

December 2017

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

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

**REGULAR  
CLUB MEETINGS:**

**Monday, Dec 11, 6:30 p.m.**  
Shriner's Event Center  
1250 W Lancaster Rd.  
Hayden, Idaho  
Topic: Elections/Christmas  
Potluck  
Presenter: ???  
Refreshments: Everyone

**VE Testing**  
Monday, Dec 11, 5:30 p.m.  
1250 W Lancaster Rd.  
Hayden, Idaho

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

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

**Upcoming Events**

**KARS Officer Elections and  
Christmas Party  
December 11**

No column received as of press time.

Kootenai Amateur Radio Society  
November 2017 Meeting Minutes

The meeting was called to order at 7:01pm by Club President Dave Boss (KF7YWR).

Pledge of Allegiance was led by: Steve Mendez (KE7TCK).

VE Testing:

Melissa O’Neal, KI7QFJ	Attempted Extra
William Albertson	Passed Technician
Rick Bockmann	Passed Technician
Edwin Hanson, KI7QPG	Passed General
Christopher Stein	Passed Technician

Club Treasurer’s Report:

October - Checking \$3,574.50, Savings \$2,326.77, Petty Cash \$90.55, Total \$5,991.82.

Monthly income consisted of: Savings Account \$0.06; 50/50 Raffle \$10.50, Membership \$195.00

Monthly expenses consisted of: HRO – 6 Meter Repeater Antenna \$206.90, Home Depot – Wire, etc. for 6 Meter Repeater \$31.36

Motion to approve the Treasurer’s Report was made by Michael Slothower (KG7KSJ), 2<sup>nd</sup> by Lenny Gemar (N7MOT), motion passed by member vote.

Motion to approve the Secretary’s Minutes Report was made by Lenny Gemar (N7MOT), 2<sup>nd</sup> by Michael Glauser (WD6AYE), motion passed by member vote.

Brainstorming Session with the members at large for club activities, presentation ideas, and opinions on the direction the club should pursue. Ideas included: kit building, meeting/socializing with other ham club in the area, repeater expansion, digital system expansion (i.e. D-Star, IRLP, APRS, etc.)

Spokane Ham Radio Clubs will be holding a Christmas luncheon on December 16<sup>th</sup> at the Longhorn BBQ on Argonne in Spokane Valley.

KARS Nominations:

President Nominee: Larry Telles (K6SPP)

Vice-President Nominee: Jim Peterson (AD0AZ)

Executive Director Nominees: Lindy Bryant (KE0AZD) and Adam Crippen (N7ISP)

Secretary: Shelia Waller (KG7SAA)

Treasurer: Rod Anderson (K7ZBE)

Motion was made by Adam Crippen (N7ISP) to set aside the term limit for the Treasurer position until December 31, 2018, in order to allow Rod Anderson to continue to serve as Club Treasurer; motion was 2<sup>nd</sup> by Michael Slothower (KG7KSJ), motion passed by member vote.

Christmas Party will be held December 11<sup>th</sup> at the Coeur d’Alene Shriners building at 6:30 pm with VE testing starting at 5:30pm. The event is a pot luck dinner so please bring a dish to pass. Other activities include a gift exchange, door prizes, silent auction and music/dancing.

Adam Crippen (N7ISP) made a motion that the club provide a donation to the CDA Shriner’s for \$250, Rod Anderson (K7ZBE) 2<sup>nd</sup> the motion, motion passed by member vote.

Raffle Results:

50/50	\$14.00	Randall Porter, N7RLP (claimed)
Membership	\$105.00	Mike Selander, NOHMM (not claimed)

Jim Peterson (AD7AZ) made the motion to adjourn the meeting at 8:35pm, 2<sup>nd</sup> made by Michael Slothower (KG7KSJ), motion passed by member vote and meeting was adjourned.

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### Amateur Radio-Carrying D-Star One CubeSat among Spacecraft Apparently Lost

The first Amateur Radio satellite to employ the D-Star digital voice and data format - D-Star One - was among about 20 secondary payloads lost on November 28 after an otherwise nominal launch of a three-stage *Soyuz 2.1* booster from the new Vostochny Cosmodrome in the far reaches of eastern Russia. The mission carried the Russian *Meteor M2-1* satellite - the primary payload - as well as a Canadian *Telesat* experimental satellite, and 17 other secondary payloads, including D-Star One. According to reports, a fault occurred in the sophisticated and autonomous *Fregat* upper stage, which, after separating from the launch vehicle, inserts multiple spacecraft into their respective orbits. A so-called “space tug,” *Fregat* has been in service for nearly 2 decades and has suffered three previous failures. Russian space agency Roscosmos is investigating the *Fregat* failure.

