

# The Radio Hill Gazette

April 2015

## Table of Contents

From the Editor.....	2
SDR, CW skimmer and RBN.....	3
Wave of popularity.....	4
Raspberry Pi and Sky Pi Project.....	8
April Presentation: Tuning Diplexers.....	10
A Call for Programs.....	11
Trading post, things for sale or trade.....	12
Calendar and things to do.....	12
April.....	12
Looking ahead.....	12
VE Testing Results.....	13
SARC Email Reflector.....	13
Club Nets.....	14
Club Meetings.....	14
Club Officers – 2015.....	14
Club Committees.....	14
Schaumburg Amateur Radio Club.....	15

## From the Editor

Welcome to another edition of the Radio Hill Gazette.

Spring is here and we all look forward to many outdoor activities.

One activity that is always a good idea is checking on all of your outdoor antennas. You want them functioning in top form, so take some time to check them out.

Speaking of antennas, if you are considering a ground mounted vertical antenna, you'll need radials. Now is the time to lay down radials, before the grass starts to grow. Lay your radial wires on the ground, hold them down with lawn fabric staples (small metal "U"s). Then, when the grass grows in, it will cover all your radials and you won't see them again!

Just as this is ready to go to press, the ARRL has announced the awards window is open for the Centennial QSO Party and W1AW portable operations. <https://centennial-qp.arrl.org/index.php>

Anthony  
Editor, RHG



## SDR, CW skimmer and RBN

Gregg Seidl K9KL

*{Pulled from the Society of Midwest Contesters mailing list}*

I'll start out with this, I'm not that great with computers. I am not real comfortable changing setting and installing programs. I figure if it works don't screw with it, BUT there is so many neat things that are happening in ham radio that involve or require this I've decided to quit being chicken and start playing. A good friend of mine who comes out to operate my station occasionally N9BC, is a network programmer or something like that has been helping me a lot.

So I bought HRD which is really cool. I bought a Signal Link which is really cool. I had asked him about RBN and he showed me that. That is really cool. I want to be a spotting station for that but I'm not sure what I need so I need to figure that out.

He also showed me how cw skimmer works and that is cool too so I need to understand more on that. Learned how to copy WSJT on HF and that is simply amazing what it can hear. So I ordered a set of cables to connect my 2nd rig to my PW-1 so I can select those antennas. They aren't here yet but they tell me next week.

I've been interested in SO2R but I am completely deaf in my left ear. I had spinal meningitis when I was 5 which caused me to lose my hearing in that ear. But I could do RTTY and cw with a decoder. So Brent showed me N1MM software. That is cool but a bit of a learning curve. I tried it out some during the WIQP so if I sounded like I was lost more than normal that is why! I might be trying some of that soon as well. I need to figure out if I can get get an antenna switch that allows two radios to use 8 antennas without blowing anything up. I have coax stubs around here somewhere.

The reason for this post is to hopefully encourage someone else to just try something different and maybe to get some ideas on how to do it better. Summer is coming and that means a bunch of other stuff I enjoy starts happening and radio gets kind of put on the sidelines but maybe not as much this year. I need to get some antenna work done so I guess somewhere in-between fishing, astronomy, gardening and lawn care, riding ATV's, shooting guns, making maple syrup, work and just sitting on the porch with my wife of 26 years I'll have to fit it in.

We scored about 145K in the WIQP.

Try something new, today.

Gregg K9KL

## Wave of popularity

Don Keith

*{Reprinted with permission of The American Legion Magazine, March, 2015. [www.legion.org](http://www.legion.org)}*

In a digital world, ham radio endures, as a hobby and means of emergency communication.

What comes to mind when you hear the term “ham radio”? Maybe, when you were a kid, it was the fellow with the tall tower in his backyard that was blamed for causing squiggly lines on neighborhood TV screens. Or the guy at work with antennas bristling from his car who spends his lunch hour eating a sandwich and talking on a radio. Or maybe you’ve read a news story about “ham” operators helping in the aftermath of a natural disaster.

Whatever your impression of the hobby, you may have no idea how dynamic and fun ham radio is, or just how crucial it can be when other forms of communication fail. And it’s a perfect fit – both nationally and at local posts – with many American Legion missions, including civil defense.

