



LAPORTE COUNTY / HARBOR BEAM JUNE 2015



146.970 / 441.950 (W9LY)
Echolink Node: 193001
146.610 (K9JSI)



WHO WE ARE

Communications:

Matt Lasayko, KC9KUD
Dave Kaufman NU9I

Repeater Committee:

Matt Lasayko, Ron Broviak
Dan Sheetz, John Rozinski
Ken Osborne, Todd Saboff
Dan Foster, Dave Kaufman
Mike Broviak, Curt Yeater

Internet:

Stan Vandiver
Mike Broviak, Todd Saboff

Field Day:

John Phillips

NEWS LETTER:

Ken Osborne

Activities:

John Phillips

VE TESTING:

Scott Tharp

PUBLIC RELATIONS

Barb Cave

MEMBERSHIP:

Troy Harrison

AMATEUR RADIO A BRIDGE TO FRIENDSHIP

President:

Brian Salzer KB9HMR

Vice President:

John Phillips KA9PGC

Secretary:

Barb Cave KA6OJX

Treasure:

Ken Osborne N9ZIP

Board Members:

Ron Broviak, WA9RON

Dan Foster, KC9GFO

Scott Tharp N9NKK

Trustee W9LY:

Dan Sheetz W9DWS

Trustee K9JSI:

John Rozinski, N9CJR

Tower Site:

Ken Osborne

John Phillips

Dan Foster

Bob Smith

Fund Raising:

Brian Salzer

Ken Osborne

Troy Harrison

Ron Broviak

MEETING NOTICE:

Next LaPorte County
Amateur Radio club
meeting is Monday
June 15th
7pm
@ THE TOWER SITE

**LAPORTE COUNTY
AMATEUR RADIO CLUB**

P.O. Box 148,
Michigan City, Indiana 46361
WEBPAGE: <http://lpcarc.org>
EMAIL: info@lpcarc.org
FACEBOOK: lpcarc
A 501 (c) (3) Public Charity # 35-1390856



**ARES EMERGENCY
COORDINATOR:**

Dan Foster, KC9GFO

RACES OFFICERS:

Ken Osborne, N9ZIP

Dan Foster, KC9GFO

Ken Maynard, W8KRM

SKYWARN:

Ken Osborne, N9ZIP

In This Issue

**NOW YOU
KNOW**

FIELD DAY

NEW REPEATER

WELCOME



TO
THE
**LaPorte
County
Amateur Radio
Club**

lpcarc.org

LaPorte County / Harbor Beam

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PICTURE OF THE MONTH

The LaPorte County / Harbor Beam is published on the Saturday, before the monthly club meeting, 12 times each year, as a service of the LaPorte County Amateur Club; for it's members and those interested. Inquires and submissions should be sent to the LaPorte County / Harbor Beam Editor at our e-mail address info@lpcarc.org.

CLUB DUES

Club dues for 2015 is only \$15.00. Your dues goes towards our repeaters and pays for our insurnace, which is our largest expense, for the club. Our fundraisers keep our dues low and support of activities. Your dues can be paid at any club meeting.

Your can also be mailed.
Our mailing address is...
LaPorte County Amateur Radio Club
P.O. Box 148
Michigan City, Indiana 46361
Support the club!
Support our repeaters!
Membership is open to all.



CQ FIELD DAY
CQ FIELD DAY

This that time of year again, and Field Day will soon be here. Rain or shine it will be awesome event, so plan on joining us. Again we will fire up the grill, bond fire, great food, and of course playing radio. It's a chance to be with friends, old and new. A time to relax, get away from our daily lives, and have some fun. This year we will be at the tower site US 35 & Schultz Rd, in LaPorte. We will start camping on Friday. As with last year, a car show will be held on Saturday. Allot of food for every one. On Saturday, we ask that you bring a side dish. Bring your own drinks for all three days. We will use the call sign, W9LY for logging. If you plan to bring a HF rig, contact John KA9PGC. You'll also need a laptop for logging. We will have Internet Acces. With the car show, all RV's and tents will be south & west of the tower. If you have a RV contact John or Ken for location. Right now we planning for cars to park on the west side of the property. That has been cleared. We want to keep the camping and public area clear of cars. Over flow parking we'll be at the white house off of US 35.



WE'LL BE LOOKING FOR YOU

OUR NEW REPEATER

Allot has been happening with the W9LY Repeater. On 2 meters the new repeater is now in service. By the time this newsletter is sent out, our new repeater for the 70cm is being shipped, and should arrive with in the week. We want to thank our repeaters guys for the hard work they have put into the new system, Todd, Dan, Dave and Ken. We also have to thank Danny Sheetz and Bob Smith for donations of equipment.

