



April 2017

(www.k7id.org)

P.O. Box 1765 Hayden, ID 83835-1765

## REGULAR CLUB MEETINGS:

Monday, Apr 10, 7:00 p.m.  
Search & Rescue Bldg.  
10865 N. Ramsey Rd  
Hayden, Idaho  
Topic: ???  
Presenter: ???  
Refreshments: ???

VE Testing  
Monday, Apr 10, 5:30 p.m.  
10865 N. Ramsey Rd.  
Hayden, Idaho

Monday, May 8, 7:00 p.m.  
Search & Rescue Bldg.  
10865 N. Ramsey Rd  
Hayden, Idaho  
Topic: ???  
Presenter: ???  
Refreshments: ???

VE Testing  
Monday, May 8, 5:30 p.m.  
10865 N. Ramsey Rd.  
Hayden, Idaho

### Upcoming Events

Letter from the President April 2017

Dave Boss KF7YWR

[boss@infinityusers.com](mailto:boss@infinityusers.com)

208.290.8590

Donation of VHF Antenna for Mica

I recently received an e-mail from Lenny, N7MOT, about the donation of a VHF Phelps Dodge Super Station Master antenna for use on Mica. This is coming from John, K7FVA in Rathdrum. Thanks John! As I was not familiar with particular antenna I decided to do a little research. Turns out Phelps-Dodge (also known as PD) was bought by Celwave, which was bought by Radio Frequency Systems (aka RFS) although it has been around a while, a good amount of info is still available. Doing a quick internet search (that took up the rest of the day) I was able to find a wealth of information on this type of antenna. Turns out, this is a collinear antenna that can be easily fabricated by the home-brewer from a few bits of coax, PVC pipe as a radome and several other parts. Additionally if there is a dead one around or off frequency for your use they can be easily repaired or modified for your desired frequency. Following the info in the links below you can easily turn out an omnidirectional antenna with up to 9dB gain

Here are some links to help you understand how it works, how to repair a dead one and build your own.

<http://www.repeater-builder.com/antenna/wa6svt.html>

<http://www.srgclub.org/CollinearAnt-Repair-SMaster.html>

<http://www.rason.org/Projects/collant/collant.htm>

<http://www.srgclub.org/CollinearAnt-HomeBrew.html>

### STEM

Our Club has been invited to partake in the Second Annual North Idaho College Science, Technology, Engineering and Math Symposium on Tuesday April 18<sup>th</sup>. We will have a booth with a station set up to demonstrate some portion of our hobby. It is only four hours long but expected to be well attended.

More details to come as they arrive. **Update:** Have attempted to contact several times by E-Mail without response, even stopped by the college on Thursday only to find that was spring break. Will try again next time I am in town.

#### Ham Fest Coming Soon

The Shriner's building has already been reserved and now is the time for members to step up and volunteer. Sign-up sheet will be ready at our next meeting.

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#### Kootenai Amateur Radio Society March 2017 Meeting Minutes

The meeting was called to order at 7:05pm by Club President Dave Boss (KF7YWR). The Pledge of Allegiance was led by Jim Peterson (AD0AZ).

Club Presentation: Packet Radio Basics taught by our very own Larry Telles (K6SPP)

SATERN Net: Saturday Mornings at 8am local on 14.265MHz, USB

#### Club Treasurer's Report:

February - Checking \$3,698.73, Savings \$2,126.32, Petty Cash \$95.69, Total \$5,920.74.  
Monthly income consisted of: Saving Account \$0.05; 50/50 Raffle \$7.00, Membership \$148.00  
Monthly expenses consisted of: NONE  
Motion to approve the Treasurer's Report was made by Adam Crippen (N7ISP), motion was seconded and passed by member vote.

#### Club Business:

2017 Membership renewals are due. If you have not paid your dues, please contact the Club Treasurer.

John Hollar (N7JU) Past Club member and President checked into N7MOT's Repeater IRLP Node and sends his regards.

Petition has been made to the Board to tone encode the Canfield UHF repeater transmit. Encoding the repeater transmit help to mitigate RFI from nearby modern conveniences (ATMs, traffic lights, etc).