Every time you send a text on your phone, watch a TV show or use Wi-Fi at a coffee shop, you use technology developed in part by early hams – an old railroad telegraphers’ term for “inexperienced operator” – experimenting with newly invented radio in their basements and attics. And throughout amateur radio’s 100-year history, these cellar alchemists have helped create and refine innovations in the field. Meanwhile, others have helped save lives and ease human suffering during catastrophic events such as 9/11 and Hurricane Katrina.

Along the way, they’ve formed a tight-knit community that has a heck of a good time.

In the early 1900s, with radio in its infancy, its possibilities appealed to a group of early adopters. They took the work of scientists and pioneered the first practical uses of wireless technology. Meanwhile, world governments saw the need to formalize regulation of this new communication medium to prevent on-air chaos. In the United States, the Federal Radio Commission was created for that purpose. Most regulatory agencies recognized the contributions of those early hams and saw them as a willing and valuable resource. They designated portions of the radio spectrum for amateurs to continue to experiment and provide backup communications as a public service.

Fast forward a century, and the hobby is still as vibrant as ever. This surprises some people, who assume that smartphones, Facebook, online chat rooms and texting have made a pastime like ham radio obsolete. Yes, communicating with others is the ultimate goal of amateur radio enthusiasts, and there are plenty of ways to do that these days. But there is so much more to the hobby than simply talking to another person.

It can be difficult to convey the attraction to others, but there is a certain magic in connecting with another person using a radio station that you put together yourself, possibly one you designed and built from scratch. There’s a thrill that comes from bouncing a signal off the atmosphere – maybe even off a satellite, the surface of the moon or the tail of a comet – using newly developed digital modes of communicating, and conversing with someone who shares that passion, whether he’s down the street or on the far side of the globe.

Amateur radio is not for everyone. But for those who are interested and want to join in, it can be an almost perfect avocation, offering opportunities for learning, experimenting or combining the pastime with other interests.

Campers, whether in RVs or tents, take radios with them for companionship and emergency situations when other means of communication are unavailable. Some hams hike to mountaintops or venture to remote islands with tiny, low-power transceivers and portable antennas, putting those locations on the air for others around the world to contact. Many use radio to control model aircraft, boats or robots, or as payloads in weather balloon launches. A wide range of special-interest groups meets regularly on the amateur radio bands in what are called “nets,” discussing such subjects as antique cars or gardening. There are nets, too, for veterans to connect on the air and talk about their experiences.

Those with technical flair learn, design, build and try out new ideas. Right now, satellites designed and built by amateurs are orbiting the earth and can be accessed by other hams using relatively simple gear. Computer technology is a big part of amateur radio today, and the latest advances in combining digital content with radio frequency waves put today’s hobbyists on the cutting edge just like their predecessors a century ago. Others pay homage to their forerunners by restoring and repairing antique radio gear and returning it to the airwaves. For many, amateur radio has been the gateway to careers in engineering, electronics and communications.

However, technical aptitude is not required to join the fun. The hobby offers plenty for those not electronically inclined. For example, many enjoy what they term “radiosport,” using their radios and the airwaves for spirited competition and contacting as many other stations as they can in a set period of time. “Fox hunting” – searching for a hidden transmitter – is a popular activity. Others work toward awards for contacting as many fellow hams as they can in countries around the world.

Of course, many amateur radio enthusiasts simply enjoy having conversations with a group of friends or someone new each time they fire up their stations. You never know who you might encounter on the ham bands. That leisurely chat might be with a music or TV star, a member of Congress, the king of a European country, an ice fisherman on a lake in Manitoba, a Nobel Prize winner, a missionary on a South Pacific island, a group operating from an isolated chunk of glacier in the Antarctic or even an astronaut in outer space. Most crewmembers aboard the International Space Station are licensed hams and frequently converse with school groups and other individuals back on Earth.

## READY TO SERVE

With all this fun, competition and camaraderie, it is important to note that amateur radio has a serious purpose, too. When the Federal Radio Commission – now the Federal Communications Commission (FCC) – created the amateur radio service, it made it clear why hams deserved vast slices of the radio spectrum. One, as mentioned, was to allow them to continue experimenting and contributing to the field. The other was to provide a pool of trained operators with working radio stations to assist in providing emergency communications.

But have cellular technology, satellites and the like negated the need for amateur radio operators in emergencies? We only have to consider recent events – wildfires in the West, a volcanic eruption in Japan, Superstorm Sandy in the Northeast, the terrorist bombing at the Boston Marathon – for examples of normal communication infrastructure becoming overwhelmed or failing completely. In each case, hams were called upon, and they were ready to serve. When Hurricane Katrina devastated

the Gulf Coast in 2005, the first structures to topple were cellphone towers. When tornadoes ripped through Alabama in 2011, hams were on the ground, first as trained “storm spotters” helping track the storms for the National Weather Service. Then they operated around the clock for weeks afterward, assisting relief operations.

