WB9UWA *
Chuck Kostelc – N9RZV *
Keith Hanson – AC9S *
Rick Kempf - WD9HRU

Present *

Also Present:

Connie Kostelc – KB9IGT
Norm Huber – N9ZKS

The following are the group recommendations on how we should proceed to fix the 94 repeater and return Rich Ranson's loaner. Note the first four items can be pursued in any order and simultaneously.

1. Lightning Protection – We do not know what caused the failure of the previous repeaters, but we do not currently have lightning protection on the system and the easiest first step is to add it. Jim Shaffer will add an Alpha Delta to the feedline ASAP. Note the coax shield is grounded both outside and inside the shack.
2. We need to address water protection for the power divider at the antenna. The current water cap is vulnerable to water infiltration during wind driven rain. Eric Lowery, N9DOA, has volunteered to climb the tower and fix the divider. Keith Hanson, AC9S, will contact Corn Belt once we have a tentative climb date.
3. We recommend making one additional attempt to correct the finals and associated circuitry in the old repeater, expending no more than \$200 on materials. Keith Hanson is going to contact RF Parts by telephone to get a price on the finals and parasitic resistors. We are also going to check with Rich Ranson to see if he knows anyone who has those parts on hand.
4. We recommend cleaning and realigning the cavities. Roger, WQ9E, has offered the use of a spectrum analyzer for the realignment. It may be possible to selectively silver plate the more critical elements in the cavities, specifically the rods

and perhaps finder stock. Chuck will pursue commercial plating facility

5. If we need to replace the current repeater we recommend going for a commercial unit. Jim is pursuing an estimate on a new Kenwood TKR750 through Hill Radio. We do not have that estimate yet, but if it is comparable to Yaesu or Icom units we recommend a local dealer.
6. If we do not need a new repeater we recommend funding a replacement set of cavities. We can take our time and look for a good used silver plated set. A new set will run in the \$2000 to \$3000 range.

Keith Hanson
AC9S

Jims original diagnosis of our repeater

2007

Here are my notes from looking at the MSR2000.

.5 watts drive and 4 watts falling to 2 watts output. Lightening?

PA Model TLD2532a Intermittent duty.

Power supply at 15.5 VDC and 14.7VDC at TX. 13.8VDC is spec.

Short at base of final. Left is outputting and right is totally dead.

B-E chokes OK, .2ohm each L8 & L9.

2) M1104 Motorola transistors needed.

Need silicon grease.

Need 2) 10 ohm, 1 watt carbon resistor.

Need 1) 15 ohm, 2 watt carbon resistor.

Exciter TLD9232 is weak in power output.

SWR high into cavities, perhaps 3/1.

As recent as 2007, repeat and IDer audio was intermittently about 20 db down.

2006

Previously, the power output became weak on the repeater in 2006.

The output stage on the exciter PCB was replaced due to weak power output.

When the output cap. on the exciter was peaked, 90 watts was possible.

Only .5 watts of drive was present.

Power was set to 45 watts resulting in 28 watts out of cavities.

Repeater had an intermittent condition where repeat audio and ID audio was about 20db down. Solder joints were re-soldered. That 'seemed' to solve the audio problem as before re-soldering, it would go intermittent due to physical impact.

2005

Two different intermittents developed seemingly unrelated except for possibly the power supply.

- 1) Repeat and IDer audio would go intermittent weak, about -20db.
- 2) 2) Repeater did not repeat and in fact the TX would not come on until the signal on the input went away, then it would only bump on for the normal hang time duration, giving the impression of being heard. This problem never re-appeared after 2005.

Another problem, unrelated to the repeater itself is that the bottom of the power divider at the antenna was "vented" to allow drainage of any water that might find its way into the air power divider. This was provided with a hood to shield out rain and may have been disturbed in the installation process. Any wind driven rain gets into the holes at the bottom of the power divider and causes repeater static. This quickly dries out after the rain is over. What is needed is a trip up the tower to extend the hood to reduce the chance for wind driven rain to get into the power divider. It only needs a small air passage to equalize the air pressure between the inside and outside of the power divider.

