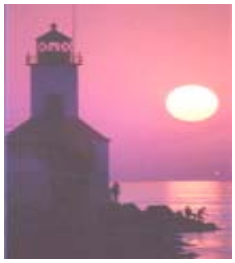


LAPORTE COUNTY / HARBOR BEAM FEBRUARY 2015

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

What's new?

WHO WE ARE

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:
John Rozinski
Ken Osborne
Troy Harrison
Ron Broviak
Mike Broviak

ARRL
The national association for
AMATEUR RADIO

AMATEUR RADIO
A BRIDGE TO FRIENDSHIP

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

MEETING NOTICE:

Next LaPorte County Amateur Radio club meeting is Monday February 16th 7pm @ THE KNIGHTS OF COLUMBUS

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
Ken Maynard, W8KRM
Dan Foster, KC9GFO
SKYWARN:
Ken Osborne, N9ZIP

"It is not the class of license the Amateur holds, but the class of the Amateur that holds the license."

News & Events

In This Issue

TO

THE

LaPorte County Amateur Radio Club

lpcarc.org

LaPorte County / Harbor Beam

PICTURE OF THE MONTH

It was snowing so hard, this was all you could see.

CLUB MEETING

Our next club meeting is Monday, February 16th at 7pm CST

Join us for a burger before the meeting

CLUB DUES

Once again, it's that time of year and your dues for 2015 is being accepted.

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 dues can be paid atthe Hamfest.
Your dues 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.

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.

Give us your Feedback

Breakfast gathering places are changing.

Once we decide on locations, we will let you know, when and where.
STAY TUNED.....

CABIN FEVER HAMFEST

CQ CQ CQ.....

It's time for the CABIN FEVER HAMFEST. Just like seeing a Robin, is a sign spring, so is the Cabin Fever Hamfest.

Come out of the shack, put your headphones down, and come out. You never know what you might find. You just might find that deal you have been looking for. You may find something new, you may find something old. That is what makes Hamfests fun. Of course, seeing old friends, or meeting someone you talk too, on the radio, but never met.

Maybe you want to upgrade. We will VE Testing. The Section Manager for ARRL will be there to answer your questions. Alot of differnet vendors will be there. Of course, you can pay your club dues, or become a member. Oh did I mention food? We'll have some good things to eat, so you can sit down with some old friends, have a cup of coffee or some lunch.Our Hamfest has something for everyone.

But like any event, we need your help. We need help on Friday night for early set up. We need help at the front door, we need help in the consessions. We also need VE's to help with testing. At our next meeting, we'll be finalizing all of the plans.
.....We need your help.

GOING DIGITAL?

Our club, might be hencing our repeater system, and soon one of our repeaters might be going digital. Members have been looking into upgrading, and enhancing our system. We are also exploring of linking one of our repeaters with our other repeaters, in the region, to expand coverage and usage. 2015 could be an exciting year, when it comes to our repeaters.

We will more information, as events unfold.

SKYWARN NEWS

Spotter Training for LaPorte County will be held on February 25, 2015. Location
Michigan City Hall
100 E Michigan Blvd (Lower Level - EOC)
Michigan City, IN 46360
at 6:30 CST.

If you are planning to attend, please fill out the on-line registrion form.

http://laporte-in-spotter.eventzilla.net/web/event?eventid=2139052705

or visit the NWS webpage.

Spotter classes are held once every two years. All spotters should plan on attending.

Meeting of the LPCARC on January 19, 2015, was called to order by President Brian Salzer at 7:03 pm with the Pledge of Allegiance.
Minutes of the November 17, 2014 were read. Motion was made by Ron to accept the minutes as read, seconded by Ken, motion carried.
Treasurer's report by Ken.
End of year Profit & Loss report was given.
Ron made a motion to accept the Treasurer's report as read. Seconded by Bob Smith motion passed.

Ken presented the Amateur of the Year to President Brian Salzer.

Michael Doubl from Michigan introduced himself.

