

March 2015

([www.k7id.org](http://www.k7id.org))

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

## REGULAR CLUB MEETINGS:

**Monday, Mar. 9, 7:00 p.m.**  
**Search & Rescue Bldg.**  
**10865 N. Ramsey Rd.**  
**Hayden, Idaho**  
**Topic:**  
**Presenter:**  
**Refreshments: ???**

**VE Testing**  
**Monday, Mar. 9, 5:30 p.m.**  
**10865 N. Ramsey Rd.**  
**Hayden, Idaho**

**Monday, Apr. 13, 7:00 p.m.**  
**Search & Rescue Bldg.**  
**10865 N. Ramsey Rd.**  
**Hayden, Idaho**

### Upcoming Events

**March 7, 2015**  
**Mike & Key Club Hamfest**  
**Puyallup, WA**  
[www.mikeandkey.org/flea.htm](http://www.mikeandkey.org/flea.htm)

**March 14-15**  
**Idaho QSO Party**

**March 21, 2015**  
**MicroHAMS Digital Conf.**  
**Redmond, WA**  
[www.microhams.com/mhdc](http://www.microhams.com/mhdc)

Letter From the President  
**Dave Boss KF7YWR**  
[boss@infinityusers.com](mailto:boss@infinityusers.com)  
**208.290.8590**

March has raised its sleepy head and the weather is still unbelievable for North Idaho, but this is so *normal* to have uncommon weather when you least expect it. I have taken advantage of the mild conditions to get a jumpstart on the summer's projects. With no snow and ground you can actually drive a stake into, I have built and erected a 40 meter base loaded vertical. It uses surplus aluminum camouflage support poles and a large inductor (12" diameter by approx 30" long) mounted near the base, after sorting out all the connections it tuned to a perfect 1:1 SWR. Looking forward for this to be used for Field Day come June. I have not been on the air with it yet, as I have been busy rebuilding a Cushcraft A-3 and putting it up on the tower. While I enjoy sitting in the warm house next to the wood stove, the mild weather has been calling my name.

Idaho QSO Party - March 14<sup>th</sup> and 15<sup>th</sup>

I have been pushing to get this gear all ready for the Idaho QSO Party with the idea of having a "Pack the Shack" gathering (permission *has been granted* by the XYL) for those that would enjoy the fellowship and camaraderie of fellow Hams and for those with Techs or others without HF capabilities. I have the equipment to have three stations up and running. Anyone interested give me a call or shoot me an E-mail. I have lots of room if you care to drag out an RV or tent (Brrr!) or something. We can do a potluck and there is a fire-pit to enjoy as well. Plan ahead as it is only weeks away.

K7ID Website

Progress is underway on a revamp of our website. I was able to see a preview of the new site and it looks good so far. Lots of new options and a new face as well. Don't bother with running to see it just yet as we are still in the build process, but based on the progress I've seen so far it won't be long.

Hamfest June 13<sup>th</sup>

The board has decided to go back to the American Legion Facility again this year. Prizes are being sorted out and the volunteer list will be passed around at the meeting. With just a few meeting left before the Hamfest please step up soon so we don't have scramble for bodies at the last minute. Contact: Jim Banks, KF7TFJ 699-4353 or Dave, KF7YWR 290-8590 to help or for any questions.

Just Ask Elmer  
"I have a Problem"

I have two brothers. One brother is a Ham Radio Operator and the other was just sentenced to death in the Electric Chair for murder. My mother died from insanity when I was three years old. My two sisters are prostitutes and my father sells narcotics. Recently, I met a girl who was just released from a reformatory where she served time for smothering her illegitimate child to death and I want to marry her. My problem is: "If I marry this girl, shall I tell her about my brother who is a **Ham Radio Operator**?"

From a KARS Scrapbook dated April 1992, the 20<sup>th</sup> anniversary of the Club as KARS.  
Originally submitted by WA8GHL Dick Wierenga

*Please let me know if you would enjoy more of the shenanigans of Elmer and Hamlet in the future.*  
*73, Dave, KF7YWR*

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Kootenai Amateur Radio Society  
February 2015 Minutes

The meeting was called to order by Club President, Dave Boss, at 7:09pm. The Pledge of Allegiance with led by Frank Ten Thy (KG7CUI).