D-Star One, the first German commercial CubeSat, carried four communication modules, two designated for Amateur Radio use. It was developed by German Orbital Systems in cooperation with the Czech company iSky Technology as part of a plan to eventually assemble a low-Earth orbit communication network.

“Hopefully, we’ll get another chance to utilize D-Star communications with a satellite repeater sometime in the future,” Wayne Day, N5WD, commented on the AMSAT-BB.

The *Fregat* upper stage functions as an orbital vehicle in its own right to access a range of orbital configurations through a series of “burns.” Made up of 6 spherical tanks arrayed in a circle, *Fregat* is “independent from the lower three stages, having its own guidance, navigation, control, tracking, and telemetry systems,” according to Gunter’s Space Page.

The November 28 launch was only the second from the new cosmodrome. (ARRL News)

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### Announcing: The ARRL International Grid Chase!

A new and exciting operating event will kick off on January 1, 2018, at 0000 UTC (New Year’s Eve in US time zones), when the ARRL International Grid Chase gets under way. The year-long event hopes to build on the success of the highly successful 2016 National Parks on the Air (NPOTA). The objective is to work stations on *any* band (*except* 60 meters) in as many different Maidenhead grid squares as possible, and then upload your log data to ARRL’s Logbook of The World (LoTW). Registration is free, and it costs nothing to use LoTW. Many hams are familiar with grid squares from the VHF/UHF and satellite realms, and everyone lives in one. ARRL’s VUCC is based on grid squares, and some contests on HF, as well as on VHF and UHF, also use them as a scoring factor.

John Morris, G4ANB, came up with the locator system, which the VHF Working Group adopted in 1980 at a meeting in Maidenhead, England - thus the term “Maidenhead grid square.” The system divvies up the entire globe into 324 fields, each containing 100 grid squares 1° latitude by 2° longitude in size. With 32,400 potential grid squares, it’s not likely that anyone will run out of challenges, even though some grid squares are surrounded entirely by water, are in areas that are uninhabited, or are difficult to access.

If you don’t know your grid square, David Levine, K2DSL, has an online calculator. Just enter a postal address, ZIP code or a call sign, and his site will tell you the grid square for that location. For example, enter

“W1AW” and the site will return “FN31pr.” For the purposes of the ARRL International Grid Chase, though, just the two initial letters and the two numbers that follow (e.g., FN31) are all you need to know.

Once you get active in the chase and start uploading your log data, each new grid square contact confirmed through LoTW will count toward your monthly total. Getting started is simple: Turn on the radio and call CQ or “CQ Grid Chase,” or listen for others doing the same. Make the contact, exchange grid squares, log it, and move on to another. At the end of each month, your totals on the Grid Chase Leader Board will reset to zero, although the system retains all monthly data to determine top finishers in various categories at the end of the year.

*Any* contact you make in 2018 can count for your Chase score; it doesn’t have to involve an exchange of grid squares. As long as the other operators participate in LoTW, you’ll get credit automatically when they upload their logs. This means that contest contacts will also count, as will contacts with special event stations, or other on-air activity that uses LoTW to confirm contacts.

Some radio amateurs live in sparsely populated grid squares, and if you’re one of those, you could find yourself handling a pileup! Expeditions to hard-to-reach or rare grid squares will undoubtedly evolve. You also can travel to one of those grid squares yourself. Some vehicle or hand-held GPS units can be set to display when you are in a particular grid square. Apps are available for smartphones or tablets, such as *Ham Square* for iOS devices or *HamGPS* for Android devices.

There are no restrictions on modes or bands, as long as they are legal. Satellite contacts are valid for the Chase. The event is open to *all* radio amateurs.

### Awards

As all contacts are uploaded to LoTW, participants may use their contacts toward other ARRL awards, in addition to the overall monthly and annual Grid Chase recognitions. These other ARRL awards include the grid-based VHF-UHF Century Club (VUCC) and Fred Fish Memorial Award, as well as Worked All States (WAS), WAS Triple Play, DX Century Club (DXCC), and Worked All Continents (WAC).