Yet another problem is the cavities themselves. They are NOT silver plated and need cleaning and re-alignment frequently. They are static and intermittent to the touch. For the power and sensitivity, the rejection is marginal. Two pass cavities were 'loaned' to the cause and connected one to the TX and one to the RX. This resulted in eliminating the desense. Site noise is high enough that when

the antenna is replaced with a dummy load, the RX is about 10db more sensitive. This is even when the TX is fed to a dummy load, so it is all site noise rather than TX noise.

Other than that, the repeater works pretty well and continues to have great range.

Keith, let Rich check his resources before you shop Dayton. Check with Rich before you leave for Dayton.

Jim Shaffer, WB9UWA.

QST DE KA9QPN

Field Day...

**Another Field Day has come and gone. I was fortunate to visit the Kishwaukee ARC operation in DeKalb and the Starved Rock RC effort a stone's throw from my home. What impresses me most was the level of ingenuity in getting the stations on the air. I saw messenger lines for wire antennas being lofted over support poles using a home-made compressed air cannon. I saw military surplus telescoping masts pressed into use once again as supports for wire antennas, omnidirectional VHF/UHF sticks, and incredibly, a tribander. I also saw ARES® people explaining our capabilities to an interested Mayor of a neighboring town and several Sheriff's Deputies. People of all ages were operating, including many young people. Who says that we're no longer relevant? Most of all, I saw dedicated people having fun and proving our ability to set up and function under the gun. Congratulations to all who participated in any capacity.

**An ambitious goal was set by several Section officials. Several were bound and determined to visit as many sites as possible. ACC Eric Rademacher K9QKB visited fourteen different FD locations from Wauconda to Bolingbrook. He started at 1300 on Saturday and continued past 0400 on Sunday. Eric surprised more than a few bleary-eyed souls overnight. Cook County DEC Neil Ormos N9NL, not to be outdone, visited eighteen sites from Aurora past Oak Forest to Lake Forest. Operators that Neil found awake were left with a handshake and an ice cream sandwich. An amazing

job by these two folks, and also by the clubs that were visited.

**All of our FD operations are outstanding exercises in their own right, but one in particular deserves a bit of recognition for 'above and beyond'. The Fox Radio Relay League had both a well-staffed visitors tent, where those unfamiliar but interested would be properly welcomed and briefed; and a tent to further FRRL's highly successful 'Next Gen Hams' program. Not every club can mount an effort like FRRL's, but the lesson there is don't forget the uninitiated and the kids when setting up in a public place (distilled from an N9NL email).

**The Rockford Amateur Radio Association got a nice look on WREX-TV 13. Other clubs got mention in their print media, and just in time for FD was a proclamation by the State of Illinois declaring Amateur Radio Week.

**From Ron Orr K9RST, President of the North Shore Radio Club, comes this take on FD: 'As tired as I get on Field Day, it is always worth the hard work that it requires. Field Day is a social event -- it is meant to bring us together as a family. So, I was thrilled to see so many from our club come out to the picnic and bring their wives and families with them. To me, the delicate job is to balance the social side of the event with the competitive side. Yes, it is great to see so many people exposed to parts of the hobby like RTTY and CW, but I would argue this is not the time or the place to demonstrate these modes to the public. As the bands become more active, and the competition becomes more intense, I would expect to see us focus much more on our scores. We need to find better ways to demonstrate the working parts of the hobby in the pavilion, rather than in the contesting tents. Field Day is far too much work for too many people to think of it as a totally casual affair. I think we have managed to do a good job of balancing -- contest, social and education. Fact is, we have nurtured some really fine operators in the past two years, that would not have happened if we didn't have competitive stations. ...(Y)ou quickly

learn that you have to operate differently for different bands. For instance, on VHF, most of the time is spend begging for stations to come back to you. When you catch a live one, many want to chat a while, and then invite you to work CW on 2 meters and then move to 6 meters, so you can capitalize on the contact. It is a completely different experience than HF contesting bands.' (from the NSRC Transmitter, July 07)

