

January 2018

(www.k7id.org)

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

REGULAR CLUB MEETINGS:

Monday, Jan 8, 7:00 p.m.
Search & Rescue Bldg
10865 N Ramsey Rd.
Hayden, Idaho
Topic: "Something For Everyone"
Presenter: Ed Stuckey, AI7H
Refreshments: ???

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

Monday, Feb 12, 7:00 p.m.
Search & Rescue Bldg
10865 N Ramsey Rd
Hayden, Idaho
Topic: Advances in DMR
Presenters: Lenny, N7MOT
and Frank, KG7CUI
Refreshments: ???

VE Testing
Monday, Feb 12, 5:30 p.m.
10865 N Ramsey Rd
Hayden, Idaho

Upcoming Events

Winter Field Day
January 27-28, 2018

Puyallup Hamfest
March 10, 2018
Puyallup Fairgrounds

QRM FROM THE PRESIDENT

Larry Telles, K6SPP

I do hope that all of our members had a Merry Christmas and a Happy New Year. This is the first month of a new year with a new slate of officers. It's going to be a great year. There will be plenty of activities for all over the coming months.

I have been a member of the Kootenai Amateur Radio Society for the past sixteen years. During that time I have heard a statement that to this day still bouncing around in my head. "But we have always done it that way." This year we are not, so stand by.

I have asked for a volunteer to be the Sunshine Committee for the coming year. That is an appointed position that is not a functioning board member. The responsibilities of the position are to send out birthday, sympathy, get well cards, etc. Melissa O'Neal, KI7QFJ is our new Sunshine Lady. Thank you Melissa. (She is the one who made the table decorations for our Christmas Party. I am still looking for another such position to be refreshment committee chairperson. This person just needs to pass a sign-up sheet around for members to bring refreshments to each of our ten meetings a year. I'm getting a little tired of cookies, and I think you are too. All we need is two people to sign up for each meeting.

I am also looking for program ideas that will cover subjects for all three types of license. The speakers for the first three months of 2018 are ready to go. January will have Ed Stuckey, AI7H talk on all the amateur certificates and contest awards are available. They make great wall paper for your ham shack wall. February meeting will bring back Lenny, N7MOT with Frank, KG7CUI. They will cover all of the advances in DMR since Lenny's talk several months ago. Hope that Mike, KG7KSJ will join them in their talk. The March meeting is yours truly. We have a lot of new hams that are now new members. I will repeat my talk of about ten years ago on making QSL and Eyeball QSL Cards using free software. For some new hams, an eyeball QSL card is an amateur radio business cards with your name and call, etc.

I am always looking for program ideas. If you are a new hams or have been for less than a year, I would like to hear from you. One idea that you might think about is a meeting night where members can learn how to solder. I'm working on a larger venue for that purpose. Hands on make great programs.

See you at our next meeting. Thanks for taking the time to read this. I hope you understand where I'm coming from.

73, Larry Telles, K6SPP

p.s. 73 is singular, not plural.

Kootenai Amateur Radio Society
December 2017 Meeting Minutes

The December 2017 meeting was held at the Coeur d'Alene Shrine Club Event Center located at 1250 W Lancaster Rd., Hayden, ID in conjunction with the KARS annual Christmas party.

The meeting was called to order at 7:00 pm by Dave Boss (KF7YWR), outgoing Club President. Dave announced that Adam Crippen (N7ISP) had withdrawn his nomination for Executive Director. Since none of the other KARS Board positions were contested, a vote of affirmation was taken. As there were no opposing votes, the new KARS Board members were elected as follows:

President: Larry Telles, K6SPP
Vice President: Jim Petersen, AD0AZ
Executive Director: Lindy Bryant, KE0AZD
Treasurer: Rod Anderson, K7ZBE
Secretary: Sheila Waller, KG7SAA

Larry Telles (K6SPP) conducted the remainder of the meeting as the KARS Board President. Larry presented Dave Boss (KF7YWR) with a plaque in appreciation of his service to the KARS Club as president.

