

THE

FEEDBACK

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April 2005

THE AMATEUR RADIO NEWSLETTER

Laurel Amateur Radio Club, Inc.

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Upcoming Events:

Day	Date	Time	Freq	Event
Wed	03/23	1930		Monthly Meeting @ Woman's Club of Laurel
Wed	03/30	2030	147.225+	On-the-Air Net
Mon	04/04	2030	147.225+	Laurel PVRC Net
Wed	04/06	2030	147.225+	On-the-Air Net
Mon	04/11	2030	147.225+	Laurel PVRC Net
Wed	04/13	1900		Social Gathering at Sullivan's Steak & Beverage
Mon	04/18	2030	147.225+	Laurel PVRC Net
Wed	04/20	2030	147.225+	On-the-Air Net
Mon	04/25	2030	147.225+	Laurel PVRC Net
Wed	04/27	1930		Monthly Meeting @ Woman's Club of Laurel

All 2100 147.540 simplex Informal Net / Rag-Chew

Note: 147.225 PL tone is usually off during nets.

Repeaters:

VHF: 147.225+ PL 156.7
UHF: 442.500+ PL 156.7

Simplex:

VHF: 147.540
UHF: 445.975

**Next Meeting:
March 23, 2005 1930 EST**

President's Rumbblings

Greetings and salutations, and many thanks to Kevin WV3D for doing my rumbling for me the past 2 months while I was under the weather.

I'd like to thank Mona NY7P for the very interesting presentation on Coast Guard communications at the last meeting. With that in mind, your Pres would like to hear any member who has an idea of some special activity for up coming meetings.

The cleaning out of the old club shack is moving ahead. Some of the equipment has been moved to the new location, the inventory has been mostly completed, and it is actually possible to move around without breaking legs. An antenna raising and re-raising party will be announced soon, so those available to help on or off the tower please let me know so we can plan.

We will have another board meeting the last week in March.

A foxhunt is a prospect for the first weekend in April.

Our next regular meeting is March 23th. Hope to see you at the next meeting.

73,
Joe, N3TZA

Meeting Program for March 23, 2005

Our program for this month's meeting will be a power point presentation and demonstration of Winlink2000 and Airmail by Doug Lindsey, KB3HER. Doug has become quite proficient about all things WinLink lately. He has been working with our ARES®/RACES group in Prince George's County to not only get the Telpac node (internet gateway) working on 2M and 440 at our county EOC, but has also been trying mightily to get our group to understand how to use Winlink200 in our emergency operations.

For those not familiar with Winlink2000, this is an email over radio packet program that RV'ers and boaters have been using for several years and the ARRL through ARES® is now promoting as one of our emergency communications tools. For instance, we can set up in a shelter with a laptop, TNC, radio and antenna and type up a list of shelter guests then email it directly to the person who needs it at the American Red Cross HQ. We can also pick up email from them returning to the folks at the shelter.

If all else fails, we can do our email over HF by connecting with one of several stations around the country that is equipped to receive and send PACTOR over HF and has an internet gateway capability. It's a little slower, but it does work.

Come on out for a great demo and PowerPoint discussion at the upcoming meeting.

Jim, WI3N

From the ARRL:

ARRL exhibits at National Emergency Management Association conference (Feb 19, 2005)



-- The ARRL promoted Amateur Radio at the National Emergency Management Association (NEMA) Mid-Year Conference February 12-15 in Washington, DC. With help from Maryland-District of Columbia Section Emergency Coordinator Mike Carr, WA1QAA, and Assistant Section Manager and Emergency Coordinator Jim Cross, WI3N (left in photo), ARRL Emergency Communications Course Manager Dan Miller, K3UFG, staffed an Amateur Radio exhibit booth at the gathering. The conference offered an opportunity for NEMA members--ARRL included--to discuss the many challenges facing the emergency management world, to share solutions, grow professionally, network with peers and strengthen relationships with partner organizations. NEMA also shared its views on emergency preparedness for all hazards with federal officials. Individuals and organizations involved in shaping the future of homeland security and emergency management offered presentations and forums. Many of the nearly 350 attendees representing federal and state emergency management and other agencies around the country visited the ARRL booth to complete a short questionnaire and discuss Amateur Radio with a focus on emergency communications. "This event provided excellent exposure to the larger emergency management community," Miller said. "Interaction with those representing many diversified levels of emergency management is a win-win proposition." Miller said the League's presence further established the League as a national point of contact to answer questions about Amateur Radio's emergency communication capabilities. At the same time, he says, it gave the League representatives a chance to hear the concerns of emergency managers for followup with local ARES teams. (Photo: Jim Cross, WI3N [left] chats with Bill Bishop, K7WHB, with Idaho's Bureau of Homeland Security.)