VE Testing resulted in three passing their Technician exams: Demian Koller, Randal Porter, and Cecelia Shelton (who also passed her General exam just after passing her Tech). Along with Cecelia two others advanced to General Class: Bruce Moddux, KG7HYA; and Levi Johnson, KF7MCO.

Club Treasure, Rod Anderson reported a balance in checking of: \$2,531.72; Savings \$2,550.17; and Petty Cash \$81.03 for a total available of: \$5,162.92

A reminder to all members that 2015 membership dues are due at the March meeting in order to be retained in the enrollment. Please contact the Club Treasurer or Security should you have questions if you are current on your dues. Also a reminder that there is a sign-up sheet for refreshments for our meetings, please consider picking a month.

Ed Stuckey (AEI7H) conducted our February Meeting Presentation on Ham Equipment for the perspective and new Ham Operators. Following the presentation Ed also had a few reminders for us:

First, the Idaho QSO Party is coming up March 14<sup>th</sup> and K7ID is the sponsoring club for the event. All Idaho hams are encouraged to get on the air and make some contacts. Because K7ID is the sponsoring club some

volunteers are needed to help after the event with log reviewing, entry emails and certificates of achievement for winners.

Second, the ARRL Field Day is June 27<sup>th</sup> and 28<sup>th</sup> this year, running from 11am Saturday (Local) to 11am Sunday (Local). This year we have a couple of options on the table for possible locations: one being the Rathdrum City Park (where the event was held last year) and River of Life Church at 12<sup>th</sup> and Cecil Street in Post Falls. The motion was made to keep both sites under advisement with a field committee to look into both sites and report back to the Club at the March Meeting, at which time the membership will be able to make a decision. The motion was seconded and passed by membership vote.

Ed Stuckey also made a motion to accept the treasurer's and club minutes for January. The motion was seconded and passed by membership vote.

Bonnie Patterson made a motion to amend the \$300 rent for Mica Peak Site and to accept the MOU. The motion was seconded and passed by membership vote.

Club Hamfest is approaching and there are two locations that are up for decision: The Post Falls American Legion for \$500 (which was the same location as last year) or the Shriner's Club in Hayden for \$300 (where we held the Christmas Party). Concerns have been raised with both locations ranging from costs to adequate space. Due to the time constraints and the need to make a decision on the location so that flyers can be printed in time for the Puyallup Hamfest, the motion was made for the Board to approve the site as complete details were not available for the February Meeting. The motion was seconded and passed by membership vote.

Net reminders: In addition to our nightly club net, ARES/RACES will be running their net on Friday Evenings at 7pm (Local) on the KC7ODP repeater. Both nets are open to all licensed amateurs and are encouraged to throw their call signs out there for a check-in.

Raffle Drawing Results: 50/50 was won by K6SPP (again) for \$10.50; Membership drawing was won by Ed Aycok (WA4HDE, previously KG7DUI) however he was not present.

Meeting was closed 8:29pm, remember to join us next month for another exciting event.

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ARRL Seeks Member Input on Draft HF Band Plan Proposals

The ARRL is asking members to comment by April 19 on possible changes to the League's HF Band Plans suggested by the HF Band Planning Committee. The

survey is part of the committee's efforts to tweak the band plans for the RTTY/data/CW portions of 80 through 10 meters — excepting 60 meters. The committee developed its suggested revisions to the voluntary band plans after reviewing some 400 member comments in response to a March 2014 solicitation that sought suggestions for using the spectrum more efficiently so that data modes may coexist compatibly.

“The committee concluded that most of the concerns voiced by members could be addressed by modest adjustments to the existing band plans, and mainly by confining data modes with bandwidths greater than 500 Hz to the FCC-designated segments for automatically controlled digital stations (ACDS) and to parts of the RTTY/data subbands above those segments,” ARRL CEO David Sumner, K1ZZ said. His article detailing the committee's suggestions will appear in the April edition of *QST*.