From the American Red Cross to The Salvation Army to the Federal Emergency Management Agency (FEMA), numerous organizations rely heavily on amateur radio groups. The American Legion has been closely aligned with the hobby since the 1930s and signed a statement of affiliation with the Department of Homeland Security (DHS) in 2006. That agreement was reaffirmed last year in “Disaster Preparedness and Response for American Legion Posts,” a handbook published by the Legion. Also, at the 92nd National Convention in Milwaukee in 2010, the Legion adopted Resolution No. 134, which urges posts and departments to assist DHS efforts in local communities – including disaster preparedness, which dovetails perfectly with amateur radio and its purpose.

But it doesn't take a major disaster to demonstrate the value of amateur radio. Hams regularly provide communications for bicycle races, charitable running events and civic festivals. Operators are often involved in rescues of injured hikers or climbers, boats in jeopardy at sea or groups endangered by sudden weather. As we know, cellphones do not always work. Hams have plenty of experience in communicating under marginal conditions and regularly employ those skills to help others.

## HOW TO GET STARTED

A good first stop to learn more about amateur radio is the website of the American Radio Relay League (ARRL) at [www.arrl.org](http://www.arrl.org). ARRL publishes books, study guides and other materials to help beginners get started and gain the most from the hobby.

A license is a prerequisite, and that requires passing an examination. You only need a basic knowledge of radio theory, operating practices and FCC rules. Many study guides and online teaching programs are available. While the material requires some study, it is not daunting. Children younger than 10 have passed the test and received their licenses.

At one time, would-be amateur radio licensees were also required to pass a Morse-code proficiency examination. That is no longer the case. Morse code is still used by ham radio operators alongside 21st-century modes of communication, but it is no longer necessary to know the dots and dashes to obtain a license.

The test is administered by volunteer examiners. The ARRL website can be used to find nearby amateur radio clubs and exam sessions. A Google search for “amateur radio club” plus your city or state can also be a good guide to locate active clubs or groups near you. Many clubs offer free or inexpensive license-exam preparation classes. When you receive your license – and your own unique radio call sign – clubs can also help you put together a station and get on the air, so that you can start helping in public service and emergency communications.

If there's already a club or a station at your American Legion post, the active amateurs there can tell you more about the hobby and how it can further the Legion's mission.

If you know a post member who is already a licensed ham, suggest that he or she contact The American Legion Amateur Radio Club (TALARC) and join if not already a member. The club can

offer ideas for how each post can participate, from conducting exam preparation classes to starting a ham radio station at the post for use by licensed Legionnaires.

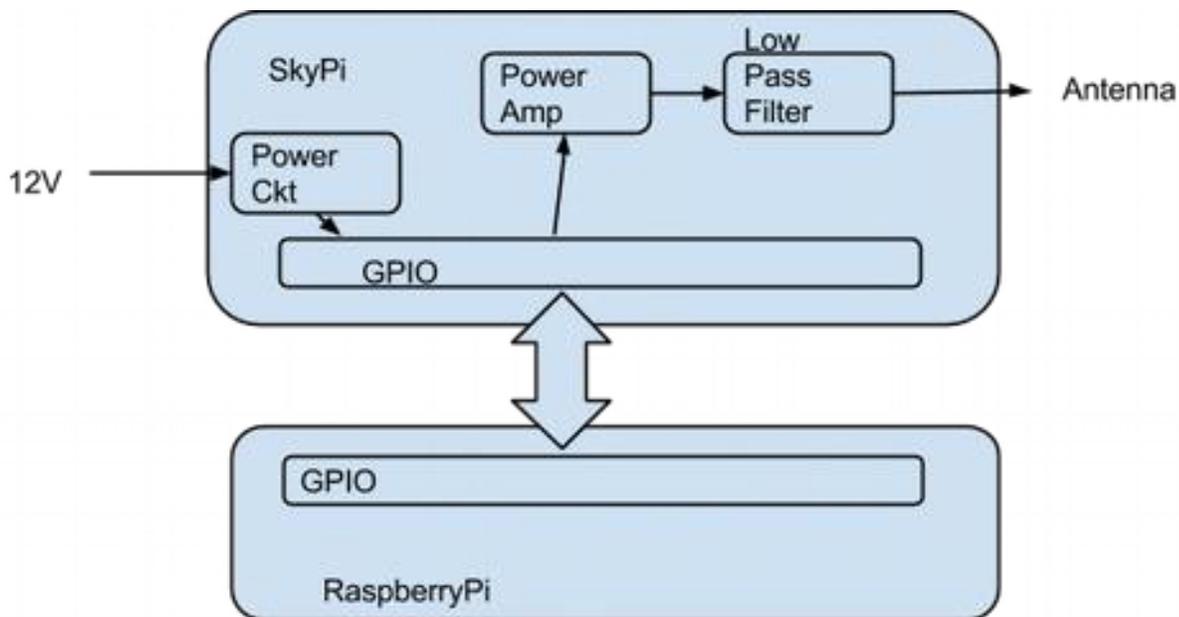
The hobby of amateur radio continues to evolve, providing unique opportunities for education, experimentation, fellowship and public service. It fits well with other interests. It is also an enjoyable pastime that can be pursued no matter a person's age or health.