Mica VHF repeater antenna is in need of being replaced. It was discovered to be in disrepair last fall on the last trip

to the site (late Oct 2016) and that we have a spare antenna on hand should the weather take its toll again.

Motion: Larry Telles (K6SPP) made a motion to purchase spare UHF and VHF antennas and hard-line coax to replace the longest run to have on hand, motion was seconded and passed by member vote.

Clint Bower has a Kenwood R2000, Short Wave Receiver, asking \$325. Contact Clint at (208) 699-3029 for more information.

2016 VE Testing: 41 Technicians, 23 Generals and 10 Extra Class Licensees.

2017 VE Testing (Thus Far): 6 Technicians, 4 Generals and 2 Extras Class Licensees.

#### Upcoming Events:

Boise Hamfest Road Trip with Larry Telles departing 5am (Yes in the morning) April 21<sup>st</sup>. Contact Larry if you are interested in riding along.

North Idaho College – STEM Event The club has been asked staff a table at the event, more details to come.

KARS Hamfest: will be Saturday June 10<sup>th</sup>. Please consider volunteering.

County Fair Booth: Fair is Wednesday, Aug 23<sup>rd</sup> to Sunday, Aug 27<sup>th</sup>.

Kootenai ARES/RACES Meeting: 1<sup>st</sup> Monday of every month at the Search and Rescue Building. Contact Rick Van Landingham (KI7I) with questions/interest. (changed due to conflicting meeting noise on third Monday, ed.).

#### Raffle Results:

50/50	\$7.50	Lindy Bryant, KE0AZD (claimed)
Membership	\$15.00	Ken Phillips, N0JPW (not claimed)

Lenny Gemar (N7MOT) made the motion to adjourn the meeting at 8:47pm, the motion was seconded and passed by member vote and meeting was adjourned.

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Sad to report Doug Rider, KC7JC, passed away on March 19th 2017 in Spokane. His obit was in the Spokesman review on April 2nd.

Although many may not recognize Doug's call, many more will know his name as being the repeater coordinator in Eastern Washington and the panhandle of Idaho for "longer than anyone can remember" was the quote I received from ARRL. Doug ran a one man show providing that valuable service to the amateur community and took great pride in doing so.

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#### A MEDAL FOR HER MORSE CODE

STEPHEN/ANCHOR: A 90-year-old former Morse Code operator in the UK has just been honored for her World War 2 service, as we learn from Newline's Jeremy Boot G4NJH.

JEREMY: A World War II wireless operator who used her Morse Code skills transmitting coded messages between India and England has been awarded a war medal recognising her service. Diana O'Brien is now 90 years old. She was 17 and her name was Diana Ballantyne when she joined the First Aid Nursing Yeomanry in 1944. She'd decided to help the war effort even more by learning Morse Code and working as a wireless operator.

She trained at Henley-on-Thames and Bletchley Park but was eventually posted to India, where she worked in Delhi and then Calcutta, transmitting coded messages back to England, supporting troops behind enemy lines in Burma. She returned to the UK in October of 1945 and eventually married and settled in the Lake District.

The Mayor of Shrewsbury, where Diana has lived since 2015, presented her recently with the campaign War Medal 1939-1945.

Her family told the Westmorland Gazette that her spirit for public service stayed with her even after the war. Before moving into a residential care home, she volunteered for a number of local organisations, including the Women's Royal Voluntary Service, the League of Friends at Westmorland County Hospital, the Red Cross, the Victoria League and the Women's Institute.

And yes, her family says, she still remembers Morse Code.

For Amateur Radio Newline, I'm Jeremy Boot G4NJH.

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#### Centennial of Amateur Radio Blackout for World War I Occurs on April 6

World War I commenced in Europe in August 1914, and the US, under President Woodrow Wilson, was determined to remain neutral. As the fighting and the enemy's resolve intensified, however, and Germany began sinking ships attempting to evade a naval blockade of

England as well as non-military vessels, including the *Lusitania* with a loss of nearly 1,200 lives, it became inevitable that the US would enter the fray, and the leaders of the newly formed American Radio Relay League encouraged its 3,000 members to be prepared.

