



LAPORTE COUNTY / HARBOR BEAM MAY 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
May 18th
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**

FOX HUNTS

WEATHER NETS

WELCOME



**TO
THE
LaPorte
County
Amateur Radio
Club**

lpcarc.org

LaPorte County / Harbor Beam

PAGE 3

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.**



WEATHER NETS

Once again, it's spring and we start to think about storms and weather nets. Weather Nets will generally be held on 146.970 MHz, the W9LY repeater. If we lose power and the generator fails, Weather Nets move to 146.610 MHz, the K9JSI repeater. If both should fail we move to 146.520 simplex.

With the W9LY repeater going digital, all weather nets will be Analog. Keep in mind, others with scanners listen to our weather nets. We will be using our current controllers for the Analog side of the repeaters, so our weather watches, warnings and alert tones will remain the same.

When the National Weather Service issues a weather watch, we try to get the Watch on the repeater, as soon as possible. This is simply message that airs "WEATHER WATCH". If you hear this, please be alert for changing weather conditions, and weather nets can open at any time. When a weather net is open, the repeater will message "WEATHER NET" and the courtesy tone will change. Any warnings will be posted but the NCS. During active warnings, we ask that everyone holds all but emergency traffic. During warnings, we will try to get information out, as to locations and directions of travel. We also need to receive reports of damage, or emergency help.

If you check into a weather net, you must check out. Your safety is number one. Do not go into damage areas unless directed too. If you are mobile, be alert for down power lines. Always let the NCS know where you are.

The National Weather Service needs your reports. The need to know what is happening at ground level. The NCS will relay your reports to the NWS. Your reports can mean the difference in a warning being issued or not. Your reports can save lives.

During weather nets, don't tell the NCS that it's raining. No one cares!!!!

What the NCS needs is Time, Event, and Location. When giving your location please use major roads, such as 2 miles East of I-80 and US 35. Once we get that, you can add such information just east of US35 on Schultz Road.

Report the following.....

HAIL ANY SIZE

WIND GUSTS greater than 50mph.

Wind or Lightning Damage

Flooding

Tornado

Funnel

Wall Clouds - (IF IT DON'T SPIN, DON'T CALL IT IN)

Your Safety is more important than a weather report. Always know the current weather situation near you. Always have means of communications. Always have an Escape Route in mind. Think of WHAT IF! Where can I go to escape, or seek protection.

The past few years have been quite. Just remember, the next big storm is not IF it will happen, but WHEN it will happen.

ARE YOU READY?

LOOKING FOR A NET

If you enjoy checking to nets, and you like to follow them, Net Logger now has new version out, 2.9.13. Net Logger is free program, you can see who has checked in. You can send text messages to those logged on and so much more. This year we are going to run Net Logger on our Weather Nets. It's another way to share information, track who has checked in.

Net Logger can be found at netlogger.org

It's a free application. A lot of HF nets use it, and you can what nets are running and where you can find them.

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 than 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..

Brats

Hotdogs

Potatoe Salad

Pop

MEAL DEAL \$5.00

(Brat or dog, Salad, Pop)

Brats 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 best place to insert a tuner is up at the antenna feed-point. However, if it is placed there, you won't be able to reach the tuner's controls. Therefore, it is more practical to place it between the transceiver and the shack-end of the antenna feed-line. A piece of 50-ohm coax connects the radio to the tuner. With the tuner located in the shack, adjustments can be made. Remote automatic antenna tuners can be placed at the antenna's feed-point, but the disadvantage of them is that the ones available today will not handle high power.

A coax-fed dipole and a tuner should not be used to feed an antenna on its even harmonically related bands. The even harmonics are 2, 4, 6, etc, times the fundamental resonant frequency. If an 80-meter antenna being fed with coax through a tuner is used on 40 meters, it will put out a weak signal because the SWR will be around a hundred to one.