**All of the emails and newsletters haven't landed here as of today. Don't feel left out if I haven't covered your FD operation. We'll catch some more next month as we receive word. Much more at <http://www.arrl.org/sections/?sect=IL>
ARRL Illinois Section
Section Manager: Thomas T. Ciciora, KA9QPN
ka9qpn@arrl.org

Wavelengths
The buzz about EMI

From the MRT Bulletin
By Mary Rose Roberts
June 6, 2007

Pardon the pun, but there has been a lot of buzz lately in the enviropress about the disappearance of honeybee populations throughout the United States. In many sections of the nation, honeybees set out from their hive and never return. No bodies are found. Only a few infants and the queen bee are left -- none of which can survive without a strong colony of worker bees to build and to maintain the hive.

Scientists dubbed the mystery "colony collapse disorder," or CCD. Thus far, beekeepers in 24 states have reported a 35% loss of their bee colonies.

Nearly one-third of the human diet comes from insect-pollinated plants -- which includes crops such as apples, almonds, melons, blueberries and several varieties of citrus -- and the honeybee is responsible for 80% of that pollination, according to the U.S. Department of Agriculture. So,

CCD not only puts beekeepers' livelihoods at risk but also the U.S. food supply that depends on honeybee pollination.

The root of CCD is unknown. However, several scientists in the U.S. and Europe point to electromagnetic interference, or EMI, as the culprit behind the widespread destruction of the species. Scientists tie an increase in global EMI to the honeybees' inability to find flowers -- which provide a source of life-sustaining nectar -- and to return to the hive.

Bee biologists aren't the only ones concerned with EMI and its effect on life. For instance, Sue Storm, director of the Healthy Home Alliance, currently is fighting a Wi-Fi installation in her hometown of Naperville, Ill. Storm believes there is a connection between Wi-Fi and neurological disorders, including Alzheimer's disease, Parkinson's disease and brain tumors.

Autism may be another result of electromagnetic interference, according to Tamara Mariea, founder of Franklin, Tenn.-based Internal Balance, which strives to reduce electromagnetic pollution in the environment. She believes the erection of cell towers, increased use of cell phones around the globe and additional Wi-Fi installations all are contributing to the rise in autism rates.

Though Mariea issued a statement in April that said she soon would release the findings from more than five years of research on clients with autism and other membrane sensitivity disorders that point to electromagnetic radiation stress as a major culprit, there currently is no hard evidence to support any of these theories. For all anyone knows, autism could stem from environmental pollutants, such as coal-burning power plants and high levels of mercury in fish stocks. Similarly,

honeybees could be dying off simply because of the use of pesticides.

Nevertheless, the raising of these issues brings to light an important question: While our industry rushes to implement innovative wireless technology -- much of which is used by first responders to keep the populace safer -- is it putting enough effort -- and resources -- into ensuring its offerings are environmentally friendly? My guess is that the answer is a resounding "no."

Some may cringe at this idea, but the federal government needs to drive independent study of the short- and long-term implications of EMI -- and then, if warranted, develop ironclad regulations to mitigate the threat.

This is not something that should be left to commercial entities whose every thought is guided by the pursuit of profit. If you disagree, consider for a moment what things would be like today if not for the creation of the Environmental Protection Agency and the clean air and water acts -- all of which were born as a result of heinous acts of environmental sabotage from irresponsible corporations.

Should the EPA fail to take the lead on this issue, our industry, paradoxically, could well end up creating technologies that seriously harm us on one level while protecting us on another.

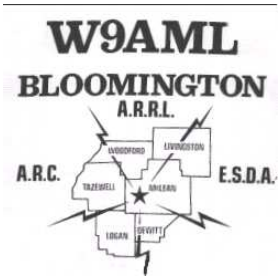
E-mail me at mroberts@mrtmag.com.

SOME PICTURES FROM FIELD DAY



Meeting Wednesday July 25

Central Illinois Radio Club July 2007 Newsletter



Central Illinois Radio Club
P. O. Box 993
Bloomington, IL 61702-0993