The US officially declared war on Germany and Austria-Hungary on April 6, 1917, and the US government ordered most private radio stations in the US either to shut down or be taken over by the government. For the duration of WWI, it was against the law for private citizens to even own an operational radio transmitter or receiver, so amateur transmitting and receiving stations had to be disassembled. Amateur Radio operating privileges were not restored until November 1919 (*QST* resumed publication a few months earlier).

Once the US declared war, *QST* editorials urged qualified amateurs to volunteer their desperately needed skills to the military. Enlistees were particularly directed to the Navy, the nation's principal service user of wireless. A specific program was developed to induct volunteer amateurs into the Naval Reserve for the duration - the Class 4 Naval Reserve. The requirements included citizenship, the ability to pass a physical examination, and the ability to send and receive Morse code at 10 WPM. Most volunteering radio amateurs chose to join this reserve, ARRL's first Communications Manager Fred H. Schnell, IMO, among them. He went to sea as a chief radioman.

ARRL co-founder Clarence D. Tuska received a commission as a lieutenant in the US Army Signal Corps, and he established a radio training school at Ellington Airfield near Houston, Texas.

*QST* itself suspended publication for the duration of the war. - *Thanks to Mike Marinaro, WNIM, and United States Early Radio History by Thomas H. White.*

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#### ARRL Seeking Synergy with Maker Movement

ARRL is reaching out to members of the Maker Movement to explore avenues of cooperation and collaboration, and perhaps to recruit some new radio amateurs. Considered an extension of the arts and crafts tradition, the Maker Movement gained its own magazine, *Make*, in 2005. The philosophy of the Maker Movement is reminiscent of an era when radio amateurs built their own equipment rather than buying it off the shelf. Those considering themselves makers have tended to focus on such areas as electronics and computers, robotics, 3D

printing, metal and woodworking, and even Amateur Radio, among other avocations.

Recognizing the similar characteristics of radio amateurs and makers, the [Ham Radio](#) exhibition each summer in Friedrichshafen, Germany, has shared space with a Maker Faire, as maker gatherings are known, for the past few years. Maker Faires in the US have attracted thousands more attendees than even the largest hamfest; the Dayton of the Maker Movement takes place in San Mateo, California, and ARRL will have a presence at events in the Bay Area in May and in Chicago later this year.

“Maker communities and makerspaces are springing up across the country, becoming the latest nexus of youthful aspirants and exotic technology, as well as the locus of highly innovative forms of experimentation - including Amateur Radio,” ARRL CEO Tom Gallagher, NY2RF, wrote in his Second Century editorial, “Make It Happen,” appearing in April *QST*. Gallagher considers makers as “the next generation of hams.”

Gallagher suggests radio amateurs consider attending Maker Faires — not only to promote and give a presence to Amateur Radio but to learn what they have in common with makers, many of whom already are licensees. (An article in January 2017 *QST*, “Maker Faire Success for Ham Radio Clubs” by David Witkowski, W6DTW, is on Gallagher’s recommended reading list, as is an interview in the same issue with Jeri Ellsworth, AI6TK — well known in the Maker and gamer communities.)

Any radio amateur who enjoys tackling an Arduino or Raspberry Pi electronics project for the shack should find some common ground in the Maker Movement. Gallagher notes in his editorial that at last September’s Maker Faire in New York City, a club in Queens offered a simple build-a-code-practice-oscillator project, provided by [QRPme.com](#), that only required five components. “The attendees were lined up six deep in two lines,” Gallagher recounted. “There is nothing to match the delight in the builder’s eyes when he or she first experiences the joy of oscillation.” He hinted that this could, in time, translate to new licensees.

Gallagher has more to say about the Maker Movement in his April “60-Second Century” video. ARRL began hosting these quick video clips in February, and each is posted on the [ARRL YouTube channel](#) as well as made available via social media. Each video will become available on the 10th of each month, coincident with the release of the digital *QST*, and will offer a glimpse at the content of each month’s *QST* editorial.