Coax has a tremendous loss with SWR this high. Only a few Watts from a hundred-Watt transmitter will reach the antenna. However, you will be able to make contacts with those few Watts. If you want to use any antenna having high SWR, ladder-line has much less loss than coax. If you feed an 80-meter dipole on 40 meters using ladder-line and a tuner, it will only be slightly less efficient than a half-wave 40-meter coax-fed resonant dipole. However, the SWR will still be high between the tuner and the antenna, but this doesn't matter since ladder-line has an insignificant loss. Since the feed-point impedance will be high, the SWR will only be about 9:1 in the ladder-line because ladder-line is a high impedance feed-line.

Extremely short antennas may not work at all because of the above mentioned reasons. To reiterate, the extremely high capacitive reactance may make it impossible for its reactance to be tuned out and reactance prevents a transmitter from delivering power to the antenna. Even if you are able to tune out the capacitive reactance, tuning it out requires an inductor and most of the power will be lost in the inductor. Do not take the statement about the Conservation of Energy to mean you can put up any piece of wire and it will radiate your entire signal.

The Cause of Feed-Line Radiation

Contrary to popular myth, SWR in a feed-line will not cause it to radiate. The cause of feed-line radiation is unequal current in the two conductors of the feed-line. What are the causes of unbalanced current in a feed-line?

They are an unbalanced feed-line feeding a balanced antenna; the feed-line being brought away from and parallel to one leg of the antenna; the antenna not being fed in its center; and one leg of the antenna being close to metal objects. In coax, unbalance causes RF to travel on the outside surface of the coax shield, and the shield radiates. When everything is balanced, coax normally has current flowing on its center conductor and on the inside of its shield. The shield prevents it from radiating.

Ladder-line will also radiate when it is fed from the output of a tuner not having a balun. Baluns are discussed in the next section. Since the output of a transceivers tuner is unbalanced and feeding ladderline directly from your transceivers tuner, the currents in the ladder-line will not be balanced. When balanced, ladder-line has equal currents with a 180-degree phase difference, which produce waves that null each other out, and no radiation takes place. Hams mistakenly refuse to bring ladder-line into the shack because of a fear of feed-line radiation, but ladder-line does not radiate when balanced. The simple cure for feed-line radiation is to use a balun at the antenna feed-point for coax and a balun at the output of the tuner when using ladder-line.

Baluns

The word “Balun” is a contraction of “balanced to unbalanced.” It is pronounced “bal un” like “bal” in “balanced and like “un” in “unbalanced”. Many hams mistakenly pronounce an “M” at the end of the word making it “balum.” A balun transforms the unbalanced trans-

mitter output to a balance feedline such as ladder-line. It is also used to connect an unbalanced feed-line such as coax to a balanced dipole. In the latter case, the balun is located at the antenna feed-point and is constructed so the balun takes the place of the center insulator.

There are two kinds of baluns: voltage baluns and current baluns. They both accomplish the same thing. The difference in baluns is in the way they are wound. A voltage balun produces equal voltage with opposite polarity at its output. As its name implies, a current balun provides equal currents with opposite polarity at its output.

Running the coax through ferrite beads can make a 1 to 1 current balun. In addition, you can build a 1 to 1 choke current balun by winding 8 to 10 turns of coax around a two-liter soda bottle and placing the coiled coax at the antenna feed-point. Any balun is designed to “divorce” your antenna from the feed line. It is used to prevent common mode radiation of coax, which makes the coax to be part of your antenna. You want it to be able to deliver all your power to the radiator itself. A choke balun does this perfectly, without using any ferrite beads or toroids. In most cases common mode coax radiation does not occur when a balun is not used, but it is preferable to use one to be safe.

Other baluns provide a step-up or step-down impedance transformation. A 4-to-1 balun steps up the impedance four times.

It will transform a 50-ohm impedance to 200 ohms. This type of balun transformer is used at the output of tuners to increase the tuning range of a tuner 4 times. If a tuner without a balun can match 500 ohms, a 4-to-1 balun will increase the range of impedances it can match to 2000 ohms. Many hams think the 4-to-1 balun is used to match 50 ohms to 450-ohm ladder-line but it is not. It would take a 9-to-1 balun to match 50 ohms to 450 ohms, and it is not important to match the impedance to ladder-line. A balun should always be placed at the input end of ladder-line or open wire feeders to prevent feed-line radiation. When using ladder-line a step up balun is commonly used although a 1:1 balun will work.

