

Big Rapids Area Amateur Radio Club

January 2011

PO Box 343 Paris MI 49338 Pres. Jim Woolen Web Page: www.braarc.net Editor: Phil – phildolly@power-net.net

Inside this Issue:	Presidents Note 1	Dec Meeting Min 2	Announcements 2	Brain Teaser 2
Treasurers Report 4	Membership Form 5	Weather Words 6	KB8NU 8	Tech Corner 9



President's Message

Wow! What a good time all 22 people had at the pot luck on December 3rd. There was lots of food and an opportunity for

fellowship. It was heartwarming to see everyone enjoying themselves. My thanks to all who helped – without a team effort, we could not have had such a wonderful event. The “white elephant” sale produced a few dollars for the club.

On a note of sadness during this time of joy and celebration, I spent the last eight days in a hospital room in Chattanooga (TN) with my mother who had renal failure. It is possible that cancer returned from last year and was causing the kidneys to fail, but they did not think an 87-year-old woman in such a frail state would survive the biopsy attempt. She did have two dialysis treatments on Tuesday and Wednesday which really improved her motor functions.

On Thursday, she was lucid, lively, and enjoyed eating her lunch. I will always treasure her smiling while she was devouring every last morsel of that fried catfish. She kept saying that that was the best catfish she had eaten in

a long time. We laughed a lot together that day! We shared a lot together in our conversations!

Unfortunately, she did not want her supper when it came. When I left that night to return to her apartment just 40 miles away, she was in reasonably good spirits.

Friday was a totally different scenario. Mother was not able to sit up anymore and she required oxygen. When she and I talked with the doctor that morning about options, she said she wanted to “go home to be with her husband of 64 years.” Even if she had agreed to dialysis, she might not have survived the surgery to place a tube in her neck to have continuing dialysis – and, dialysis would be required three times per week and she would only have four to six months to live. She chose the best option for her!

When I left Sunday morning to return to Big Rapids, she was resting comfortably. My oldest daughter, who lives in the Atlanta area, was with her. The doctor said it would be a matter of hours or 1-2 days before she is gone. By the time you read this message she probably will be in heaven with her maker.



I am not trying to make everyone depressed with this writing! My intent is to make sure we all realize how fragile and short life is and spend every possible moment with your loved ones, your family, and your friends. I will always treasure the time I spent with mother in the hospital and that special day on last Thursday we shared together. Mother was a gentle and special lady who endured all of the poking, prodding, and sticking with such graciousness and dignity. All of the medical staff was amazed at how she always thanked them whenever they provided a service or treatment to her. May we all have that grace when it is our time!

I hope all of you have a great Christmas with your family and friends. This is the time of year we should count our blessings and remember "the reason for the season." It is also another time to enjoy good food and forget about counting calories or whatever during the holidays.

I hope to see you at the next club meeting on Thursday, January 6th at the Big rapids Department of Public Safety. May God bless you and your family! I will be traveling back to Tennessee on Wednesday (22nd) to make arrangements for my mother's burial. Please keep us in your prayers and thoughts.

73s,

Jim

ANNOUNCEMENTS

Sat, January 1, 2011, 9:00am – 10:30am
at Sharon's restaurant in Rogers Heights. Talk-in on the 146.740 Big Rapids 2-meter repeater for anyone needing directions.

Thu, January 6, 2011, 7pm – 9pm

435 N. Michigan Ave, Big Rapids, Mi 49307
Next BRAARC club meeting, Thursday at 7 p.m. at the Big Rapids Department of Public Safety Building, 435 N. Michigan in Big Rapids.
Presentation Topic: CERT - Community Emergency Response Team

Sat, January 8, 2011, 9am – 10am

<http://kc8yzp.angelfire.com>. See website for information: request pre-registration 7 days in advance for testing. Testing in Canadian Lakes. See website for details, maps and contact points. Thanks N8ERV VE

December Mtg Minutes:

Since the December meeting was our Christmas potluck and silent auction there are no minutes to report. See page 3 for photos of the evenings event.

Brain Teaser

Don MacConnel, WA4FRJ

This Month's Brain Teaser

The answer to last month's Brain Teaser didn't require any calculation but this one does. Please note that both trains start at the same time.

A hi-speed train leaves Detroit heading towards Chicago, traveling at 174 mph. At the same time another hi-speed train leaves Chicago heading towards Detroit, traveling at 215 mph. Chicago is 238 miles from Detroit.