Most of all, amateur radio is simply a lot of fun while offering the chance to give back to your community and country. That is why so many hams, particularly veterans, consider their hobby to be just about perfect.

*Don Keith is a former award-winning broadcaster and the best-selling author of more than a dozen books, including "Riding the Shortwaves: Exploring the Magic of Amateur Radio." He has been an active amateur radio operator since he was 13. His call sign is N4KC. Visit his website at [www.donkeith.com](http://www.donkeith.com).*

## Raspberry Pi and Sky Pi Project

It seems like there are a hundred ways to get into SDR, and this is one of them. You can code a Raspberry Pi to generate a modulated RF signal and you have a radio. You will get about 100mw and alot of harmonics. To get a little more power and filtering you can add a Sky Pi board as I did, and you will get 1 watt and a passable signal. In this setup the RP is programmed to develop a WSPR signal.



WSPR (Weak Signal Propagation Reporter) is a mode using K1JT's MEPT\_JT digital mode to probe radio frequency propagation conditions using very low power (QRP/QRPP) transmissions. The software is open source, and the data collected is available to the public through a web site (<http://wspnnet.org/drupal/wspnnet/map>).

So you can easily build a WSPR transmitter using a Raspberry Pi and an add on module called a Sky Pi. When you run a program on the Raspberry Pi it develops the signal ( in this case at about 7.039 MHz) and the Sky Pi amplifies the signal to 1 watt and filters out harmonics. I connected mine to a Carolina Windom at about 30 feet and got pretty good results. And got a couple of contacts in Germany.

### Making New Distance Records



Jim, W9JFB, has spanned the Atlantic with a SkyPi-40 Kit. **W9JFB now holds the SkyPi-40 distance record at 6,983 kilometers.** W9JFB was received by DL8FCL in Germany.

The same signal was also heard by ON7KO which was 6,637 kilometers away. A map of the contacts is shown above.

Click here to see me brag!!  
<http://www.radwav.com/making-waves.html>



It's fun to run your WSPR transmitter and check the website to see who is receiving your signal.

You could also use this to set up a RTTY or CW beacon, I have not seen any code to modulate other modes but that is where you can start exercising your programming skills.

73- Jim W9JFB

## April Presentation: Tuning Duplexers

Kevin Willard KB9QVX will present TUNING DUPLEXERS following the regular business meeting scheduled for Thursday April 16th.

SARC Board of Directors has taken action March 4th to purchase a new Yaesu Fusion Repeater as previously authorized during the February regular club meeting. As a brief background, Yaesu is offering a one-time, special price consideration of \$500 for a normally-priced ~\$1,000 VHF/UHF repeater. This equipment will allow the club additional communication alternatives and may even be configured to augment our current repeater resource. Our club began the formal application to obtain a rig that is planned for placement within the Schaumburg Emergency Operations Center.

With this initiative, our club is able to place current Digital (also Analog fallback) Radio technology within the EOC facility. The Village has already approved antenna purchase and installation (outside wall on the west end of the building).

An item needed to complete this repeater installation is a high-quality Duplexer. Procurement of an appropriate Duplexer is already underway and we're planning to have all required hardware ready for the anticipated antenna installation completion during late May.

Kevin's presentation on the 16th will help the membership understand what our investment will provide and increase team knowledge regarding Duplexers and how they are implemented and maintained.