The K Index

In the middle of the contest you check your e-mail and one of your PVRC colleagues is announcing that the K Index is 5. “Oh boy, I wonder what that means. I know the bands are a little noisy, but what does that number 5 mean? How much worse can it get?” Here’s the facts.

K Index: A 3-hourly index of geomagnetic activity. Values range is from 0 to 9, extreme calm to extreme storm conditions, respectively. The K index is a measurement of the most disturbed component vector.

Geomagnetic Components: The northward and eastward horizontal components are the commonly referred to as H (Horizontal) or D (Declination) components and sometimes referred to as Flux. The terms are more easily understood in terms of vector quantities.

“Magnetic Field Vectors and Components”

Brian Richter, August, 1999

“The magnetic field at any point in space is a vector quantity. This means there is a direction associated with the field as well as a field strength. Consider the arrow below:



The direction of the arrow can be thought of as the direction of the magnetic field. The length of the arrow can be thought of as the strength of the field, i.e. the longer the arrow, the stronger the field. Call this length B.

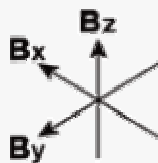
If I place set of axes on the arrow I can divide the field into two components of the field, namely the x component and the y component. Call these lengths B_x and B_y.



I can now describe the length of the arrow, or the strength of the magnetic field, in terms of the x and y components. Using the Pythagorean Theorem:

$$B = \sqrt{B_x^2 + B_y^2}$$

Now imagine that there exists a third direction, so that the arrow, B can be pointing out of (or into) the plane of the page. There is now a third component, namely B_z, which in our example is the length of the component stretching from the page outward to the tip of the arrow.



By exactly the same mathematics, I can now describe B as:

$$B = \sqrt{B_x^2 + B_y^2 + B_z^2}$$

The value B, is the strength of the magnetic field. B_x, B_y, and B_z are the three components measured by a three axis teslameter (magnetometer). A single axis measuring device will change its reading depending on which way the sensitive axis is oriented with respect to the direction of the magnetic field. To obtain a complete representation of magnetic field at any point in space, one needs not only the value of B, but the

direction, which can be expressed as the three components, Bx, By and Bz.

Some magnetic field sensors measure only one component of the magnetic field (Fluxgates and Hall effect instruments). These are referred to as single axis devices.

Other instruments measure only the total field amplitude (NMR, ESR). This is the quantity B above.

It is possible to combine three axis sensors to give three field measurements in a single probe package. These are referred to as three-axis devices.”

Magnetometer: An instrument used in the study of geomagnetism for measuring a magnetic element. For example, the magnetometer at the [Utah State University Bear Lake Observatory](#) is a three-axis fluxgate digital magnetometer manufactured by Narod Geophysics Ltd. It acquires eight three-component (XYZ) measurements per second, which are reduced to average H, X, Y, and Z component values each minute.

Geomagnetic Field Status Monitor: Graphic display of geomagnetic conditions available on the PVRC Web Site. Downloads Planetary [Kp Index](#) data at 15 minute intervals from the NOAA [Space Environment Center](#) FTP server. The previous 24 hours is analyzed and an appropriate level of activity is assigned as follows:



Quiet: the Geomagnetic Field is quiet (Kp 1 through 3)



Active: the Geomagnetic Field has been unsettled (Kp=4)