Lenny Gemar (N7MOT) announced that he would be taking a group picture of the new KARS Board members as well as pictures of the Northwest Traffic Net control operators following the meeting.

Activities for the KARS Christmas party followed with Lindy Bryant (KE0AZD) serving as the master of ceremonies. A white elephant gift exchange and a silent auction were both held. The silent auction raised \$100 for the KARS Club.

Gabby Perry (KE7ADN) presented the awards for the Northwest Traffic Net net control operators for 2017. Recipients of the awards were:

Lenny Gemar, N7MOT
Benny Owsley, KI7PMQ
John Samuelson, KI7OVC
Valaire Poler, KG7OWX
Gary Roth, KE7IAT
Robert Wilson, KI7NOR
Neil Powell, K2AMF
Bearpaw Galindo, KE7ADT

Larry Telles (K6SPP) recognized the KARS Christmas party committee members: Lindy Bryant (KE0AZD), Melissa O'Neal, and Terri O'Rourke.

The meeting was adjourned at 7:40 pm.

NOTE: After the meeting adjourned it was announced that a collection would be taken at the door for contributions to the Coeur d'Alene Shrine Club for use of the event center for the KARS Christmas party.

Ham Radio: Something For Everyone
by Ed Stuckey, AI7H

Amateur Radio is a mile wide and a mile deep, and constantly changing. The presenter will discuss "Finding New Hams and What to do With Them", and touch on some ways the more established Amateur Radio operators can interact with the new folks and how to help them find their way in our hobby. Some ham lingo may be spoken, but the presentation is appropriate for viewing by all skill levels. No animals were harmed during preparation for this event. (Only a few electrons were bothered. Ed.)

Amateur Radio Volunteers Active in Latest Round of California Wildfires

The massive and barely contained Thomas Fire in Southern California has consumed more than 230,500 acres, and the emergency has caused residents in fire-threatened areas to evacuate. Amateur Radio volunteers remain active supporting communication for American Red Cross shelters in Ventura County. More evacuations are likely, although the need for Amateur Radio assistance remains dynamic. Cal Fire said today (December 11) that evacuation operations will occur ahead of westward fire growth, speeded by low humidity and gusty Santa Ana winds, which will push the fire further into Santa Barbara, County. One of several fires that have broken out across Southern California, the Thomas Fire is far and away the largest.

Ventura County Auxiliary Communication Service (ACS)/ARES activated a week ago to support Red Cross shelters there, providing communications between shelters. Radio amateurs also have deployed to the Ventura County Emergency Operations Center (EOC). ACS/ARES expects to be deployed while shelters are open. According to ARRL Ventura County District Emergency Coordinator Rob Hanson, W6RH, the ACS/ARES volunteers are staffing four evacuation centers, in addition to the EOC.

Santa Barbara Section Manager Jim Fortney, K6IYK, told ARRL, an Amateur Radio digital network (ARDN)

MESH video network has been live streaming images from several sites, as long as the network remains up.

“Loss of primary power has required using the solar power backup capabilities, but, unfortunately, the heavy smoke has made that backup less than fully reliable,” he said. In addition some sites are down because of power outages, and at least one hilltop site was overrun by fire.

“The Santa Barbara District ARES organization works closely with Santa Barbara County OEM [and] is prepared to support any requests as the Thomas Fire continues to burn into Santa Barbara County,” Fortney said.

Rich Beisigl, N6NKJ, reported that the Fallbrook Amateur Radio Group and other groups in the North County (San Diego) are providing communication at some evacuation centers, and the Red Cross has activated its Amateur Radio group. He said a group in Carlsbad also was providing shelter communication support.

In addition to power loss to repeater sites, solar panels charging off-grid batteries have been affected by the huge plumes of smoke blocking the sun.