Our new repeater has now been in service for six weeks now, and we had no issues. Our coverage area has increased 200%. HT's can now access the system from home. South Bend, Valpo., can get in the system, and we had a report from Hammond getting in on 20watts. Repeater usage has doubled since we installed. We even heard old fashion Ragchews and round tables. The best part, we switched back to a main recieve anntenna, and we had no intermod issues, like we had in the past. To say the least, Yaesu did get a great job the design of the repeater.

Our repeater team took the approach, one step at a time, and it paid off. We added to our system an internet IP Power Switch. This keeps us legal with the FCC so our Control Opeartors can have full control over our system. They can remotely turn the system on or off, with out having to make the climb, up the tower.

Our plans are to grow our system, buy adding a internet connection, to the repeaters. We would then have the option to link up with other repeaters. Echolink is still connected to the 146.970 repeater. Oh! by the way, we are also digital as well as FM.

WHAT TO KEEP UPDATE?

Our Newsletter only is sent out once a month. But our club is also on Facebook. There we post pictures, keep members informed whats happening, between our newsletters. For example, we when we schedule repeater outages, or we have issues. We post them to Facebook. It also lets others to give us feedback.

So if you want to keep up to date, check us out on Facebook.

<https://www.facebook.com/LPCARC>

TIN CAN FUND

Once again we need help with our Tin Can Fund. Last year with the price of gas and repairs to the mower, it seemed like the money in the can went out faster then it came in. This year, we'll need new blades to start our season and changing the oil. Last year, with all the rain, we had to mow just about every week-end.

So please donate to the Tin Can Fund. It can found at our meetings. Also proceeds from our meeting picnic goes to the fund.



CLUB
T-SHIRTS
ARE
IN

If you ordered a club T-Shirt...
you can pick your up
at the next meeting.

Bring cash or Check
Checks payable to LPCARC

We'll also have order forms
if you would like one
and have not order one

Minutes of LPCARC April 20, 2015 .

Meeting was called to order by President Brian Salzer at 7:03 p.m. on April 20, 2015.

Pledge of allegiance was recited by all present.

Minutes of the March meeting were read by Secretary Barbara Cave. Motion to accept by Ron seconded by Ken, motion carried.

Treasurer's report for March was given by Treasurer Ken Osborne. A temporary Special Purchase account was established to purchase a Yaseau Repeater. Balance is zero.

Josh made a motion to accept the Treasurer's report, Ron seconded, motion carried.

Repeater Committee reports we now have 2 Yaseau Repeaters on order. The first one should be received by the end of April, the second by June or July.

New blades and gasoline needed for Tower mowing. Another mower is being donated.

Spring clean up will be May 9th or if it rains May 16 starting at 9:00 a.m.

Field Day. Next month we will finalize food, tents and carports. The trailer will not be available because Michigan City is having an event.

Hamfest. President Brian Salzer has reduced the list for mailings to 510 people, that have attended in the last 3 years. He has a flyer ready to be mailed to vendors.

Membership is at 50 members.

Ron had trouble with the ".97" machine.

Brian Salzer wants to set up a Fox hunt next month before the meeting. Scheduled for 6:00 pm at the Tower site. Brian and Ron to work on setting up a "fox hunt".

Next meeting May 18, at 7:00 p.m. at the tower site.

Motion to adjourn by Ron, Seconded by Ken.

Respectfully submitted,

Barbara Cave, Secretary

At our next meeting.....

It will be held, at the tower site.

Again we will cook out, starting at 5pm.

On the menu will be..

Burgers

Hotdogs

Potatoe Salad

Pop

MEAL DEAL \$5.00

(Burger or 2 dogs, Salad, Pop)

Burger single order \$3.00

Hot Dogs \$2.00

All proceeds goes to the Tin Can Fund.



KNOW YOU KNOW

This month we pick up where we left off.