New Business
Carlos recommended a Yaesu DR-1X equipment program. Discussion of the discounted price of $500.00 to receive the Analog Digital equipment originally priced at $1700 at a discount.
Mike suggested that the profits from the sale of Bao Fung radios at the Hamfest be used to purchase the Yaesu DR-1X for the club.
We could discuss the purchase of the Yaesu at a board meeting.
Motion to table the discussion until next month by Ron, Dave seconded. Motion carried. Ken reported theft of club cabinet at the repeater site. The tools were taken out of it and the cabinet was removed. The question was did the National Weather Service do this thinking it was their cabinet. Discussion of putting up a camera to monitor the tower itself.
To date we have had a poor response to the mailings for vendors for the Hamfest. President Brian Salzer will print the labels for cards to be mailed to hams in the next week or so.
Mike has 1 Bao Feng radio as a door prize. And 2 others to be sold at the Hamfest. Ron brought some QSL cards the club has received as well as ARRL information and frequency spectrum charts.
President Brian Salzer was able to get Gold Medal Embroidery to come back this year.
Motion was made to adjourn by Ron, Karen seconded, motion carried.
Next meeting will be February 16th at 7:00 at the Knights of Columbus hall.
Respectfully submitted,
Barbara Cave, Secretary

NOW YOU KNOW

Last month we started a new series, of NOW YOU KNOW. This month we pick up where we left off.

E-layer propagation is not well understood. Being at a lower altitude than F layer, the E layer is responsible for summertime short skip propagation on the higher high frequency bands. The skip zone is around 1000 miles, but at times when the E-cloud covers a wide area in the summer, double hops can be seen. A double hop occurs when the signal reflects from the ionosphere, then returns to the ground, reflects from the ground back to the ionosphere where it is reflected back to the ground. A double hop can propagate the signal 2000 miles or more. The E-layer forms mostly during the day, and it has the highest degree of ionization at noon. The E layer like the D layer disappears at night.

The F layer is the highest layer and it is divided into two levels: F1 and F2. At night the F1 and F2 merge into one.

Since the curvature of the earth averages about 16 feet every 5 miles, an object 5 miles from you on perfectly flat earth will be 16 feet below the horizon. Because light travels in straight lines, you cannot see objects beyond the horizon. Radio waves travel in straight lines, but there are ways to get them beyond the horizon. This is referred to as propagation.

Ground-Wave Propagation

Ground wave works only with vertical polarization. One side of the antenna is the metal vertical radiator and the other side of the antenna is the earth ground. The surface wave in the air travels faster than the part of the wave flowing through the ground. The surface of the earth is curved like the curved part of a racetrack. On the curved track, a car on the outside of the track has to travel faster than the car on the inside lane to stay even, and the two cars travel in a curved path. Although the wave in the air travels faster than the wave on the ground, the two parts of the wave cannot be separated. Because of this, the radio wave also travels in a curved path that follows the curvature of the earth.

The AM broadcast stations use ground wave propagation during the day and skywave propagation at night. Since radio waves at lower frequencies conduct better through the ground, an AM broadcast station on 540 kHz will be many dB stronger than a station on 1600 kHz, if both run the same power.
This fact is important in understanding why ground mounted verticals do not work as well at high frequencies as they do on the broadcast band.

Direct Wave or Line of Sight Propagation

Antennas located on high structures can "look" over the horizon and "see" the receiving antennas. Because refraction is involved, direct waves travel 20% farther than light waves due to scattering of radio waves by the environment. Trees and other foliage are invisible to HF radio waves. Direct wave propagation is possible at all frequencies, but this mode of propagation is seldom used on our high frequency bands, but it is the usual propagation mode used by repeaters and others on VHF and UHF. If you watch TV on an outside antenna you are receiving the signal by direct wave propagation.

Propagation by Refraction

Refraction occurs when the lower part of a wave travels slower than the top part of the wave because the wave is passing through two media. These media can be two layers of air at different temperatures or they can be air and a solid. One form of refraction is caused by a radio wave passing over a hill or ridge being bent as it passes over the obstruction. This is known as "knife edge refraction." Another form of refraction occurs when layers of air of different temperatures bend the radio waves around the horizon. This is called tropospheric ducting. This mode of propagation makes long distance contacts possible at VHF frequencies. Tropospheric ducting does occur on 10 meters and lower frequencies and is noticeable when other forms of propagation are absent. On high frequency bands, many hams mistakenly call tropospheric ducting and direct wave "ground wave."

Skywave Propagation

Skywave propagation occurs when radio waves are reflected from the ionosphere. Practically all HF communication is done by skywave. In the ionosphere, the waves are really refracted twice, and they just appear to be reflected. The reflections are frequency sensitive, meaning each ham band reflects differently from the others. Low frequencies, such as 80 meters, reflect mainly from the lower levels of the ionosphere and the reflected signal comes nearly straight back down. This causes 80 meters to propagate to points from local out to more than a few hundred miles in the daytime. At night, when the D layer and E layer are absent, signals striking the ionosphere at lower angles may propagate many thousands of miles on 80 meters.