How far are the trains from Chicago when they trains meet?

Last Month's Brain Teaser

A hi-speed train leaves Detroit heading towards Chicago, traveling at 174 mph. Exactly five minutes later, another hi-speed train leaves Chicago heading towards Detroit, traveling at 215 mph. Chicago is 238 miles

from Detroit. Which hi-speed-train will be farther from Chicago when they meet?

The train speeds and the five minute start delay don't have anything to do with the answer. When the trains meet they are both the same distance from Chicago since one started from Chicago.

Christmas Potluck



TREASURES REPORT BEGINNING OCTOBER 2010
06, 2010

ENDING DECEMBER

DEBITS (-)	DEPOSITS (+)	BALANCES
Recorded Balance as of September 08, 2010 \$3273.04		
10/11/10 Oct. Club Meet. 50/50 raffle		\$18.50
10/11/10 “ “ “ Donation by Bruce Werner		10.00
<u>11/04/10 McKay USPS Stamp purchase</u> \$44.00		
Issued Check No. 697 to McKay \$44.00.....	\$44.00	
11/04/10 Nov. Club Meet. 50/50 raffle		16.00
<u>11/08/10 FSU Copy Center</u> \$ 17.39		
Issued Check No. 698 to FSU Copy Center \$17.39.....	17.39	
11/04/10 McKay support@localender.com \$29.95		
11/05/10 McKay Parade Candy Walgreens 32.83		
11/09/10 McKay Garland Dollar Tree Store 8.48		
11/09/10 McKay 30inX60 Poly C/O prints 12.72		
<u>11/17/10 McKay 17' SANTA Menards</u> 8.48		
Issued Check. No. 701 to McKay Total \$92.46.....	92.46	
<u>11/15/10 AT&T telephone/repeater</u> \$26.09		
Automatic deduction from bank account \$26.09.....	26.09	
11/24/10 Woolan Holiday Evergreens Menards 17.60		
11/23/10 Woolan Winter Wonderland Staples 12.70		
<u>11/20/10 Woolan 3500 Watt Generator Menards</u> 377.08		
Issued Check. No. 699 to Woolen Total \$407.38.....	407.38	
12/03/10 White Elephant Sale		19.50
12/03/10 2011 Dues @ \$25 plus \$10 donation		35.00
12/03/10 2011 Dues @ \$25 plus \$5 donation		30.00
12/03/10 Celebrity Server at Crankers Oct. 12 th		192.48
<u>12/06/10 Check No. 700 to FSU Copy Center</u> \$12.20.....	12.20	
± T O T A L S	- 599.52	+321.48
3273.04		
-599.52		
<u>+321.48</u>		
B A L A N C E (December 06, 2010)		
\$ 2995.00		
J.O.Rick, Treasurer		



Keep up to date on the latest Amateur Radio News
Listen for Amateur Radio Newsline
 Every Tuesday night at 8PM on the 2 Meter Repeater