As Gallagher said about the Maker Movement in his April “60-Second Century” video, “It’s in our DNA. Explore, discover, create!” (ARRL News)

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#### International Crystal Manufacturing Going Out of Business

International Crystal Manufacturing ([ICM](#)) of Oklahoma City has announced that it will be going out of business, probably at the end of May. Royden Freeland Jr., W5EMH, son of the company’s founder, posted a letter this week on the ICM website.

“We will be honoring all orders that we have already taken and will be able to fill a limited amount of new orders dependent upon raw materials available,” Freeland said. “We would like to thank you for your past business. The success of ICM over the previous 66 years has been largely due to its amazing customer base.”

International Crystal produces RF control devices - quartz crystals, oscillators, QCM crystals, filters, TCXOs/VCTCXOs, and precision crystals.

Royden R. Freeland Sr. founded International Crystal in 1950, at first operating out of his garage. One of his first contracts was to produce crystals for Collins Radio. The elder Freeland and his wife died in a 1978 air crash, and his son took over the company, which expanded into the production of other electronics in the 1980s.

In the 1990s, though, it sold off some of its equipment and distribution business to concentrate on its core enterprise - the manufacture of crystal and oscillator products.

The announcement caught some manufacturers off guard, and they are seeking to source the products they

had been buying from ICM, one of the few remaining US-based manufacturer of crystal products. Radio amateurs requiring crystals for projects or as replacement parts for older equipment also will have to look elsewhere.

Ironically, International boasts on its website that it's "a proud supplier to RadioShack," which, for the second time in 2 years, declared Chapter 11 bankruptcy this week. (ARRL News)

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### A VERY MERRY "CHRISTMAS HAM"

PAUL: We close this week's report with the story of a newly ticketed amateur who may not be the ONLY ham on an Indian Ocean island but he might just be its newest. Amateur Radio Newsline's John Williams VK4JJW tells us his tale.

JOHN'S REPORT: He's calling himself the Christmas Ham even though it's already February. Cliff Tindall, VK9VKL, is a new licensee who has chosen to announce his advent on the bands by posting on QRZ.COM and on his blog.

He says he's the newest ham on Christmas Island — even if he can't get on the air just yet.

Christmas is coming soon enough for Cliff, however, because his rig, antenna and other equipment are on their way to his remote location in the Indian Ocean, 870 miles northwest of Australia. He explains on QRZ how his relatively remote location made a Foundation license impractical for him as a DXer, so he studied even more intensely to qualify for a Standard ticket.

It's challenging and lonely not having regular club meetings or an Elmer next door, so while Cliff awaits the contents of his new shack to be delivered, he's been blogging at Vee-Kay-Nine-Vee-Kay-Ell-dot-island-dot-Cee-EX (vk9vkl.island.cx) bringing the world up to date. As of early February, there's a G5RV enroute to be his starter antenna and a Yaesu FTDX 1200 transceiver - among all the other items on his Christmas list.

Meanwhile, he's puzzling out the slow and costly process of sending those eventual QSL cards out. For their eventual recipients, they're bound to become Christmas cards of a very different sort.

For Amateur Radio Newsline I'm John Williams VK4JJW.

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### New Bands! FCC Issues Amateur Radio Service Rules for 630 Meters and 2,200 Meters

It's been a long time coming, but the Amateur Service will get two new bands in the near future. The FCC on

March 28 adopted rules that will allow secondary Amateur Radio access to 472-479 kHz (630 meters) and to 135.7-137.8 kHz (2,200 meters), with minor conditions. The FCC *Report and Order (R&O)* spells out the details. It allocates 472-479 kHz to the Amateur Service on a secondary basis and amends Part 97 to provide for Amateur Service use of that band as well as of the previously allocated 135.7-137.8 kHz band. The *R&O* also amends Part 80 rules to authorize radio buoy operations in the 1900-2000 kHz band under a ship station license. Just when the new Part 97 rules will go into effect is difficult to determine just yet; more on that below.

"It's a big win for the Amateur community and the ARRL," ARRL CEO Tom Gallagher, NY2RF, said. "We are excited by the FCC's action to authorize Amateur Radio access for the first time on the MF and LF spectrum. As amateurs begin using these new allocations in the next few weeks, we encourage the entire Amateur Radio community, as secondary users, to be especially attentive to the rules."