On the bands from 20 to 10 meters, high angle signals pass straight through the ionosphere and do not reflect back down to the nearby stations. The low angle signals on these higher bands reflect from the ionosphere near the horizon and return to the Earth some miles away. The in-between region cannot hear the transmitted signals nor can you hear signals coming from this region. The in-between region is called the "skip zone." Only when the ionosphere is weakly ionized do you have a skip zone on 80 meters.

Another interesting type of skywave propagation seen on the higher HF bands is called chordal hop propagation seen frequently in trans-equatorial (TE) propagation, which is propagation crossing the equator. When this occurs, signals entering the ionosphere are trapped inside the F2 layer then they are finally refracted back to earth across the equator thousands of miles away. There is no propagation between the signal entry point and the exit point. This is skip in the extreme.

Skywave propagation sometimes produces an effect called "backscatter." What happens is the radio waves that strike the ionosphere, instead of only reflecting father away from the transmitting station, part of the signal reflects backwards toward the transmitting station. Stations that are too close to hear each other by direct wave can communicate by the backward reflecting waves. Both stations that communicate by backscatter must point their directional beam antennas in the same direction although their direction toward each other may be at some other azimuth. Backscatter will confuse front-to-back measurements of directional beam antennas. This is because, when you turn the back of the antenna toward the station you are hearing, you may be able to hear him on backscatter from a direction opposite from him.

Greyline Propagation

Greyline propagation occurs when the sun is low in the sky near dawn or dusk, although we have seen greyline propagation occur as early as two hours before sunset or as late as two hours after sunrise. It is often used to work stations on the other side of the world on 160 and 80 meters. For example, at certain times of the year when it is approaching sunset here in the States, the sun will have just risen in Asia or Australia and vice-versa. At that time, radio waves propagate along the semidarkness path that encircles the Earth called the greyline. Both locations must be in the greyline in order to make 2-way contacts. The tilt of the Earth makes the position of the greyline change as the seasons change. Greyline propagation occurs between any two locations for a brief period of a few weeks. Afterwards, different places fall into the greyline. For several weeks in the fall of the year, an interesting example of greyline propagation occurs in the southeastern part of the U.S. On 3915 kHz, the BBC outlet in Singapore can be heard for about an hour before sunset coming in by greyline propagation. Stations to the east hear it before we do. Stations farther to the west can hear the fading signals after it fades out here because the greyline moves as the earth rotates. For those hearing it, the signal fades in, it peaks, and it slowly fades out.

Long Path Propagation

Long path propagation occurs when signals propagate the long way around the world. It can occur on any band. It usually occurs from stations on the opposite side of the world from you. You can work South Africa via long path by beaming northwest early in the morning on 20 meters.

When this happens, you are working him long path through the nighttime side of the earth. Since at all times half the Earth has daytime and half the Earth has night, long path propagation is determined by whether the signal is propagated through the nighttime path or daylight path.

STANDING WAVE RATIO

A standing wave ratio bridge is used to measure the standing wave ratio, or SWR. SWR is an indication of how well the radiating part of an antenna is matched to its feed-line or how well the tuner is matching the antenna system. Most amateurs pay far too much attention to SWR. An SWR reading below 2:1 is acceptable, because the mismatch is so small that the feed-line loss can be ignored. If you are using a modern transceiver, its power may fold back to a lower power output above this SWR level.

When you have mismatch between the feed-line and the antenna, part of the power feeding the antenna system reflects back toward the tuner and the transmitter. The part of the power going toward the radiating part of the antenna system is called forward power. The part reflected back down the feed-line is called reflected power. The larger the mismatch the larger the reflected power will be.

If the feed-line and antenna are not matched, waves traveling toward the radiating part of the antenna system meet the waves being reflected back down the feed-line. The waves interfere with each other, and at certain points along the feed-line, the amplitudes of both waves combine. This will result in a current maximum to be found at that point; and at that point, the current will appear to be standing still. The length of feed-line and the frequency will determine where this point occurs. At another point, the forward and reflected waves interfere, and they subtract from each other.

At that point, there will be a current minimum. If you could visualize this phenomenon, you would see a series of current maximums and minimums standing still along the feed-line. This is why we refer to them as standing waves. At different points along the feed-line, where you have high current, you will have low voltage, and where you have low current, you will have high voltage. At any point along the feed-line, multiplying the voltage times the current will equal the power in Watts. When the feed-line is matched to the antenna, current and voltage remain the same all along the feed-line because there is no reflected current to interfere with the forward current.