ARRL Los Angeles Section Manager Diana Feinberg, AI6DF, said little official use of Amateur Radio was made during the fires in her Section. “All city and county governmental radio systems, commercial cellphone networks, and landline phone systems operated normally throughout the three fires in Los Angeles County, with just a few minor power outages of short duration.” At one point, the ARES-LAX Northwest District was very briefly in standby mode when it was thought that power might become intermittent at a hospital in the Santa Clarita area.

Feinberg said the City of Los Angeles Fire Department ACS opened a net for any traffic resulting from the small Skirball Fire, which claimed a half-dozen expensive homes and shut down a major freeway during the morning commute. (ARRL News)

FCC CHAIRMAN COMMITS TO FEWER DELAYS

PAUL/ANCHOR: We begin this week’s newscast with good news for impatient innovators in the world of wireless. FCC chairman Ajit Pai has pledged to change the FCC’s longstanding reputation for long delays in approving new technology, especially in the field of wireless.

Approval often takes years, but in a speech he gave Nov. 17 in New York, the chairman said decisions for such approvals would now be made within a year.

Pai said that his priority for the past 10 months at the FCC has been to review regulations so they reflect the market, even if that means streamlining or even eliminating

some rules. He said the purpose of the move is to get government out of the way of private enterprise and innovation.

He said “one of the most powerful forces in government is inertia. To ensure that innovators don’t get sandbagged, we’re implementing a new process. If someone seeks approval of a new technology or service that falls within our jurisdiction, we’ll make a decision within one year.”

In other words, there will be less waiting for everyone - or so we hope. (FCC, SOUTHGATE)

Radio Amateur Receives Patent for “Cloaking” Technology

Nathan “Chip” Cohen, W1YW, of Belmont, Massachusetts - the founder of Fractal Antenna Systems Inc and inventor of the fractal antenna - has been granted a patent for deflective electromagnetic shielding - essentially “cloaking” technology to defend against detection by radar and similar technologies.

“Ham radio experimentation can lead to some pretty cool innovations!” Cohen said in response to a recent QRZ forum post about the patent. “Let’s keep that spirit alive in 2018.”

The patent covers electromagnetic cloaking/deflection of, among other things, satellites, rockets, towers, antennas, vehicles, body coverings, ships, spacecraft, and even people.

“Much time and effort has been devoted to the quest for so-called invisibility machines,” the patent’s background information states. “Beyond science fiction, however, there has been little, if any, real progress toward this goal.”

According to the detailed description, the technology “provides one or more surfaces that act or function as shielding and/or cloaking surfaces for which at least a portion of the surface includes or is composed of ‘fractal cells’ (small fractal shapes, functioning as antennas or resonators) placed sufficiently close to one another, so that current present in one fractal cell is replicated or reproduced to an extent in an adjacent fractal cell. Without being limited by any theoretical explanation, surface plasmonic waves are believed to cause such replication in conjunction with evanescent waves.” The resulting surface would deflect around an object.

In terms of backscatter, upon which radar systems depend, Cohen has explained it this way: “The incoming wave reflects off a boundary condition at the object. Its reflection is out of phase and phase-cancels with the incoming wave. Bye-bye, backscatter.”

Fractal Antenna Systems first publicly demonstrated “person invisibility” in 2012 for a Radio Club of America audience. He also has demonstrated invisibility cloaks at Hamvention® and at the ARRL New England Division Convention. According to the company’s *BusinessWire* release, “Uses of the newly patented technology extend to commercial needs such as towers, antennas, people, and shielding, but it may also be used in defense and intelligence arenas.”

According to the *BusinessWire* release, the technology “produces the desired effects without any requirements on special orientation, composition, or shape of the object. The cloak/deflector can be very thin, and the effect can happen over a wide bandwidth.”

The company noted that “cloaking” applications concentrate on microwave and infrared wavelengths, “although the technology and patents apply to visible light as well.” Stated Cohen, “Cloaking at visible light has limited needs. Camouflage and projection methods are easier and cheaper at making something disappear to the eye. But at radio and heat wavelengths, the cloaking technology is an important enabler.”