The double bazooka is claimed by its users to be broad-banded, a quality especially interesting for those hams operating on 75/80 meters. Tests done at the A.R.R.L. have shown the double bazooka is only slightly more broad-banded than a regular dipole, probably due to the use of a large conductor (coax) for the center part of the antenna. The double bazooka will not transmit its second harmonic, and its users say it does not need a balun. Other users say it is quieter than a regular dipole. The center of the antenna is made from RG-58 coax. To find the length of coax needed, divide 325 by the frequency in MHz. The coax forms the center part of the double bazooka and a piece of number 12 wire on each end completes the antenna. The length of each of the end wires is found by dividing 67.5 by the.....

frequency in MHz. To increase the bandwidth some builders use shorted ladder-line in place of the number 12 wire, which makes the end pieces to be electrically larger. The feed-point of the double bazooka is unique. At the center of the coax dipole, remove about 3 inches of the plastic covering, exposing the shield. Cut the shield in the center and separate it into two parts. Do not cut the dielectric or the center conductor. Leave the center conductor with its insulation exposed. On the feed-line strip off about 3 inches of outer insulation, separate the shield from the center conductor, and strip about 1 inches of the insulation from the center conductor. To attach the feed-line, solder the two exposed feed-line conductors to the two pieces of the separated exposed shield of the dipole center. It goes without saying: seal the feed-point to prevent water from getting in. At each of the two ends of the coax forming the center of the antenna, the coax is stripped back and the center conductor and shield are shorted together and soldered. The end wires are soldered to the shorted coax ends, run to insulators at the end of the antenna, and the soldered joints are sealed against the weather.

A broad-banded dipole for 75/80 meters can be constructed by attaching two equal length dipoles to the center feed-point and spreading the ends about 3 feet apart using PVC water pipe to separate them. The completed dipole looks like a bow tie. This makes the antenna to appear electrically to have that of a large diameter conductor.

Because of this, the overall length will need to be shorter than a single wire alone. When we used the antenna, we found a length of 110 feet would cover most of the 75/80-meter band without a tuner. It is fed with 50-ohm coax. The use of a balun is optional. The antennas for most of the higher bands have enough bandwidth so they do not need broad banding.

The two-element collinear dipole is an antenna that is a full-wavelength antenna having a two-dBd gain. It can be fed with ladder-line and a tuner and used as a multiband antenna, or it can be fed with a quarter-wave-matching stub with 50-ohm coax cable to make it a single band array. In the stub matching system, a quarter wavelength of ladder-line is connected across the center insulator, and the opposite end of the ladder-line is shorted. A shorted quarter-wave piece of feed-line acts like an open circuit. Going from the shorted end of the ladder-line toward the dipole, there will be a point where a piece of 50-ohm cable will find a perfect match. The 50-ohm feed-point will have to be found empirically (trial and error).

The four-element collinear dipole array consists of four half-wave segments connected end-to-end with an insulator between each two adjoining segments. The feed-point is at the center of the array. The antenna is fed with ladder-line through a tuner.

A quarter wave shorted ladder-line stub hangs down vertically from the insulators between the inside and the outside half-wave segments. This stub provides a 180-degree phase shift so that all half-wave segments are fed in phase. This antenna has a 6-dBd gain and it radiates bi-directionally at an angle perpendicular or broadside to the plane of the wires. This antenna is too long for most hams to use on 80 and 40 meters, and the stubs hanging vertically will be too close to the ground. For 20 meters, the four-element collinear array will be 97 feet long and the stubs will be 18 feet. To find the length of each half-wave segment, divide 468 by the frequency in MHz, and for the quarter-wave stubs, divide 246 by the frequency in MHz. MFJ has begun marketing the four-element collinear monoband array. They have them for 20, 17, and 15 meters. This antenna is so easy to build that you can do it yourself. All you need is 5 insulators, antenna wire, and some ladder-line.

It will have no gain if you use it on bands for which it is not designed because the stubs are used as phasing lines. It is definitely not a multiband antenna. It is possible to add more half-wave segments to the ends of this array to make it have 6, 8, 10, etc half wave segments. Adding more segments will add more gain and make the lobes narrower.

Antennas fed with 50-ohm coax can be used on other bands for which they are not cut. An 80-meter dipole will have a relatively low SWR and will be resonant at a single frequency on 10 meters and not much power will be lost in the coax even if operated off resonance. A 40-meter dipole will work the same way on 15 meters. Using coax, a dipole will work on its fundamental frequency and on odd-harmonic frequencies and it is not necessary to use ladder-line. The fundamental frequency is the frequency for which the antenna is a half-wavelength long, and the odd harmonics are 3 times, 5 times, 7 times, etc. the fundamental resonant frequency. A frequency of 21 MHz is 3 times or the third harmonic of 7 MHz, and 28 MHz is the seventh harmonic of 4 MHz. Antennas operated on their odd harmonics will be resonant a little higher in frequency than exact multiples of their fundamental frequencies. Since the odd harmonic antennas input impedance is higher than it is on its fundamental frequency, many amateurs use a series quarter-wave matching section of 70-ohm coax to give it a better match. The 80 meter inverted-V dipole in use here has a 2:1 SWR on 10 meters indicating it has an impedance of around 100 ohms. However, modeling the antenna for 10 meters shows the resonance to be below 28 MHz, probably because the antennas fundamental resonant frequency is 3920 instead of 4000 kHz. A quarter wave 70-ohm matching section should bring the SWR down to a much lower level.

As said earlier, if you try to use coax with a dipole on its even harmonic frequencies, the feed-point impedance will be very high, the SWR will be extremely high, and the coax will absorb most of the power. In addition, when operating a coax-fed antenna on its even harmonics, the tuner may not be able to provide a match. Operating any antenna on any of its harmonic frequencies, odd or even, will work better if it is fed with ladder-line and a tuner.

This antenna is matched by a quarter-wave 70-ohm series matching section. Three half waves will resonate higher than you would expect because the center half wave doesn't have to contend with end effects. To calculate the length of a three half-wave dipole, divide 1380.6 by the frequency in MHz. Five half waves is found by dividing 2316.6 by the frequency. To use a 3 half-wave antenna on 15 meters, the 70-ohm matching section needs to be 7 feet 7 inches and the antenna needs to be 64 feet long for a good match. It will be just a little long on 40 meters. When using a 40-meter dipole with a 15-meter quarter-wave matching section, it will still have acceptable SWR on 40 meters.

All Band Random Length Dipole

A random length of wire cut into two pieces can be used as a dipole, and it will radiate efficiently. It has to be at least a half-wave length on the lowest band you want to work. It looks the same as the all-band dipole and is the same, except it is not resonant on any band.

The random length dipole is being described here to emphasize that the radiating part of an antenna doesn't have to be resonant. Because it will have a feed-point impedance that is unusual, it must be fed with ladder-line a tuner, and a balun.

Since you are using a tuner, it can be used on multiple bands. If you make it very long, it can have gain over a dipole. For example, if it is four wavelengths long, it will have 3-dBd gain. As you move to higher bands, the electrical wavelength of the antenna increases, and each higher band will have more gain.

A half-wave antenna radiates perpendicularly to the plane of the wire. As you move to higher bands, this antenna begins to show some gain, and instead of two lobes of radiation, the two lobes split into four lobes and the pattern resembles a 4-leaf clover. As you make the antenna longer, the four lobes move nearer the to the ends, the gain increases, and there are minor lobes of radiation between the major lobes. These minor lobes make it possible to work in all directions. The longer the wire, the closer the antennas major lobes radiate bi-directionally toward its ends.

The problem with using a random length of wire for this antenna is you may find that because of limitations of your tuner, you may not be able to tune a particular length of antenna on some bands. Certain lengths will tune all bands and one of those lengths is 135 feet. That particular length will be nearly resonant on all bands of 80-10 meters. Resonance only makes it easier to tune, but it has no effect on efficiency.

We'll stop here, and pick up next month with this discussion.



FIELD DAY 2015
JUNE 27-28th
LaPORTE COUNTY AMATEUR RADIO CLUB
INVITES YOU
CQ CQ CQ COME ONE COME ALL

EVENT SCHEDULE
FRIDAY (26th) Early Campers - Pizza Party / Camp Fire
(all pitch in)
SATURDAY (27th) Radio Setup 10am
CAR SHOW - Afternoon & Evening
EVENING COOK OUT (Bring side dishes)
SUNDAY (28th) BREAKFAST - TAREDOWN 12pm



LOCATION: TOWER SITE US 35 & SCHULTZ ROAD
ALL TENTS & RV's WEST & SOUTH OF THE TOWER
RV's contact KA9PGC or N9ZIP for location
FIELD DAY CALL SIGN W9LY

Bring your own drinks for three days.



Calendar of Events



GET ON BOARD
JOIN IN THE FUN
WITH AMATEUR RADIO

LaPorte County Amateur Radio Club Meeting Calendar for 2015

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Meeting	19	16	16	20	18	15	20	17	21	19	16	TBA
Location	LP	LP	LP	LP	TS	TS	TS	TS	TS	LP	LP	TS

LP= LaPorte Knights of Columbus TS= Tower Site, U.S. 35 & Schultz Rd.

FIELD DAY
JUNE

FOX HUNTS

LIGHT HOUSE
WEEKEND

HESTON

JOTA