In measuring SWR at the transmitter, you need to realize that feed-line losses affect the SWR readings. If the feed-line losses are high, much of the power reflecting back from the antenna will be lost, and the SWR reading on the meter will indicate it is lower than it actually is. If a feed-line is so lossy that it consumes all forward and reflected power, it will measure an SWR of 1:1.

There is a myth that reflected power is burned up as heat in the transmitter. The reflected power coming back down the feed-line sees an impedance mismatch at the transmitter or tuner and it reflects back up again. The reflected power does not get back into the transmitter. Because the reflected power reflects back and forth, the radiating part of the antenna system absorbs most of the power being reflected back up each time. All of it eventually is radiated except for the power lost in the feed-line. The losses in a real feed-line will burn up some of the power on each pass. This is why the feed-line loss increases with SWR.

Built-in tuners are found in most modern transceivers. If yours doesnt have one, then you can use an outboard tuner to give the transceiver a proper load. The place you want a 1:1 SWR is between the output of a transceiver and antenna or between the transceiver and the input of a tuner in order for the transmitter to deliver its maximum power. Because built-in tuners are in most modern transceivers, many hams use them to match antenna systems having high loss.

REAL ANTENNA SYSTEMS

The ideal antenna system will radiate 100% of your transmitter power on all bands without a tuner and in the direction you want to work. Such an antenna system does not exist. Many new hams succumb to antenna advertisements making claims that are exaggerated. No antenna will have low SWR, work all bands without a tuner, and radiate efficiently at the same time.

When you choose an antenna, you must decide how much loss you can accept. DXers and hams that work weak signals at VHF frequencies try to eliminate as much loss as possible. If your contacts are going to be made under good band conditions and without much interference, you can get by with high losses. In that case, coax-fed antennas used on bands where they are not resonant will allow you to make contacts. You can be greatly surprised by how little radiated power can be used to make contacts under ideal conditions. If you want to make contacts regularly under changing band conditions, you will want to eliminate as much loss as possible and use antennas with gain. Lower loss will enable you to hear weaker signals. Remember that all antenna systems have compromises.

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

HAMFEST

Saturday, February 28, 2015

7:00am-1pm CST
LaPorte Civic Auditorium
1001 Ridge St, LaPorte, Indiana

General Admission $7.00
Talk-In 146.610 (131.8)

FREE PARKING

Food Concessions

VE TESTING 9am

Door Prizes

Vendors & Tables
Tables Reservations Contact
cabinfeverhamfest@gmail.com
PHONE (219) 575-8146

Tables $15.00/per
Electric $5.00 extra
per Vendor (Limited Access)
ADVANCE RESERVATIONS MUST BE PAID IN ADVANCE BY FEB. 7th
No Refunds
Reservations can be mailed to:
LPCARC
PO BOX 148
Michigan City, Indiana 46361
CABIN FEVER HAMFEST
is sponsored by the
LaPorte County
Amateur Radio Club

Visit http://lpcarc.org/hamfest for updates and information

Calendar of Events

GET ON BOARD
JOIN IN THE FUN
WITH AMATEUR RADIO

LaPorte County Amateur Radio Club Meeting Calendar for 2014

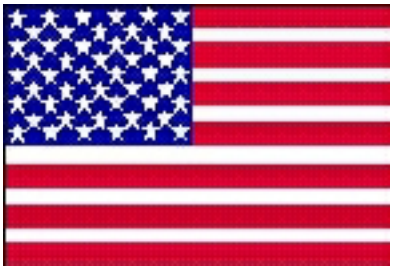
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Meeting	19	16	16	20	18	15	20	17	21	19	16	TBA
Location	LP	LP	LP	LP	TS	TS	TS	TS	TS	LP	LP	TS

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

Cabin Fever Hamfest

MORE EVENTS ARE IN THE PLANNING
STAGE, WE WILL HAVE THEM
HERE AS WE KNOW THE DATES
EVENTS ARE ALSO POSTED ON FACEBOOK

Give us your Feedback



As always, we need your feedback.
Do you know of an event coming up, Do you have some news of interest, or just like to commentendar on our news letter.
Give us you feed back!
You can reach the News Team @ info@lpcarc.org

ADVERTISMENT