It has not been an easy win, however. ARRL has been trying since the 1970s to convince the FCC to allow amateur access to parts of the spectrum below the Standard Broadcast Band. Through the Utilities Telecoms Council (UTC), electric power utilities have opposed Amateur Radio use of the MF and LF spectrum, raising unsubstantiated fears of interference to unlicensed Part 15 power line carrier (PLC) systems used to manage the power grid. The FCC said the Amateur Radio service rules it has adopted for 630 meters and 2,200 meters allow for co-existence with PLC systems that use the two bands.

Here are the highlights:

Amateurs operating on 472-479 kHz will be permitted a maximum equivalent isotropically radiated power (EIRP) of 5 W, except in parts of Alaska within 800 kilometers (approximately 496 miles) of Russia, where the maximum would be 1 W EIRP. [EIRP is the product of the power supplied to the antenna and the antenna gain in a given direction, relative to an isotropic antenna (absolute or isotropic gain). EIRP is equal to ERP multiplied by 1.64.] Amateurs operating in the 135.7-137.8 kHz band will be permitted to run up to 1 W EIRP.

The FCC is requiring a 1-kilometer separation distance between radio amateurs using the two new bands and electric power transmission lines with PLC systems on those bands. Amateur Radio operators will have to notify the UTC of station location prior to commencing operations. The FCC Wireless Telecommunications Bureau

will provide details on the notification process later, but ARRL is urging radio amateurs interested in operating on either band to register at the earliest opportunity, to avoid having to protect any “post-notification” PLCs.

The FCC placed a 60-meter (approximately 197 feet) above-ground-level (AGL) height limit on transmitting antennas used on 630 meters and 2,200 meters.

The bands would be available to General class and higher licensees, and permissible modes would include CW, RTTY, data, phone, and image. Automatically controlled stations would be permitted to operate in the bands.

In an unrelated action, the FCC allocated 1,900-2,000 kHz to the maritime mobile service (MMS) on a primary basis for non-Federal use in ITU Regions 2 and 3, and limited the use of this allocation to radio buoys on the open sea and the Great Lakes.

“We are persuaded by ARRL’s comments to adopt final rules that are better tailored to the places where the commercial fishing fleet can make reasonable and productive use of radio buoys,” the FCC said.

Amateur Radio was upgraded from secondary to primary in the 1900-2000 kHz segment in 2015. The FCC said it believes Amateur Radio and radio buoys “can continue to share this frequency band as they have done for many years.” It declined to make additional spectrum available for radio buoy use.

#### *Effective Date*

The fact that the new rules contain a new information-collection requirement - notification of operation to the UTC - makes it difficult to guess at an effective date. The FCC R&O says the Office of Management and Budget (under the Paperwork Reduction Act) must first approve the information-collection requirements (in §97.303[g][2]). Once that happens, the revised Part 97 rules sections will become effective after the FCC publishes a notice in *The Federal Register* “announcing such approval and the relevant effective date.” (ARRL News)

#### NVIS Research Paper Available

A thorough and fully annotated discussion of Near Vertical Incidence Skywave (NVIS) is available in the research paper (<https://link.springer.com/article/10.1007/s11235-017-0287-2>), “Radio Communication via Near Vertical Incidence Skywave Propagation: An Overview,” by Ben A. Witvliet, PE5B/5R8DS, and Rosa Ma Alsina-Pagès.

First investigated in the 1920s, NVIS propagation was rediscovered during World War II as “an essential means

to establish communications in large war zones such as the D-Day invasion in Normandy,” the paper notes, adding that the US Army subsequently sponsored a lot of NVIS field research, especially between 1966 and 1973. More recently, NVIS has become a popular means to enable close-in communication on Amateur Radio HF bands between 3 and 10 MHz. NVIS can be used for radio communication in a large area (200-kilometer radius) without any intermediate manmade infrastructure, and it has been found to be especially suited for disaster relief communication, among other applications, according to the paper.