The proposed changes differentiate among ACDS, narrow RTTY/data modes having a bandwidth no greater than 500 Hz, and wider data modes having a bandwidth up to 2700 Hz.

### *Band by Band Draft Recommendations*

The committee suggests several modifications to the 80 meter band plan. FCC action in 2006 reduced the 80 meter RTTY/data subband to 100 kHz and limited access to the 3600-3700 kHz segment to Amateur Extra class licensees. “Unless and until the FCC Rules are modified, changes in the band plan for 3500-3600 kHz will not improve the situation,” Sumner said.

The HF Band Planning Committee recommends that the League petition the FCC to move the boundary between the 80 meter RTTY/data band and the 75 meter phone/image band from 3600 to 3650 kHz and restoring that segment to General and Advanced class licensees. Members are asked to comment on this proposal, as well as on whether or not the ARRL should petition the FCC for these other changes:

Shift the ACDS band segment from 3585-3600 to 3600-3615 kHz, consistent with the IARU Region 1 and 2 band plans.

Extend the current Novice/Technician CW segment of 3525-3600 kHz to 3650 kHz.

Add 80 meter RTTY/data privileges for Novices and Technicians.

On 40 meters, the committee concluded that it would be unrealistic to try to bring the ARRL band plan into alignment with the rest of the world, particularly with Regions 1 and 3 where operating patterns developed when the entire band, including phone, was just 100 kHz wide and is still only 200 kHz. While 7040 kHz is a recognized RTTY/data DX frequency in the band plan, the best place for other RTTY/data activity in the US is above 7070 kHz.

The committee proposes aligning the band plan with the “Considerate Operator's Frequency Guide,” with wide data modes — outside of ACDS — at 7115-7125 kHz. The “Guide” shows 7070-7125 kHz for RTTY/data, while the ARRL band plan shows 7080-7125 kHz. The FCC mandates that ACDS be confined to the 7100-7105 kHz segment.

On 30 meters, the committee recommends confining wide data modes to 10.140-10.150 MHz, separated from other RTTY/data at 10.130-10.140 MHz.

On 20 meters, the committee recommends using the 1 kHz IARU/NCDXF beacon network frequency (14.0995-14.1005 MHz) as a line in the sand between wide ACDS in the 14.1005-14.112 MHz segment, and narrow ACDS in the 14.095-14.0995 MHz segment.

The committee recommends 14.070-14.095 MHz for RTTY and narrowband data, noting that so-called “weak-signal” data modes often are used between 14.070 and 14.078 MHz.

On 17 meters, the committee recommends confining wide data modes to the FCC-mandated ACDS segment of 18.105-18.110 MHz, separated from narrow RTTY/data at 18.100-18.105 MHz. FCC rules do not permit RTTY/data above 18.110 MHz, limiting options for this band.

On 15 meters, the committee recommends that 21.070-21.090 MHz for narrow RTTY/data modes, the FCC-mandated ACDS segment of 21.090-21.100 MHz for both narrow and wide automatically controlled data station activity, and above 21.100 MHz for any additional wide data activity. The ARRL Board also wants members to comment on the desirability of adding RTTY/data privileges for Novices and Technicians in their existing 15 meter segment, where they're now limited to CW.

On 12 meters, the committee recommends confining wide data to the FCC-mandated ACDS segment, 24.925-24.930 MHz, separated from narrow RTTY/data operation at 24.920-24.925 MHz. FCC rules do not permit RTTY/data operation above 24.930 MHz, limiting options for this band.

On 10 meters, the committee recommends that wide data be confined to the FCC-mandated ACDS segment, 28.120-28.189 MHz, separated from narrow RTTY/data modes at 28.070-28.120 MHz.

#### *How to Comment*

The League has set up a web page to record members' preferences and comments. Those wishing to offer more detailed comments may e-mail ARRL. The comment deadline is April 19. The HF Band Planning Committee will deliver its final report at the ARRL Board of Directors' July meeting. (ARRL)

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#### German Radio Amateurs Breathe New Life into "Orphaned" Shortwave Channel

Some radio amateurs are frustrated broadcasters, and when German national broadcaster the Deutsche Welle closed down a 500 kW shortwave broadcast transmitter near Munich, an entity headed and operated by hams applied for and was granted the vacant channel of 6070 kHz in the 49 meter shortwave band. DARC Radio — which has a business association with the Deutscher Amateur Radio Club (DARC) but is privately owned — now has a 10 kW broadcast station, branded "Channel 292," up and running, and a new Amateur Radio DX program will debut next month.