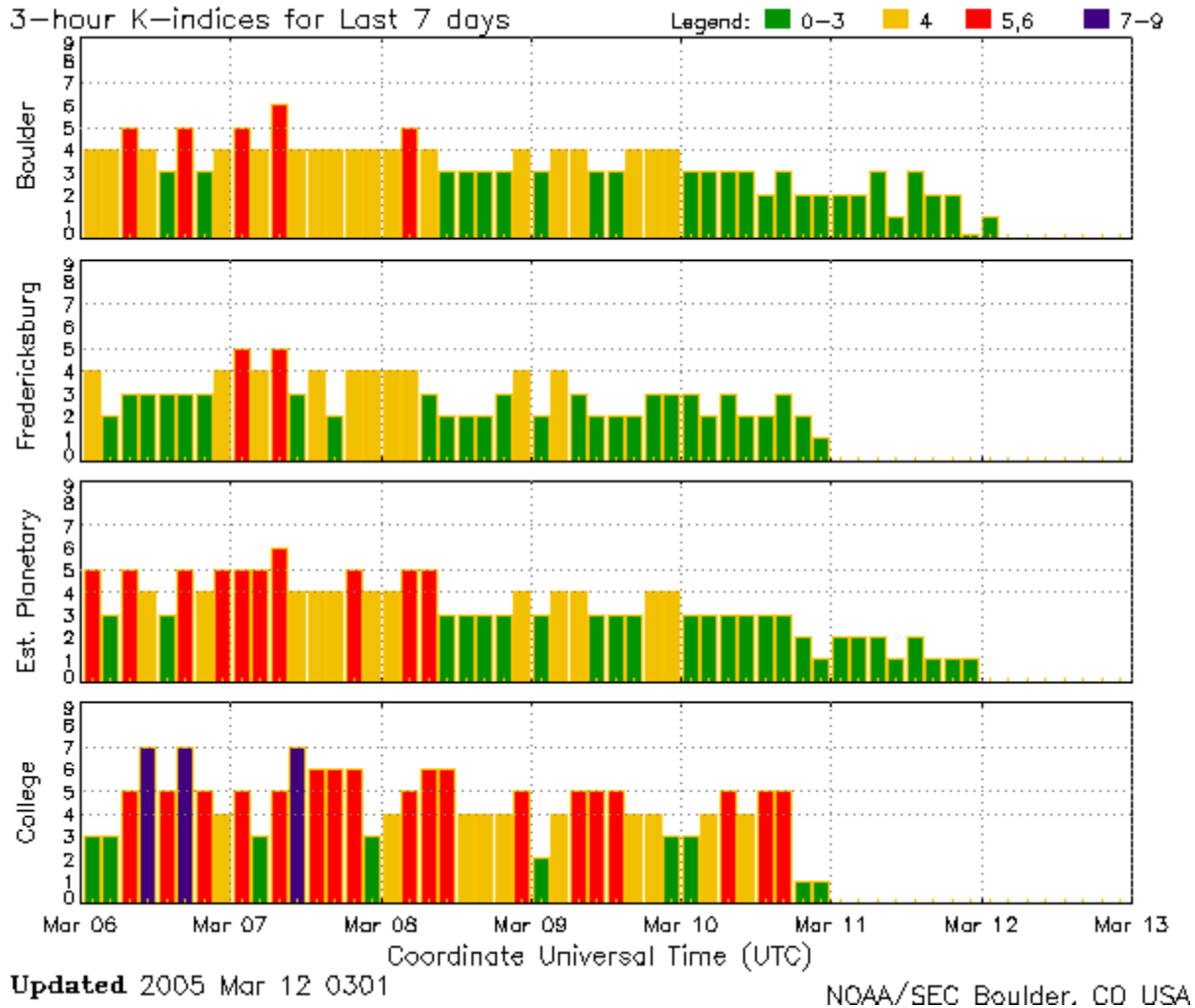


Storm: A Geomagnetic Storm has occurred (Kp 5 is a minor storm, Kp 6 and 7 are larger storms, and Kp 8 and 9 are major storms with radio blackouts likely.)

Kp INDEX. Estimated planetary K-index. This index is derived, at the U.S. Air Force Space Forecast Center, using data from ground-based magnetometers at Meanook, Canada; Sitka, Alaska; Glenlea, Canada; Saint Johns, Canada; Ottawa, Canada; Newport, Washington; Fredericksburg, Virginia; Boulder, Colorado; and Fresno, California.

Geomagnetic K-indices

<http://www.sec.noaa.gov/>



This chart is updated every 15 minutes at 1, 16, 31, and 46 minutes past the hour. Use the browser Refresh or Reload option to ensure the latest data is shown. Boulder, Colorado and Fredericksburg, Virginia are mid-latitude stations. College, Alaska is a high-latitude station. Estimated Planetary is a combined measure of several mid- and high-latitude stations.

K-index Warnings are issued when a Boulder K-indices of 4, 5, 6, and 7 or greater is expected. K-index Alerts are issued when the Boulder K-index reaches 4, 5, 6, 7, 8, or 9 in a 3-hour period.

73,
Bill, N3XL

DC Roadrunners Marathon

A goodly number of LARC members (who are also mostly ARES® members) and three non-LARC ARES® members participated in the President's Day marathon sponsored by the DC Roadrunners. We had a great turnout with a cool day. During the course of the 26 mile run, we only had to transport one runner (thanks Cynthia). Evonne, KB3KGC helped HD, K3HDM and Matt, N3JMK at Net Control in the recreation center. Spaced at strategic locations on the course were Dennis, KT3D, Toby, KB3BWR, Rich, AB3BQ, Larry, KD5ENP, Kenny, KB3BXT, Jim, N3XKJ, Cynthia, KB3KFZ and Jim, WI3N. I hope I included everyone. If I didn't, come to the meeting and chew me out! We do whatever it takes to get people to the meetings, even if it means leaving you out of the big thank you.