I am currently soliciting presenters for the May meeting. It would be best to receive commitments early enough in the month to allow advance publication in the RHG.

Please let me know if you wish to contribute to the membership's radio knowledge and we'll schedule your presentation.

Cliff Sowka K9QD  
Program Chair

## A Call for Programs

Schaumburg Amateur Radio Club is fortunate to claim many talents among our active membership and we have enjoyed countless interesting presentations following the regularly scheduled business meeting agenda.

We have benefited from such diverse presentations as vacuum tube biasing, tax accounting with legal considerations, SDR Radio, Kit Construction, surface mount component handling, CW Key configurations, and even Ham Radio license plate collecting. Our most productive and interesting business meetings are almost universally found to have included an interesting presentation from one of our talented members; this makes the Program plan an important element that needs dutiful effort from all of us.

While speaking publicly is considered a frightening task, publicly speaking to our small group of radio enthusiasts places the volunteering speaker directly into a friendly venue without any fear of suffering hostile rebuke (at least most of the time; .....We've only suffered a few casualties).

As your newly recruited Program Chair, I am reaching out to our membership in preparing a preliminary schedule and identifying interesting topics aligned with a knowledgeable talented presenter for the next several months:

### Potential Topics

RF Transmission Fundamentals	ARRL Awards	ARRL Contests
Semiconductor Developments	Operating Tips	QSL Card Process
Managing Pileups	Public Service	Emergency Communications
Village of Schaumburg Volunteers	Field Day Planning	Basic Electronics
Inductive / Capacitive Reactance	Biasing Transistors	uController Projects
SDR / Dongle Radio Tricks	Grid Locators	Frequency Charts
Antenna Basics / Installation	Advanced Antenna Tricks	Measuring Antenna Impedance
Lightning Protection	Shack Electrical Facilities	Solar Cycle Considerations

Ideas for presentations are endless. Our membership has talented and experienced people who are asked to contribute to interesting business meetings by bringing some of their knowledge forward for all to benefit.

Please let me know if you wish to present a topic and I will include your ideas into the schedule. Then our diverse membership will provide enthusiastic participation for a rewarding outcome.

Cliff Sowka K9QD  
Program Chair



## VE Testing Results

Results for March 7, 2015  
 Next Test April 4, 2015  
 Park District CRC; Sr. Center;  
 Sunshine Room.



CLASS	NUMBER TESTED	NEW LICENSE or UPGRADE
Technician	0	0
General	0	0
Extra	0	0
Total	0	0

### New/Upgraded Licenses:

\*\*\*\***Technician**\*\*\*\*

\*\*\*\***Amateur Extra**\*\*\*\*

No data received.

\*\*\*\***General**\*\*\*\*

The SARC-sponsored VE exam sessions are held at 9:00 a.m. on the first Saturday of each month (unless it is a holiday or advised to the contrary by Schaumburg Park District) at

**Schaumburg Community Rec Center (CRC)**  
**505 N. Springinsguth Road**  
**Schaumburg, IL 60168-0251**

The CRC is located at the S.E. corner of Springinsguth and Bode Road, park in the North lot and enter through the North doors. Testing will be in the Sr. Sunshine Room, signs will be posted to guide the way to the room.

The fee for taking a VE exam is \$14.00.

According to the FCC, the test fee allows an examinee one attempt to pass or fail each of the three examination elements. In addition, the order in which the examination elements are taken is not restricted; they may be taken out of sequence.

As in the past, an identical fee will be assessed to any applicant who fails an exam and wants to retest at the same session. The only condition is that the same exam (identical set of questions) cannot be given to the Applicant, since all our exams are unique, this is not a problem at our sessions.

Tom Doyle K9MF  
 W5YI-VEC CVE & Test Session Manager  
 847-895-0174  
 Email: [K9MF@ARRL.NET](mailto:K9MF@ARRL.NET)

### SARC Email Reflector

Want to know what's happening in the club? Join the club's email reflector on Google groups.

Point your web browser to: <http://groups.google.com/group/sarc-all>

Click on the Join this group link. You can use your current email account to sign up or create a free Gmail account.

You can elect to receive individual messages, a daily digest, or just read the messages on the Google Groups webpage.

### Club Nets

Technical information net - Every Tuesday night at 7:30 pm. on the SARC Repeater 145.23 MHz.-600 kHz WITH 107.2 Hz PL. Bring your Q&A's

Thursday nights are the 2 meter general information net on the SARC Repeater 145.23 MHz.-600 kHz with 107.2 Hz PL. at 8:00 PM (except meeting nights.)