"After the demolition of one of the world's biggest shortwave facilities of the Deutsche Welle last year, we managed to get an official radio broadcast license for the German Amateur Radio Club and have built up a shortwave transmitter with some parts of the old 500 kW transmitter from there," said DARC Radio Project Manager Rainer Englert, DF2NU, an ARRL member and president of the Munich South Section of the DARC. "As far as we know, there is no similar ham project like this worldwide."

The Deutsche Welle used the 6070 kHz channel until mid-2013 for European transmissions. DARC Radio hopes to fund its operating expenses by leasing airtime.

The DARC is a customer, and under its banner, a weekly Amateur Radio-oriented magazine of DARC news, contest schedules, DX information, interviews, DXpedition reports, market reviews, technical hints, and "some nice old music from the 70s and 80s" will debut on Sunday, March 22, at 1000 UTC, Englert told ARRL. The program will be in German, but the RSGB has expressed interest in contributing English-language program segments, he said. The inaugural DX magazine will be repeated on Monday, March 23, at 1600 UTC.

According to the DARC, the initial March 22 broadcast will air from a 100 kW transmitter in Austria,

while the repeat broadcast on March 23 will emanate from Radio DARC's 10 kW transmitter near Ingolstadt, Germany.

Rainer Ebeling, DB8QC, owns the official licensee - Intermedicom GmbH (LLC). He repurposed parts from the driver stages as well as a few transformers from the former Deutsche Welle transmitter for DARC Radio's 10 kW transmitter. "The antenna is a low-hanging, simple dipole with very high radiation angle, optimized for short-range coverage," Englert explained. The station easily covers much of Western Europe, he said, and also has been heard in Russia.

"We definitely have monitored Channel 292 via a web SDR in Toronto," he said, adding that the best time to hear the station is when both ends of the path are in darkness.

In North America Canadian broadcaster CFRX occupies 6070 kHz, transmitting at 1 kW and beaming west; Radio Havana also uses the channel. Englert said other broadcasters, perceiving it as a vacant channel, have been encroaching on 6070 kHz at night, when the station is off the air. SWLs routinely report stations operating at very high power from China, Iran, Korea, and even the Vatican.

Although its license allows full-time service, the station has mostly been on the air from 0700 until 1700 UTC. Englert said others, in addition to DARC, have been leasing airtime — currently filling about 20 hours per week. DARC Radio's hourly rate is rock bottom — about \$17.50 US. "This rate really only covers expenditures like electric power and the write-off of the power amplifier," he said. "The transmitter sucks almost 40 kW out of the grid at 100 percent modulation."

The station airs "The Golden Days of Offshore Radio" weekdays at 0700-0900 UTC, with offerings that evoke the era of pirate stations RNI, Radio Caroline, Radio Veronica, and others. In fact, the Channel 292 brand recalls the Channel 192 pirate station of the 1960s and 1970s. It also airs programs in Dutch and Spanish.

All reception reports to Channel 292 will be answered with a QSL card. Outgoing cards will go out via the DARC QSL bureau.

"The orphaned shortwave frequencies hardly interest anyone these days," allowed the DARC. "Not so radio amateurs, who will take advantage of these new possibilities to also get broadcasting licenses." (ARRL)

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## PUTTING THE INTERNET INTO EARTH ORBIT

Space exploration company Virgin Galactic and chip-maker Qualcomm have announced their backing of a venture called OneWeb. Their idea is to put 648 satellites in orbit about 750 miles above Earth's surface, where the RF round trip time is just a few thousandths of a second. Both companies say that this is an apropos altitude for any online application.

But the two companies are not alone. Not to be outdone, SpaceX immediately announced its own plan to do the same, but upping the numbers by building and launching 4000 satellites to a similar altitude.