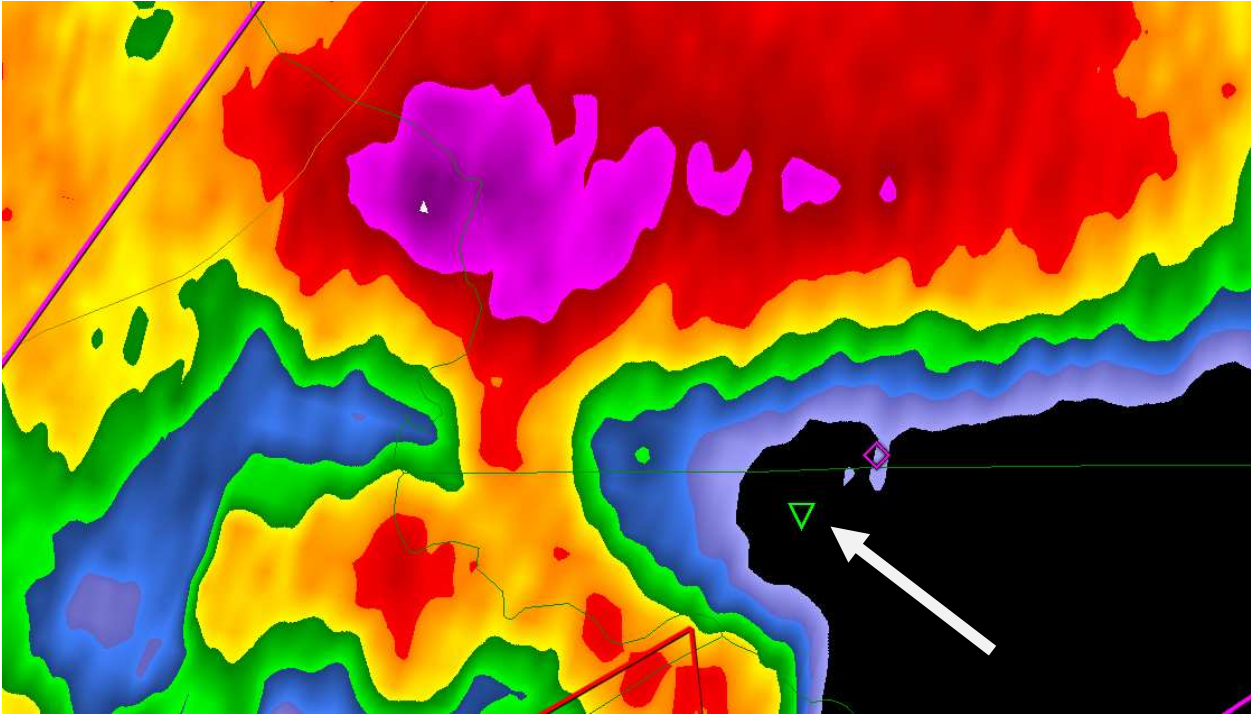
BRAARC MEMBERSHIP			
APPLICANT INFORMATION			
Name:			
Call:	Class:	Phone:	
address:			
City:	State:	ZIP:	Email:
ARRL Member: <input type="checkbox"/> Yes <input type="checkbox"/> No	Newsletter: <input type="checkbox"/> US Mail <input type="checkbox"/> Website – minimizes postage and printing costs		
SPOUSE INFORMATION IF JOINT MEMBERSHIP			
Name:			
Call:	Class:	Email:	
LICENSED CHILDREN			
Name:	Call:	Class:	
DUES / DONATION			
<input type="checkbox"/> Member (\$25) <input type="checkbox"/> College Student(\$12.50) <input type="checkbox"/> Youth(free if oldest licensed family member<18 yrs)			
<input type="checkbox"/> Club Patch _____ X \$5 each - The club patch supports the repeater systems operated by the club.			
<input type="checkbox"/> Donation – general support for the club. <input type="checkbox"/> Repeater Donation – supports club repeaters			
Total:			

Membership runs from January 1 to December 31 each year. Please submit dues by the regular February club meeting to prevent accidental removal from club roster.