“A comprehensive overview of NVIS research is given, covering propagation, antennas, diversity, modulation, and coding,” the *Abstract* explains. “Both the bigger picture and the important details are given, as well as the relation between them.” As the paper describes it, in NVIS propagation, electromagnetic waves are sent nearly vertically toward the ionosphere, and, with appropriate frequency selection, these waves are reflected back to Earth. (ARRL News)

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**COFFEE & DONUTS**  
**EVERY THURSDAY MORNING**

8:00 A.M.  
To  
10:00 A.M.



**Community Mtg Rm**  
**Silver Lake Mall**  
**Coeur d'Alene**

**TALK-IN: 146.980, PL127.3**  
**443.975, PL136.5**

Bring a Writing Instrument **Community Mtg Rm**  
has the napkins for our breakfast table engineering!

Deadline for submitting articles, stories, reports, etc., is the 25th of each month for the following month's newsletter.

# Kootenai Amateur Radio Society (KARS) MEMBERSHIP APPLICATION

**One year membership Rates:**

New Member: \$15.00  Renewal: \$15.00  Family Membership: \$23.00

**Two year membership Rates:**

New Member: \$28.00  Renewal: \$28.00  Family Membership: \$42.00

**Lifetime membership:**

Member: \$150.00

**Information Update Only**

**Are You An ARRL Member?                      Yes / No ( Please Circle One)**

Callsign: \_\_\_\_\_ Class: \_\_\_\_\_ Expiration: \_\_\_\_\_

First Name: \_\_\_\_\_ M.I. \_\_\_\_\_ Last Name: \_\_\_\_\_

Nickname: \_\_\_\_\_

Address1: \_\_\_\_\_

Address2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_ - \_\_\_\_\_

PHONE NUMBER: (\_\_\_\_) \_\_\_\_\_

**OK to publish phone number?                      Yes / No ( Please Circle One)**

EMAIL ADDRESS: \_\_\_\_\_

**OK to publish Email address?                      Yes / No ( Please Circle One)**

**Do you want to receive the emailed Newsletter?                      Yes / No ( Please Circle One)**

Note: If this is a family membership, (all members with the same address), please complete the following section for your family.

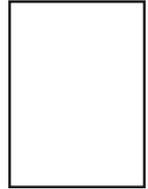
Name: \_\_\_\_\_ Call: \_\_\_\_\_ Class: \_\_\_\_\_

*RETURN THIS FORM WITH YOUR DUES, (CASH OR CHECK), TO THE KARS TREASURER,  
OR, MAIL TO: KARS MEMBERSHIP, P.O. BOX 1765, Hayden, ID. 83835-1765.*

(Office use only.)

Cash:		Check #:		Money Order:	
Membership Card:		Roster:		Newsletter:	

**KOOTENAI AMATEUR RADIO SOCIETY**  
**P.O. Box 1765**  
**Hayden, ID 83835-1765**



## **DIRECTIONS TO KARS MEETING:**

Take U.S. Highway 95 to Miles Avenue (Miles is about 1 mile North of Hayden Avenue). Instead of proceeding west from the corner of Miles and Ramsey, go north about ¼ mile, to the first building on the left (West) side of the road.

## **2017 CLUB OFFICERS**

President: Dave Boss, KF7YWR  
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Vice-President: Lindy Bryant, KE0AZD  
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Exec. Director: Lenny Gemar, N7MOT  
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Past President: Dave Boss, KF7YWR

## **Notice**

Propagation is published monthly by the Kootenai Amateur Radio Society (KARS). The club is located in Coeur d' Alene, Idaho and serves the North Idaho and the Spokane, Washington areas.

All opinions expressed in this newsletter are those of the individual contributors and not the radio club as a whole.

KARS operates a voice repeaters on 146.980 and 443.975, and a packet repeater on 145.510 Mhz.

Anyone interested in Amateur Radio is welcome to join. Dues are \$15.00 (individual) and \$23.00 for a family membership. Contact the Treasurer if you wish to join.

If you know of anyone interested in joining KARS, you can notify the newsletter editor as to that parties' email address. A copy of this newsletter will be sent with no obligation to join.

Material can be submitted for publication in Propagation. The deadline for articles, etc., is the 25th of each month for the following month's issue.