Cohen, 62, applied for the patent in 2012. An ARRL Life Member and active DXer, he has been a radio amateur for more than 50 years. (ARRL News)

Simple 40-Meter Dipole Supports Advanced Mars Radar

The venerable HF dipole has found a new home and purpose in space. The Mars advanced radar for subsurface and ionospheric sounding (MARSIS) on Mars Express uses a simple 40-meter dipole as the antenna for its subsurface sounding radar.

The dual-channel low-frequency sounder operates between 1.3 and 5.5 MHz for subsurface sounding and between 100 kHz and 5.5 MHz for ionospheric sounding. It’s the first high-frequency sounding radar operating from orbital altitudes since the Apollo 17 lunar sounder in 1972. It’s been operating successfully since August 2005.

The sounder has obtained returns from several kilometers below the Mars surface. (ARRL News)

Vietnam Vet, Radio Amateur Granted Dying Wish to Get on the Air One More Time

Vietnam War veteran John Nugent, WA2EQJ, got on the air for what likely will be his final time earlier this month, thanks to help from the Amateur Radio community. The 75-year old US Army Signal Corps veteran, who has cancer, lives at the James A Lovell Federal Health Care Center in North Chicago, Illinois. Licensed since he was 16, he told a social worker at the facility that one item on

his “bucket list” was to operate on ham radio one last time. Staffers at the facility got in touch with the Lake County Veterans Assistance Commission, and replies came from the American Legion Amateur Radio Club, the North Shore Amateur Radio Club, and Lake County Radio Amateur Civil Emergency Service (RACES), among others.

“He was just over the moon,” social worker Alesia Behnke told the *Chicago Tribune*. “We had no idea we were going to pull it off.”

The various Amateur Radio volunteers did, however, setting up an antenna outside the facility and a simple HF station inside. David Hartnett, K9DRH, and crew Don Whitney, K9DRW; James Nelson, K9QF; Harry Hahn, WB9R, and Scott Campbell, KC9SJP, were among those who made it happen. ARRL Illinois Section Manager Ron Morgan, AD9I, spread the word that WA2EQJ would be on the air.

“John is terminally ill and wanted to make some 20-meter radio contacts one last time,” a post on the Lake County RACES page recounted. “He has been in the [Lovell Center] for more than 3 years.” Nugent volunteered to serve in the Army and was wounded during his Vietnam service.

On December 5, Nugent - with help from his family members and Lovell Center staff - turned on his radio and worked stations in California, Illinois, and Texas. After the contacts were in the log, Nugent’s son Chris thanked the Lake County RACES and other volunteers who facilitated his dad’s last wish.

Among the stations Nugent worked was special event W9F, operated by members of the Fermilab Amateur Radio Club (WB9IKJ) to mark the 50th anniversary of the National Accelerator Laboratory (Fermilab).

“We were able to add dying Army vet John Nugent, WA2EQJ, to the W9F special event log because of the rapid e-mail alert from the ARRL Illinois Section Manager, notifying ARRL members that it was Mr. Nugent’s dying wish to make a final radio contact,” Michaline Przekop, KC9ARP, told ARRL. “It was truly touching and unforgettable experience.”

Video (<https://www.facebook.com/lovellfhcc/videos/10155600321448197/>) of the event is available. (ARRL News)

Radio Amateurs Continue to Plumb the Spectral Depths

David Bowman, G0MRF, reports that he and Dave Riley, AA1A, have completed what is believed to be the first transatlantic contact on 630 meters since the MF band was released to US radio amateurs this past fall.

They used JT9 digital mode to complete the more than 5,160 kilometer (approximately 3,200 miles) contact during the early hours of December 23.

On the UK end, G0MRF was running a modified Icom IC-7300 with a filtered preamp and a 60-W amplifier to a 250-foot wire configured as an inverted L. AA1A benefited from his near-Atlantic Coast location in Marshfield, Massachusetts, Bowman said.

Elsewhere, Dex McIntyre, W4DEX, continues to extend the limits of what is possible at VLF by achieving two significant results at 8.270 kHz. A record transatlantic message length of 42 characters resulted from an overnight transmission on December 25/26, received by Paul Nicholson in Todmorden, UK. The distance covered was 6,194 kilometers (approximately 3,840 miles), and the information rate of 24.6 bits/hour was reported to be about 70% of the channel capacity (signal bandwidth was 0.133 Hz).

The following night, a three-character message (“QRZ”) from W4DEX was received in Cumiana, Italy by Renato Romero, IK1QFK, achieving a new world-record distance of 7,173 kilometers (approximately 4,447 miles) for message decoding at VLF. The signal-to-noise ratio on the Italian end was on the order of -70 dB. W4DEX operated with an ERP of just 100 μ W. The mode used was *EbNaut* coherent BPSK with transmitter and receivers phase locked to a GPS-derived timing signal. McIntyre needed no license to transmit in that region of the spectrum, since the FCC has not designated any allocations below 9 kHz - a region known as “the Dreamers’ Band.”

In June 2014, running on the order of 150 μ W ERP, W4DEX transmitted the first sub 9-kHz transatlantic message by a radio amateur, also detected by Nicholson. W4DEX and IK1QFK already hold the world record distance for VLF signal detection, and this latest result extends that to message decoding.

In Newfoundland, inveterate VLF experimenter Joe Craig, VO1NA, has been transmitting the letter S using *EbNaut*, starting at 2100 UTC each evening on 8.2700075 kHz. Craig told ARRL that the very low power signal has been copied in England, Germany, Poland, Russia, and Italy, “where the guy who sent the first S across the pond was born!” Craig quipped. “I wonder what amazing things the new year will bring.” - *Thanks to David Bowman, G0MRF; Paul Nicholson, and Joe Craig, VO1NA (ARRL News)*

New IARU Region 2 Intruder Watch Coordinator Named

Carlos Beviglia, LU1BCE, of Buenos Aires, Argentina, takes over as the International Amateur Radio Union Region 2 (IARU R2) Monitoring System Coordinator on January 1. The Region 2 Monitoring System has been inactive recently.

Licensed at age 16 in 1979, he represents the third generation of radio amateurs in his family that began with his grandfather, LU2BJ, in 1927, and that he hopes will continue with his own children. He prefers to operate CW and is active on all HF bands.

Beviglia served as president of the Radio Club of Argentina from 2007 until 2017 and participated in the club’s 2016 Summer Antarctic Campaign at LU1ZI - Carlini Base, South Shetland Islands, Argentine Antarctica. (ARRL News)

Prepare to Get Your Grid On!

What’s your grid square? Be prepared to answer that question a lot in 2018. The ARRL International Grid Chase 2018 begins this weekend and continues throughout the year. The Grid Chase kicks off at 0000 UTC on Monday, January 1, which is New Year’s Eve in US time zones, so get ready to hit your grid running.

This is an event for *all* radio amateurs, and taking part is as simple as just getting on the air and making contacts: The objective of the year-long event is to work stations on *any* band (*except* 60 meters) in as many different Maidenhead grid squares as possible, and then upload your logs to ARRL’s Logbook of The World (LoTW). All contacts on all permitted Amateur Radio bands, except 60 meters, are eligible for award credit. This includes contest contacts.

Each new grid square contact confirmed through LoTW will count toward your monthly total. Stations do not have to exchange grid squares for a valid contact, although it’s anticipated that many operators will do so. Some grid squares will be “rare ones,” however, and will be in demand. How about yours? Get on the air, and get behind *your* grid! If you can, get out there, and activate the scarce ones.