While some form of radio communications might seem to be the obvious form of connection between Earthbound users and a satellite system, other systems are also under consideration. This includes a possible optical communications infrastructure.

No matter what is decided, the concept makes for an interesting expansion of high speed Internet access. An in-depth article on these proposals and other ideas can be found in an article in New Scientist magazine. It's on the web at [tinyurl.com/mqjbgpv](http://tinyurl.com/mqjbgpv) (New Scientist, Southgate)

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## NEW PHONE PROCESSOR CHIP ANNOUNCED

Chip designer ARM Holdings PLC, has unveiled new technology for mobile devices that it says will be much faster while using less energy. The company, whose designs are built into more than 95% of smartphones, says more than 10 companies have licensed its new Cortex A-72 processor design. The new technology is expected to be used in phones delivered to customers in 2016.

ARM, based in Cambridge, England, says the new processor design is 3.5 times as fast as the ARM technology used in most smartphones sold in 2014. The company expects most chips based on the design to be manufactured using an advanced production process from the Taiwan Semiconductor Manufacturing Company. (ARM)

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## NEW RASPBERRY PI 2 CAN REBOOT IF EPOSED TO XENON CAMERA FLASH

And finally this week it appears that the latest version of Raspberry Pi's mini computer appears to be camera shy. At least the Raspberry Pi 2 does not like the spurt of

high intensity light from Xenon camera flashes and may reboot itself when exposed to it. With more, here is Heather Embee KB3TZD...

[Heather:] The glitch is a result of the photoelectric effect phenomenon. Raspberry Pi creator Eben Upton admitted to the BBC that he had not been aware that the Raspberry Pi 2 would be sensitive to camera flashes, but that he was not too upset about it. Rather, he termed it an unintentional educational bonus and an interesting demonstration of the photoelectric effect.

According to The Southgate News, it was Essex radio amateur Peter Onion, G0DZB, who discovered the Raspberry Pi 2 reboots when photographed using a Xenon flash. The reason seems to be that a chip on the board is not light-resistant. The simple fix appears to be covering the offending integrated circuit with something like Blu Tak. Blu Tak is a reusable pressure-sensitive putty-like adhesive commonly used to attach lightweight objects such as posters or sheets of paper to walls or other dry surfaces; but it also seems to have the ability to block out a flash of Xenon light. For Newline, I'm Heather Embee KB3TZD in Warwick, Pennsylvania.

[Jim:] The company that created the Raspberry Pi2 says that it has has received in excess of 300,000 orders for the new \$35 device since its launch two weeks ago. More about this story is on the web at [tinyurl.com/raspberry-pi-reboot](http://tinyurl.com/raspberry-pi-reboot) (Southgate, BBC)

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## US Southeast ARES Teams on the Job as Severe Winter Weather Strikes

Amateur Radio Emergency Service (ARES) volunteers in the US Southeast remained on alert on February 26, as the region faces an unaccustomed ration of severe winter weather. Tennessee, which as seen at least 30 winter storm-related fatalities, was placed on a Level II state emergency operations center activation level, indicating a major disaster — an event likely to exceed local capabilities and require state and federal assistance. Tennessee Section Emergency Coordinator Daniel O'Donovan, W4DOD, said February 26 that Tennessee ARES volunteers in several counties were on standby, monitoring established nets, or actively staffing shelters and other locations. He said the American Red Cross has six shelters open in five counties, with 224 occupants.

“There are 19,700 customers without power in Tennessee over five counties,” O’Donovan said on February 26. “This is down from around 36,000 without power last night.”

States of emergency also were declared this week in Alabama and Georgia, as they and other states in the region that typically receive far milder winter weather, confronted what the National Weather Service was calling “a historic winter storm.” In North Alabama, snow accumulations of 6 inches or more were reported, and vehicle traffic was brought to a standstill on some major highways. Alabama ARES volunteers were on alert throughout Wednesday, February 25, and the American Red Cross established shelter sites for residents displaced by the severe weather.