Complete details of the ARRL International Grid Chase will appear in the December 2017 issue of *QST*. The digital edition is available on Friday, November 10.

For more information, [contact](#) the ARRL Contest Branch. (ARRL News)

## Slow-Scan TV Transmissions from ISS Scheduled for December 6-8

ARISS has announced that the MAI-75 Slow-Scan (SSTV) system in the Russian Service Module of the International Space Station (ISS) will be on the air starting on December 5 at around 1500 UTC and continuing until December 6 at 0900 UTC, transmitting test images on 145.800 MHz FM that should be available worldwide.

SSTV activity on December 7 and 8 is scheduled to occur at times when the ISS is above Moscow. In the past images have been sent in PD180 mode, with a 3-minute off time between each image. - *Thanks to ARISS*

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## NASA KICKS OFF YEAR-LONG CELEBRATION OF MILESTONES

STEPHEN/ANCHOR: The U.S. space agency has big plans to celebrate its milestones via ham radio. Here's Paul Braun WD9GCO.

PAUL: On Monday the 11th of December, NASA has scheduled a launch for an adventure that's going to take the better part of a year to complete. This event involves radios, not rockets. NASA On the Air, or NOTA, is the year-long celebration of a variety of NASA milestones. Special event stations operated by ham radio clubs located at different NASA centers will be on the air marking such milestones as the agency's 60th anniversary, the 50-year anniversary of the first manned orbit around the moon and the two decades since the International Space Station's first elements entered low-Earth orbit.

Even though most of the events happen next year, mark your December calendars now: NOTA kicks off on the 11th of December, the 45th anniversary of the day Apollo 17 touched down on the lunar surface. It was the last of the agency's manned moon landings.

Successful contacts for all events will be sent commemorative QSL cards. Hams can also expect to receive special certificates noting each NASA club station contacted - as well as where and in what mode. There will be a scoring system with points awarded for each band and mode, whether it is phone, digital or CW or even satellite or meteor scatter. It goes without saying that contacts with Amateur Radio aboard the International Space Station definitely count!

For Amateur Radio Newline, I'm Paul Braun WD9GCO. (NASA)

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## FCC Chairman Recognizes Amateur Radio in Praising those Assisting Puerto Rico

Wrapping up a 2-day visit to Puerto Rico on Monday, FCC Chairman Ajit Pai, recognized Amateur Radio

volunteers in praising those who turned out to help the stricken Commonwealth in the wake of Hurricane Maria.

"[T]he worst of tragedies can also bring out the best in people. I saw that firsthand during my 2 days in Puerto Rico," Pai said. "Everyone is pitching in: The people of Puerto Rico helping their neighbors, hardworking Federal Emergency Management Agency staff - including communications personnel in Emergency Support Function #2 - the dedicated regulators of the Puerto Rico Telecommunications Regulatory Board, and the FCC's own Roberto Mussenden, who has spent the past month away from his family on the mainland in order to help the island where he grew up."

"Additionally, Amateur Radio operators, broadcasters, cable operators, fixed wireless companies, wireline carriers, and mobile providers have stepped up to the plate, working overtime to connect the disconnected," Pai continued. "All of this work reflects the ethos I saw on many signs and t-shirts during my time on the island: 'Puerto Rico Se Levanta' [Puerto Rico is Rising]."

Pai said recovering from Hurricane Maria will require an all-hands-on-deck effort, and the FCC "remains committed to doing everything we can to help restore communications networks as quickly as possible." He also expressed his belief that that "more funding will be needed" in the months ahead.

In October, the FCC granted ARRL's request to waive current Amateur Radio rules to permit data transmissions at a higher symbol rate than currently permitted, in order to facilitate hurricane relief communications between the continental US and Puerto Rico. The temporary waiver is limited to Amateur Radio operators in Puerto Rico using PACTOR 3 and PACTOR 4 emissions, and to those radio amateurs in the continental US who are directly involved with HF hurricane relief communications involving Puerto Rico or the US Virgin Islands, the Commission said at the time.

During his stay in Puerto Rico, Pai visited various parts of San Juan and towns along the northeastern coast. He also inspected a tower site and associated infrastructure on mountains in El Yunque National Forest. That infrastructure serves a critical role in providing connectivity in the eastern part of Puerto Rico, particularly for first responders. While there, he met with President Sandra Torres López and Associate Member Alexandra Fernández Navarro of the Telecommunications Regulatory Board, attended a briefing hosted by FEMA and attended by staff from ESF-2, the Army Corps of Engineers, the National Weather Service, the Small Business



Administration, and others, and with representatives from numerous communications entities, including fixed wireless providers and broadcasters.