OTHER TYPES OF DIPOLES

A Shortened Dipole Using Loading Coils
If you are unable to put up a full-sized dipole on your property, putting loading coils into the dipole could shorten the antenna. See section IX, part 1. A short antenna has capacitive reactance and the capacitive reactance can be tuned out with a coil. The overall length of the shortened antenna will be determined by the amount of inductance in the coil. Pre-tuned antennas of this type are available from at least one manufacturer. The main problem with loaded antennas is they are very narrow banded. If the loading coils are wound with small diameter wire, the coils may introduce unwanted loss into the antenna. Loading coils can also be found in shortened vertical antennas for high frequency (HF) mobile use.

All Band Dipole

In the figure below, a dipole is cut to a half wave on the lowest band you want to operate. Feeding it with ladder-line and a tuner makes it possible for you to work all the other higher bands. The only losses in this antenna system are the loss in the tuner and the very small loss in the ladder-line. This system is more than 90% efficient. As mentioned above the balun in the tuner will be used, or if your tuner doesn't have a balun, an external balun can be connected between the tuner and ladder-line with a short run of coax. Four-to-one baluns are the most commonly used ones for this arrangement.

The Sloping Dipole

A lower angle of radiation can be achieved by tying one end of a half-wave dipole to a high support and the other end near the ground. It is fed with or without a balun with 50-ohm coax. The sloping dipole will show some directivity and have low angle gain in the direction of the slope. More directivity can be gained if the dipole is strung from a tower, and the tower is acting as a passive reflector. The sloping dipole is mostly a vertically polarized radiator and it works well for DX. Since the sloping dipole is fed in its center, it does not need to be grounded to the earth as a quarter-wave vertical does. Make sure the bottom end of a sloping dipole is at least 10 feet above ground because like all dipoles there is high RF voltage on its ends.

The Folded Dipole

The B&W Company makes a folded dipole that claims to have a good match on all bands and it does. However, on the low bands much of the power is burned up in the resistor that connects the two ends together. The power going toward the ends encounter the resistor and is consumed as heat. All that power is lost and does not radiate, and no power is reflected back to the feed point making the antenna have low SWR. On the higher bands, a large part of the power radiates before it reaches the resistor and the antenna is moderately efficient on those bands. On 80 meters the 90 foot-long dipole model will produce a signal at least 10 dB lower than that from a resonant dipole. If you remember the single channel TV antennas used years ago, the driven element was a folded dipole. Folded dipoles are very broad-banded. That is the reason they were used for TV antennas since a TV channel is 4 MHz wide. When constructing a folded dipole, the formula for calculating the length of it is the same as for any dipole. The folded dipole consists of two parallel conductors with the ends tied together. The conductors can be spaced from less than an inch to more than two inches apart when made from TV ribbon or ladder-line. At the ends, strip the insulation back several inches, Twist the bare wires together, solder them, and run them through insulators. The feed-point is in the center of only one of the two parallel conductors.

The feed-point impedance of a folded dipole at resonance is close to 300 ohms resistive and can be fed directly with 300-ohm TV twin-lead or a tuner with its balun. This antenna was very popular years ago when coax was expensive and 300-ohm TV twin-lead was relatively cheap. A length of 450-ohm can be substituted for the twin-lead. An alternate feed method is placing a 6:1 balun at the feed-point and then feeding it with 50-ohm coax. The folded dipole will not radiate its second harmonic, so it is not good for a multi-band tuner-fed antenna. Another folded dipole type is the three wire folded dipole. We have seen this dipole only in books and do not know anyone who uses one. The feed-point impedance is 600 ohms resistive and is fed with homebuilt 600 ohm open wire feeders.

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



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