Marconi Cape Cod Radio Club KM1CC at the Cape Cod National Seashore has just announced that its members will activate rare grid square FN51 January 18-19 for the International Grid Chase.

Complete details of the ARRL International Grid Chase 2018 appeared in the December 2017 issue of *QST*. For more information, contact the ARRL Contest Branch. (ARRL News)

Philippine Radio Amateurs Activate for Weather Emergencies

Philippines Amateur Radio Association's (PARA) Ham Emergency Radio Operations (HERO) volunteers assisted with emergency communication support in the wake of two severe weather events. Tropical Storm Kai-tak - known locally as Urduja - hit first in the central Philippines on December 16, leaving nearly dozens dead and forcing others to evacuate. It was followed on December 22 by the more-severe Tropical Storm Tembin - known locally as Vinta - which caused significant damage and claimed some 200 lives in the southern Philippines. Hundreds more are reported missing.

Roberto "JoJo" Vicencio, DU1VHY, said HERO volunteers provided HF coordination through a national emergency net at 7.095 MHz. In addition, local clubs embedded with government responders used designated channels and club frequencies. According to Vicencio, TS Kai-Tak ravaged the Central Visayas area, holding in place for nearly 3 days.

"Much rain was dumped in the Samar and Tacloban areas of the Central Visayas region," he said. "In situations like this, most radio amateurs in the affected areas fold into the government's regional/provincial disaster risk-reduction management offices to consolidate the actions of the amateur and civic groups as well as the military and police forces."

Just two days later, TS Tembin threatened the southern island of Mindanao. HERO reported that it was ready for the storm and able to mobilize the assets of radio amateurs and civic communications group as well as of police and armed forces.

Vicencio reported that the wind strength and volume of rains inundated Mindanao, taking a direct east-to-west path. Residential areas were hit by flooding, and many lost their lives after being trapped indoors by the fast-rising waters. The flooding also took out bridges and roads and devastated farm fields,

"There was a shortage of communications too," Vicencio reported. "Many major transportation arteries were affected, further stranding others who tried to escape."

This is said to be just the start of the annual adverse weather season in the Philippines, but Vicencio said the HERO Network is prepared. - *Thanks to Jim Linton, VK3PC, Chair, IARU Region 3 Disaster Communications Committee (ARRL News)*

COCKER SPANIEL PUP GETS TO 'PARK AND BARK'

PAUL/ANCHOR: Finally, we close our report with this question: What happens when a well-behaved puppy gets introduced to a pretty well-behaved group of hams? Jeremy Boot G4NJH answers that question for us now.

JEREMY'S REPORT: The purpose of the North Cheshire Amateur Radio Club is stated clearly on its website: members gather to talk about all aspects of radio, to experiment with equipment and try new things and of course, to socialize and perhaps even gossip. The club's website notes that visitors are very welcome.

So it should be no surprise when one of its more recent visitors to be welcomed was a cocker spaniel puppy. The 10-week-old pup named Connie was brought to the club's meeting on Sunday the 17th of December as part of her training.

No, she wasn't preparing for a Foundation license exam or even hoping to upgrade an existing license. She was, however, definitely on track for the next stage of her development - to become a Hearing Dog for the deaf.

According to club member Terry Rieves G3RKF such service dogs must display good behavior and a calm manner under all circumstances.

Where better to test out a dog's promise than in a room full of talkative, enthusiastic amateur radio operators? Any dog who can handle THAT kind of QRM is sure to enjoy a successful career helping someone who is deaf or hearing-impaired.

For Amateur Radio Newline, I'm Jeremy Boot G4NJH

COFFEE & DONUTS
EVERY THURSDAY MORNING

0:00 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: _____

Name: _____ Call: _____ Class: _____

Name: _____ Call: _____ Class: _____

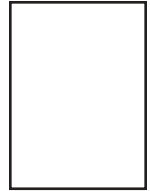
Name: _____ Call: _____ Class: _____

*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

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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.