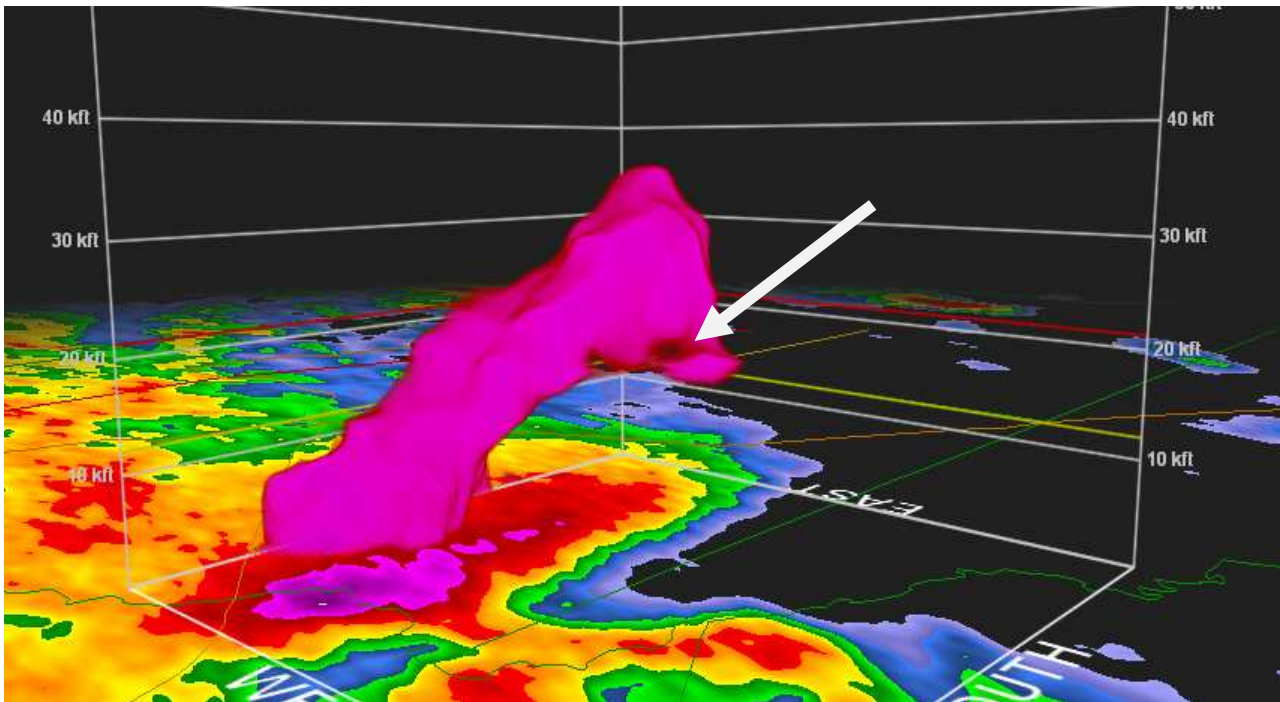
Weather Words

David KC8WGA

A couple of months ago the National Weather Service gave a series of talks covering Advanced SKYWARN topics here in Big Rapids. During one of the presentations I went to, GR2 Analyst was mentioned. GR2 Analyst is a program that allows you to view severe weather in 3D and 2D radar displays. I download the free trial version of GR2 and managed to save a couple of pictures of what a tornado looks like with the software. This tornado was down in the east central Texas area.



The triangle you see in this picture is the spot where the tornado is. This clearly proves the fact that tornadoes trail the leading edge of the storm, which in this case is the large pink and red area.



In this picture, if you look closely, you can see a round hole where the tornado is. The white arrow points right to it. With GR2 Analyst you can cut thru a storm and see how it looks in 3 dimensions, as this picture shows.

It Snows in the Ocean?

That's right. It snows in the ocean, according to the National Oceanic and Atmospheric Administration (NOAA). NOAA calls it marine snow. Marine snow forms as a result from plants and animals dying and decaying at the surface of the ocean and falling toward the sea floor. Not only does marine snow include decaying plants and animals, but fecal matter, sand, soot, and other inorganic substances. The reason why this decaying matter is referred to as "marine snow," is because it looks like white fluffy pieces. These "snowflakes" expand in size as they fall, reaching up to several centimeters in diameter. As this snow continues to fall it provides food for many creatures living in the deep ocean. NOAA scientists have measured the value of useable material in this snow and have found plenty of carbon and nitrogen for the scavengers in the deep sea to feed on. The material that is not consumed in shallower waters is added on to the mucky "ooze" covering the ocean floor. Roughly three-quarters of the ocean floor is blanketed with this ooze. It collects as much as 20 feet every million years and usually is about 948 feet thick, but can be almost 6.2 miles thick.



How would you like to clean this muck off your car in the morning?!

Is Ham Radio Dying?

By Dan Romanchik, KB6NU

If you've been around ham radio for even a year or two, you've no doubt heard or participated in the debate as to whether or not ham radio is dying. The question is as perennial as the grass.

Recently, this was a topic of discussion on the ARRL PR mailing list. Allen, W1AGP, the ARRL's Media & PR Manager, generated a chart to show that ham radio is NOT dying. It showed the number of licensees in the U.S. every year from 2005 to 2009:

2005: 661,000
2006: 655,000
2007: 655,000
2008: 662,000
2009: 681,000
2010: 694,000!

This chart as drawn is a good example of how you can lie with statistics. The y-axis started at 640,000, so the rate of increase in the number of licensees looked quite dramatic. Even so, the good news is that the number of licensees is quickly approaching 700,000, and should surpass that number shortly.

[[An image of this chart can be found at <http://kb6nu.com/wp-content/uploads/2010/11/chart1.png>, if you would like to include it in your newsletter.]]

Upon seeing this chart, Jerry, N9TU, did a little statistical analysis of his own. Of the 83 licensees in his zip code, nine are deceased and one has expired. There are four Novices, 36 Techs, 18 Generals, 5 Advanced and ten Extras.

From this data, he deduces, "If this is an average sampling of deceased members, expired members and club licenses, there are roughly 90,000 fewer licensees than shown in the data nationwide. I have no clue of the error rate involved with my data. Your results may vary." My guess is that his zip code is probably pretty typical, and that his analysis is essentially correct.