### Club Meetings

Club meetings are held at the Schaumburg Recreation Center (CRC) on the southeast corner of Springinsguth and Bode roads. Our nets are held every Thursday (except Meeting nights) at 8pm on the K9IIK repeater; 145.23 MHz -600 kHz with 107.2 Hz PL.

### Club Officers – 2015

<b>President:</b>	Leo Ribordy	N9NBH	<b>Director:</b>	Rob Glowacki	N9MVO	(2016)
<b>Vice Pres.</b>	Steve Karson	AC9EM	<b>Director:</b>	Anthony Willard	AB9YC	(2016)
<b>Secretary:</b>	Mike Clodfelter	AC9CG	<b>Director:</b>	Kevin Willard	KB9QVX	(2017)
<b>Treasurer:</b>	Chris Brewer	AC9GN	<b>Director:</b>	Ted Lester	AB9SZ	(2017)
			<b>Director:</b>	Gary Bernstein	N9VU	(2015)

### Club Committees

Programs	Cliff Sowka, K9QD	RHG	Anthony Willard, AB9YC
Social Activities	Roger Ryan, W9RDR	Publicity	Open
Membership	Leo Ribordy, N9NBH	Net	Jim Brink, W9JFB
Education	Bruce Warrington, N9EHA	Technical Assistance	Ted Lester, AB9SZ
Public Service	Rob Glowacki, N9MVO	Fund Raising	Open
Emergency Communications	Bob Langsfeld,	Fox Hunt Coordinator	Steve Karson, AC9EM
WB9TZC		Repeater	Rob Glowacki, N9MVO
Special Events/Field Day	Leo/N9NBH, Jim/W9JFB		



**Schaumburg  
Amateur Radio Club**

Thursday Night 8:00 Net  
S.A.R.C. Repeater  
145.230 MHz- 600 kHz PL=107.2  
442.275 MHz +5 MHz PL=114.8  
Hz

Don't forget to check into the net! It will only take a minute and will let other club members know how you sound on the club repeater. The net features current club news, weekly NEWSLINE, news from other clubs and (of course) the swap-and-shop. Encourage your friends who are not yet members to check in with as well. Keep in mind that this is an open net and we encourage everyone to check in. See you Thursday at 8p.m.

The Schaumburg Amateur Radio Club, Inc. is organized as a general not-for-profit corporation in the State of Illinois to render public service whenever applicable to the needs of the community and further various pursuits of amateur radio as a hobby. Meetings are generally held on the third Thursday of each

month. Visitors are always welcome.

Please send all submissions for the Radio Hill Gazette to the following address:

Schaumburg Amateur Radio Club, Inc.  
790 Washington Blvd.  
Hoffman Estates, IL 60169-3077

Or you can send by email to [rhg@n9rjv.org](mailto:rhg@n9rjv.org).

We solicit letters, articles, news items, quizzes, advertisements, suggestions, and criticism – plus anything else you can think of, including ideas to improve the RHG! Please make submissions by the 20<sup>th</sup> of the month for inclusion in the next issue.

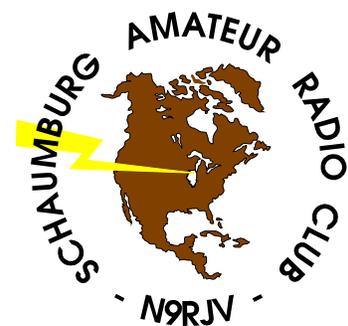
The editor reserves the right to edit submissions due to size or formatting limitations. S.A.R.C. shares newsletters with a number of other clubs. We scrutinize their publications very closely to make sure that we do not infringe on any copyrights. As a matter of form, we try to acknowledge all prior sources.

Unless otherwise clearly identified as copyright protected, all material in the RHG may be used when

due credit is given to the author and to SARC.

SARC is a recognized ARRL Special Services Organization.

The Schaumburg Amateur Radio Club publishes the Radio Hill Gazette monthly. Opinions expressed herein are those of the contributors and not necessarily those of the Schaumburg Amateur Radio Club. All contents of the Radio Hill Gazette, except where noted, are ©2015 of the Schaumburg Amateur Radio Club Inc. Articles and other material may only be copied when proper credit is given to both the author and to SARC.



Visit the SARC Home Page at <http://n9rjv.org>