“Due to heavy icing of roads in North Alabama and the requests for Amateur Radio operators to man Red Cross Shelters, EMAs, and the National Weather Service, I am now elevating the Section’s ARES status to Orange, invoking formal nets on the local and District Level,” Alabama Section Emergency Coordinator Mike Watkins, WX4AL, told ARES volunteers shortly before 7 PM Central Time on February 25. “I am standing by on 7243 kHz for phone, D-Star Reflector 058B, DRATS, APRS, *Winlink2000*, and, if needed, to transmit ICS and Radiogram forms, *Fldigi* with *Flmsg* on 7110 kHz.” Earlier in the day, the Red Cross in Alabama issued an urgent request for an Amateur Radio volunteer to staff a shelter in Cullman for 24 hours.

Alabama Gov Robert Bentley declared a state of emergency February 24 for all Alabama counties in preparation for the severe winter weather, and Georgia Gov Nathan Deal ordered a state of emergency for 51 northern counties in his state.

The National Weather Service had warned that heavy wet snow could take down power lines and trees, causing power outages across the northern tier of Alabama and neighboring states. Schools remained closed in many parts of the Southeast.

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#### VK TO ONE WAY ON 600 METERS

It has yet to be certified as a record, but using the new OPERA Dynamic Medium- and Low-frequency beacon mode, VK5CV transmitted at 16.30 GMT on 15th January using 477kHz and was spotted by G8HUH, receiving at -37dB.

Data recovered from the PSK-Map database shows the capture to fit exactly with the OPERA Dynamic time signature. Opera Dynamic provides an additional 5 or

6dB gain over the conventional Opera Beacon, and is automatically engaged should the decoder fail. The facility is linked to the OP8 477kHz and OP32 136kHz modes only.

VK5CV reported using 50 watts carrier power into a 160 meter inverted L with a base-loaded variable inductor to resonate it to the 477 kHz frequency. Those involved say that this may have been one of the ‘Flash’ propagation events linked to that Medium Frequency band. To date, a two-way contact on 600 meters between Australia and Europe has yet to be achieved. (GB2RS)

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**COFFEE & DONUTS**  
**EVERY THURSDAY MORNING**  
8:00 A.M. To 10:00 A.M.  
The Golden Spike Community Center Rathdrum  
**TALK-IN: 146.980, PL127.3 443.975, PL136.5**  
Bring a writing instrument. The Golden Spike 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



PO Box 1765, Hayden, Idaho 83835-1765

Please complete the entire form and return with your payment

## Single Year membership

New member \$15.00     Renewing \$15.00     Family \$23.00     Info Update Only

## Two Year Membership

New member \$28.00     Renewing \$28.00     Family \$42.00

Call Sign \_\_\_\_\_ Class \_\_\_\_\_ Expires \_\_\_\_\_

First Name & Initial \_\_\_\_\_ Last Name \_\_\_\_\_

If renewing, only fill in information below that has changed since last application, otherwise complete.

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_ E-Mail Address \_\_\_\_\_

ARRL Member \_\_\_\_\_ May we publish Limited information \_\_\_\_\_ (Y/N)

For Family Membership, Please complete an additional application and staple together.

Signature \_\_\_\_\_

## K7ID.org Request Form

First and Last Name \_\_\_\_\_ Call Sign \_\_\_\_\_

Would you like your (call sign )@k7id.org email be forwarded to an existing email account or would you like to Access it through a web or post office protocol (POP) system?

Please Forward to my existing Email     Webmail access     POP Access  
(Please complete the bottom & Sign)     I wish to opt-out of K7ID.org

Please select a user name \_\_\_\_\_@K7ID.org

Please select a Password \_\_\_\_\_

For forward request only

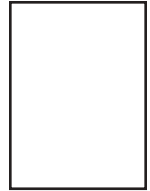
Email address \_\_\_\_\_

Signature \_\_\_\_\_

### Internal Use Only

Cash	<input type="checkbox"/>	Check	<input type="checkbox"/>	Money Order	<input type="checkbox"/>
Roster	<input type="checkbox"/>	Membership Card	<input type="checkbox"/>		

**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.

## **2015 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 \$20.00 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.