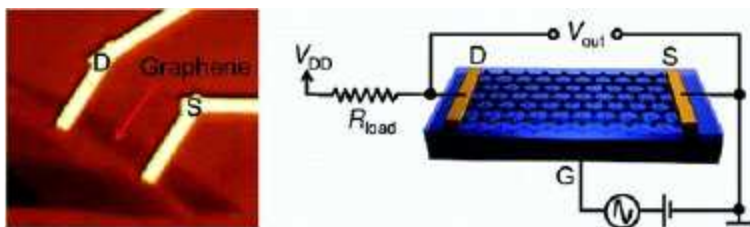
There's also the question of activity. It's my guess that nearly half of all licensees are inactive, and that if we could figure out a way to activate those hams, then we'd really be able to say that our hobby is not dying. It's something worth thinking about, but there's certainly no easy answer to this problem. As Yogi Berra is purported to have said, "If people don't want to come out to the ball park, there's nothing you can do to stop them."

Overall, though, I think the numbers are headed in the right direction. Ham radio is NOT dying. Let's all keep up the good work.

(Ed Note: There was no chart with this article)

Graphene single-transistor amplifier is a first (Oct 21, 2010)

Researchers from the University of California – Riverside and Rice University have made the first single-transistor amplifier from graphene. The device is better than conventional amplifiers thanks to the "ambipolar" nature of graphene, which means that it could find use in wireless and audio applications. It might also be used to design simpler analogue circuits for communications.



[Single-transistor graphene amplifier](#)

A single-transistor amplifier, which consists of one transistor and one resistor, is one of the most basic building blocks in analogue circuits. There are three types of single-transistor amplifiers: common-source, common-drain and common-gate. Each of these has different characteristics that depend on the small-signal voltage gain in the device ($\Delta V_{out}/\Delta V_{in}$). The common-source amplifier provides negative gain while the other two provide positive gain.

Different applications call for different types of amplifier, but the ideal device should be one that can be configured into more than one type after fabrication – something that is impossible to do with conventional silicon-based metal-oxide semiconductor field-effect transistor (MOSFET) technology.

Graphene amplifiers

Amplifiers made from graphene could come into their own here, say Alexander Balandin and colleagues. Graphene – a 2D sheet of crystalline carbon just one atom thick – could be ideal for future nanoelectronics devices thanks to its unique properties, which include the fact that it is an excellent conductor of electricity and heat. Transistors made from graphene also have a very high cut off frequency above 100 GHz and show low levels of noise.

Graphene is "ambipolar" too. This means that electrical current in the material can be carried by both electrons and holes, and the type of carrier utilized can be switched by simply applying a gate bias. This is somewhat different to conventional semiconductors, explains Balandin, where the type of carrier is pre-determined by the doping in the device.

"The fact that the type of carrier can be switched by the gate is reflected in the well-known 'V-shaped' current-voltage characteristic of graphene," he said. "We are capitalizing on this to achieve greater functionality from graphene transistors and use it in the amplifier design."

Triple-mode

The UCR – Rice University team made a "triple-mode" device, which means that the amplifier can operate in one of three modes (common-source, common-drain or frequency multiplication) depending on where exactly the transistor is biased in the V-shaped ambipolar curve. "The three points one can choose are some place on the left branch of the V, some place on right branch or on

the minimum conduction point where the branches meet," said co-team leader Kartik Mohanram of Rice. "Each operating point has different characteristics and we took advantage of the ability to switch between these bias points during operation when designing our amplifier."

Such triple-mode devices could lead to simpler circuits that show lower parasitics, have a larger bandwidth and consume less power. And being able to switch between the three modes this way will be important for "phase shift keying" and "frequency shift keying", processes that are widely used in wireless and audio applications, including Bluetooth, RFID and ZigBee.

The team now plans to employ more advanced top-gate transistors, which will allow for higher gain because of the much smaller gate thickness. Balandin and Mohanram's group has already built such transistors with low flicker noise, something that is crucial for graphene transistors in any analogue and communication application. "Now we have to put them to work in amplifiers," added Balandin.

"Our result is a major step forward in graphene technology because it marks the transition from making individual graphene devices to making fully fledged graphene circuits and chips. Clearly, there are several challenges ahead and the community as a whole is actively working on developing solutions."

About the author: Belle Dumé is contributing editor at nanotechweb.org (Contributed by Phil – KC8QOV)