We used the 146.88 repeater, courtesy of the Green Mountain Repeater Association. They have always been kind enough to make their repeater available to us for this event and we certainly thank them for that. This race begins at 1030L and finishes up around 1530L. It is a qualifying race for some of the other large (in terms of runners) marathons around the country. We anticipate that we will be doing a 15k race for the DC Roadrunners on the Sunday before Labor Day again this year.

A very big thank you to all who took time from their day to help out. It couldn't be done without you. And the race directors expressed their appreciation for having our eyes on the runners and helping them run a safe race.

73, Jim, WI3N

Upcoming Events

April 2

Maryland State Convention. The place is Timonium Fairgrounds for the Greater Baltimore Hamboree and Computerfest sponsored by the Baltimore Amateur Radio Club. The ARRL Maryland State Convention begins Saturday morning at 0900 – 1400 in the Vista Room (next to the Exhibition Hall) with the ARRL Forum with Rick Linqvist from the League and other speakers. Be sure to make an effort to stop by and find out what's happening at the League and in the State. It's my hope that with some promotion we can realize a larger attendance. The LARC VE Team will also be doing the test session on Sunday morning. For a schedule of the programs and times, please go to www.gbhc.org.

April 23

ARES® Institute. Our bi-annual ARES Institute will be held at the Fire Services Building in Landover Hills. This is well worth attending even if you're not an ARES® member. Dan Miller, K3UFG, from the League will be giving an overview of the three levels of Communications Courses offered online by the ARRL. There will be Skywarn Basic course. We'll also have a speaker who has used Winlink2000 with the volunteer doctors who go to Honduras and Doug Lindsey, KB3HER will do a practical demonstration and explanation of Winlink2000. Finally, there will be a round table discussion on volunteers. There will also be a "science fair" with lots of neat gadgets you can make and things for your "go kit". Go to www.ncacdc.com to sign up and review the items on the agenda.

May 1

Montpelier Festival. We'll be meeting at the gate off Muirkirk Road at Montpelier to help with the vendor set up and shadowing the key people during the setup period. We have helped with this for

many years and our assistance is greatly appreciated by the organizers. Eight members would be about right for the event. We start at 0800 and finish up around 1200. More discussion about this topic at the meeting.

May 7

Main Street Festival and Parade. This requires two separate efforts on our part. We'll be setting up our tent (I guarantee it will be there this year) at 0630 in front of the Woman's Club for the information and announcement part of it. Then we'll begin lining up the parade on 6th St for a kick off at 0900. This operation requires some of us to attend the planning meetings at the Board of Trade (usually during the day) and some parade meetings (we're going to do those in the evenings). If anyone can help me with the meetings, please let me know. It is really a good idea to have the organizers get to know more of us and for more than one of us to be involved in the planning. We'll also need lots of help in the morning shadowing the key people as the vendors set up and 8-10 helpers with the parade set up. As John, N3GXA pointed out on our net, we were way too short on help from the parade end to event close down at 1600. This is really our premier event of the year, requiring the most people and really puts us front and center of the movers and shakers in town.

All four of the events mentioned allow opportunities for your personal growth in this amazing hobby. Two individual opportunities and two group opportunities are available to you in the next two months. Our club (and I emphasize the word *OUR*) has created a lot of good will in the community by consistently making our skills in communications available for public service events in and around our town. I'm sure that one of the reasons that we've been able to have a club shack in a city building and are now moving to a much nicer facility is because of our willingness to lend a hand at these public service events. Events such as the Main Street Festival, Montpelier Festival, the Pallotti 5K Run, the Relay for Life for the American Cancer Society, the Fourth of July Parade, the River Fest, and the Christmas Tree Lighting and Parade are all part of the rich fabric of life in the small town of Laurel. LARC Presidents and boards of directors change, members come and go, but LARC as a public service oriented club has been consistent over the years, providing the communications that is the oil that keeps the machinery from binding up. Our community definitely notices and appreciates our contributions. Thanks in advance to all of you who will be giving up some of your valuable time to serve our community.

73,
Jim, WI3N

Editor's Note:

First, let me say thank you to Jim, WI3N and Bill, N3XL for their contributions to this month's edition of *The Feedback*. This would be a pretty thin edition without their excellent articles!

The printed version of *The Feedback* is in black and white. You can see Jim's picture and the graph in Bill's article in color in the PDF version on the Club website, <http://www.larcmd.org/>

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