“The path to recovery has met several challenges, most notably the lack of power and functional infrastructure,” Pai said. “One thing is clear: Overcoming these challenges won’t be easy.” (ARRL News)

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### Radio Amateurs in Colombia, Germany Get New or Expanded Bands

Radio amateurs in Colombia have been granted new allocations at 60, 630, and 2200 meters. The new allocations resulted from the efforts of the Liga Colombiana de Radioaficionados (LCRA) - with the support of its “strategic partner” Liga Radio Bogotá (LRB). Access to the new bands will be effective when the Colombian Communications Ministry grants the privileges by administrative act. The new allocations are 135.7-137.8 kHz (2200 meters); 472-479 kHz (630 meters); and 5,351.5-5,366.5 kHz (60 meters).

In Germany, radio amateurs there now have a 60-meter band plus an extended 6-meter band, the Deutscher Amateur Radio Club (DARC) reports. Amateur radio has been allocated the band 5,351.5-5,366.5 kHz at a maximum power of 15 W EIRP on a secondary basis. This is in accordance with the allocation agreed upon at World Radiocommunication Conference 2015 (WRC 15). In addition, hams now have access to a slightly expanded 6-meter band. The band 50.08-51.0 MHz previously allocated to the amateur radio service on a secondary basis will be expanded to 50.03-51.0 MHz at a maximum 25 W ERP. (ARRL News)

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### Radio Amateurs in Spain, Argentina Gain New and Extended Bands

Spain’s National Frequency Allocation Chart (CNAF) released on October 27 contained some good news for radio amateurs there. Spain now has adopted the global, secondary 60-meter Amateur Radio allocation of 5,351.5-5,366.5 kHz, as agreed upon at World Radiocommunication Conference 2015.

The Radio Club of Argentina has announced that hams in Argentina soon will have privileges in the 630- and 60-meter bands, as well as extended allocations at 160, 80, and 30 meters. The new allocations, which go into effect in 90 days, are 472-479 kHz (630 meters) and 5,351.5-5,366.5 kHz (60 meters).

Hams in Argentina also will be permitted to use 1,800-2,000 kHz in the 160-meter band; 3,500-4,000 kHz in the 80/75-meter band, and 10,100-10,150 kHz in the 30-meter band - the same allocations available in the US. (ARRL News)

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### Reputed World’s Oldest Ham Jean Touzot, F8IL, SK

Jean Touzot, F8IL, of Albi, France - said to have been the world’s oldest radio amateur - has died. The “dean of French radio amateurs,” Touzot was 109 and enjoyed operating CW with an old-fashioned hand key and a modern Yaesu transceiver. He “retired from the airwaves for health reasons” at age 105 in 2014, according to media accounts. Until then he had been active on the air, making daily contacts on 80-meter CW with other stations in France. In stepping back from his ham activity, Touzot said he no longer was able to send CW and made “too many mistakes.”

He was a member of France’s International Amateur Radio Union member-society REF as well as of the Union of French Telegraphists (UFT).

Born in Algeria, Touzot had been on the air since 1936 and had learned CW in 2 months during his time in the military. Prior to military service, he attended the Technical Institute of Toulouse and became an industrial designer, retiring in 1966.

Touzot received considerable acclaim in 2009, when he became a centenarian. Among his gifts was a special Morse key created especially for him.

No official records are kept to document who is the oldest radio amateur. (ARRL News)

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### New Digital Modes Changing Complexion of Bands and Perhaps of Ham Radio

The wave of software-based digital modes over the past several years has altered the atmosphere of the HF bands. Some suggest the popularity of modes that make it possible to contact stations neither operator can even hear has resulted in fewer CW and SSB signals on bands like 6 meters and 160 meters. Traditional modes require far more interaction and effort on the part of the operator; the newer digital modes not so much. The recent advent of the still-beta “quick” FT8 mode, developed by Steve Franke, K9AN, and Joe Taylor, K1JT - the “F” and the “T” in the mode’s moniker - has brought this to a head. Some now wonder if FT8 marks the end of an era and the start of a new, more minimalist age.

“We’ve been as surprised as anyone about the rapid uptake of FT8 for making QSOs on the HF bands,” