



# KARS KEY KLICKS



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December 2009

## ELECTIONS AND RED CROSS VEHICLE

### MEETING VENUE CHANGE

The Next KARS General Meeting will be Tuesday, December 1st, 7PM at the public meeting room at the Red Cross in Bourbonnais.

After a brief business meeting the annual elections will be held. Following the elections a program featuring the Red Cross "Emergency Communication Response Vehicle" will be presented.

Take a fascinating tour of one of these extremely well equipped emergency centers on wheels.

### EXAM SESSION

Carl K9CS reports that there will be a testing session at Glen Raymond School, 101 W Mulberry St in Watseka on Tuesday Dec 8 at 7:00PM.

Exams for all classes of license will be available including Morse code tests. All VE's are invited to participate to help keep their certifications current.

### HAPPY BIRTHDAY

December 1	WD9AYI
December 7	N9LCX
December 20	M0SLA
December 20	WA9WAQ
December 22	N9OE
December 24	AK9F
December 28	K9JLK

Let the newsletter editors know if we miss your birthday or get it wrong

### NCS FOR NOVEMBER

December 7	KC9FAV
December 14	N9LYE
December 21	WD9AYI
December 28	WD9FYF

Don't forget the net!  
Mondays at 2100 hrs. local time



Jerry WB9Z describes the Desecho DXpedition at the November KARS meeting

### KARS KALENDAR

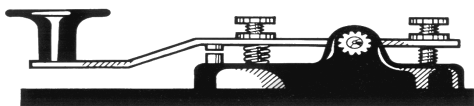
Dec 1.....KARS Meeting  
 Dec 4-6.....ARRL 160 Contest  
 Dec 8.....Exam Session—Watsoka  
 Dec 11-13.....ARRL 10 Meter Contest  
 Dec 15.....KARS Board Meeting  
 Dec 25.....Merry Christmas!  
 Dec 26-27.....Stew Perry 160 Contest  
 Dec 31.....KARS New Years gathering  
 Jan 2-3.....ARRL RTTY Roundup  
 Jan 9.....NA QSO Party CW  
 Jan 16.....NA QSO Party SSB  
 Jan 19.....KARS Board Meeting  
 Jan 23.....KARS Banquet  
 Jan 24.....WRCA Wheaton Hamfest  
 Jan 29-31.....CQWW 160 Contest

*The Kankakee Area Radio Society operates repeaters on:*

146.34/.94	107.2 PL Access
449.8/444.8	114.8 PL Access

*Also, co-sponsors:*  
 145.130 107.2 PL Access

*Additionally, KARS sponsors:*  
 144.39 Wide Area APRS digi-peaters  
 145.53 KARS DX Cluster



# W9AZ

### REPEATER NEWS

Most of you know that we have been experiencing outages of a day or more on the .34/.94 system. The tech crew have traced the problem to a balky EEPROM in the Quantar station control module. Hopefully the problem will soon be rectified.

This has brought to light the need for a backup system. Don K9NR found a Motorola MSR2000 100 Watt VHF repeater that will convert easily to .34/.94. for a VERY good price!

To further sweeten the deal John N9LYE volunteered to drive all the way to Detroit to pick it up! **Cont on pg. 3**

### KARS HOLIDAY BANQUET

The annual KARS winter banquet will be held on Saturday, January 23rd at 6 PM. This is in lieu of our regular meeting. The banquet this year will again be in the semi-private room at the Brickstone Restaurant and Brewery on Latham Drive in Bourbonnais. The Brickstone has an elegant atmosphere and excellent food.

### MENU

Prime Rib	\$17.99
Chicken Amore	\$14.99
1/2 Slab BBQ Ribs	\$14.99
Atlantic Salmon	\$14.99
Pasta Bella	\$14.99

All the above include a garden salad  
The club will spring for appetizer trays.

It is necessary that you reserve ASAP to insure your meal. In no event should you reserve later than two weeks prior to the event. Send your check to Francis KE9MG at 326 S. Douglas Avenue, Bradley, IL 60915 or give it to him in person at one of the meetings.



# MERRY CHRISTMAS!



# KARS HOMEPAGE— WWW.W9AZ.COM —KARS HOMEPAGE

## THREE HALF WAVES ON 10 METERS

by John N9LYE

On a cold dark rainy night in late November, I came to the conclusion that my simple vertical for 10 meters was not going to be enough. The bottom of the Solar Cycle was upon us. The ARRL 10 Meter Contest was rapidly approaching and I needed something much better. A three element monobander was a good idea but soon ruled out. The rotor was already turning two other Yagis on a 2 inch black iron pipe with my vertical mounted on top. The addition of another and much larger Yagi would be too much for the rotor to handle. There was also the problem of two trees near the tower that were in the way.

Then it came to me! Trees. Two of them! Seventy-five feet apart and nearly sixty feet tall. I could fit three half-waves between them and supported more than a full wavelength above ground. One other antenna was invented based on that very idea. The G5RV. If it worked for him, why wouldn't it work for me? I just needed to scale it down to 10 meters. Doing so would solve several problems.

My version of the G5RV has several advantages. It has more gain than a typical dipole. There are two primary lobes and one secondary lobe per side. It works on 20 and 40 meters without a tuner when mounted more than 35 feet above ground...and it is very simple to make. However, this is where everything changes. I rejected the classical formula and substituted my own:

(Classical formula) Length (ft) =  $492 (n - 0.015) / \text{MHz}$

where n equals the number of half-wavelengths of the wire

(My Formula) Length (ft) =  $468 \times 3 / \text{MHz}$  (flat top using 12 ga. wire)

Length (ft) =  $468 \times .92 / \text{MHz}$  (450 ohm matching section)

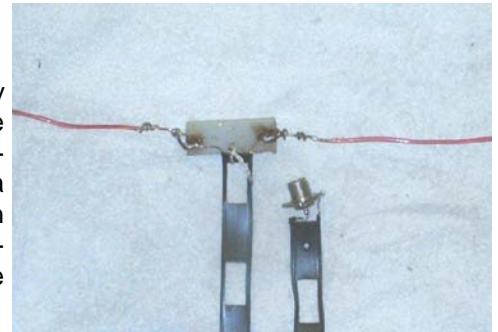
...when using 600 ohm open wire use .97 for velocity factor

The math works out to be 24 feet 10 inches per side of the main radiating element. I started with 25 feet 2 inches, knowing that some trimming will be needed. The matching section is made of 450 ohm ladder line that is 15 feet 3 inches long. The last part is something that everyone has overlooked in the original design. The 75 ohm coax was a minimum of 68 feet long. This is approximately one wavelength on 20 meters. Many have shortened this length, only to have RF problems in the shack. I surmised the same might be true on 10 meters. The coax length worked out to be 35 feet, although longer lengths were tried and worked fine.

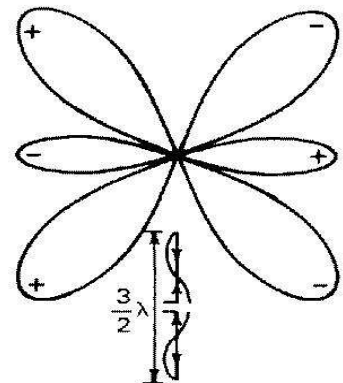
The 75 ohm coax can be replaced with 50 ohm, if you don't mind the 1.8:1 match it presents to the rig. This is not an issue for the real rigs that glow in the dark. The top of the matching section is connected directly to the dipole elements. The other end is where I made a slight change. An SO-239 chassis mounted socket was soldered directly to the matching section. Two small tie wraps were used thru the holes in the socket and passed thru a hole made in the ladder line to take the stress off the wires. This modification was made to accommodate changing to a longer coax in the future. During later tests on the original G5RV, a balun at this point suffered from core saturation and heating, resulting in poor performance when used with a tuner on other bands. (Ref: <http://www.qsl.net/aa3px/g5rv.htm>)

As I expected, some trimming was needed. My target frequency was 28.250 Mhz. This would allow both the CW section and Phone section up to 28.5 Mhz to be covered. After finally raising it up to 45 feet, the VSWR was also good on 14.125 and 7.065 Mhz without using a tuner. It was found out later during Field Day 2009 that the internal tuner of an Icom IC-746 Pro would also tune up on both 15 and 80 meters (Thanks to Craig N9FD).

The big question was, how did it perform? Far better than the vertical at the top of the tower. However, it was noted that some band enhancement from a meteor shower might have played a small part. Considering the simplicity and the materials used in its construction, the performance far exceeded expectations.



N9LYE's version of the popular G5RV antenna...illustrating the feed point



Pattern of the popular G5RV antenna

## COMCAST CABLE TOWER IS HISTORY AND 145.130 REPEATER IS QRT

A landmark structure in the Kankakee area is no more. The Comcast cable tower has been taken down. KARS has had an antenna at the top of this 400ft structure for decades. In recent years the 145.130 repeater has been using the antenna. Consequently, the repeater is temporarily off the air. Howard AK9F and Don K9NR are looking around for a new perch. It would be much too nice a frequency pair to lose to another area.

It could also use an equipment upgrade. We hope to meet with the principal owners and come up with an arrangement whereby the repeater will find a new home, new equipment and a future insured for many years to come...a continuing asset to the Kankakee area amateur radio community.



**John WD9AYI and Bill N9OE show off the new “KARS” license plate for the KARS EmComm Trailer...how cool is that!**



**KARS latest victims err...member candidates at the November meeting**



**A view of about half of the group at the “small” KARS New Years Eve dinner last year. See you there again this year!**

**REPEATER NEWS**

Cont. from pg. 1

This he did on Wednesday November 25th. Thank you John!

To make this story even better, Sam W9QKF offered to sell us another one of these repeaters for an even better price! Free! In fact, we were hoping to find another one as the 145.130 repeater needs upgrading.

For a full report and further news on the .34/.94 voting system and the new 444.8 repeater, be sure to attend the December meeting.

**K9NR/K9QT ANTENNA PARTY**

The K9NR/K9QT antenna system suffered considerably from last winters ice and wind storm.

The forty meter Yagi was broken. The KLM tribander had a high SWR. The thirty meter loop feed was broken. The six meter Yagi feedline was filled with water. The rotor on the 100 foot tower was broken...you get the picture.

Consequently, on Friday November 6th, the day before CW Sweepstakes, they hosted an antenna party.

Down came the damaged antennas and rotor and up went the new ones. It was a major undertaking. The antennas were big (not WB9Z big, but big). A Bencher Skyhawk 10 element full size tribander and a Cushcraft XM240 40 meter Yagi converted to a Moxon.

The two antennas weighed in at about ninety pounds each! New feedlines and a new HyGain Taitwister rotor rounded out the repair.

The results? K9NR was still installing coax connectors an hour into Sweepstakes on Saturday but still managed to make 1048 contacts!



**Hefting a ninety pound full size tribander into position**



**The same antenna at 100 feet Looks pretty small up there!**



**The forty meter Moxon beam on the way up... dwarfs the tribander!**



**Everything in place Safely!**

**NEW YEARS EVE DINNER**

If you and your spouse aren't the types that go out on New Years Eve and drink yourselves blind but you would still like to do a little something to usher in the New Year, we have a suggestion.

Unofficially, a small group of KARS members have been meeting at El Campesino around 6PM on New Years Eve for dinner and friendly conversation. We then go our own way to party or more often; go home, relax and welcome the New Year in our own way.

As stated earlier, this is an unofficial activity...not to be confused with the annual KARS banquet. While there are no reservations required, we need to have an idea of how many plan to show. Last year, so many KARS members showed up that the restaurant actually ran out of food stuffs to prepare!

This is a relaxing get together. No program. No plans. Just order from the regular menu, visit, enjoy the food and have fun. If you and your significant other plan to attend, send Don K9NR an email at: "donk9nr@gmail.com" to let him know.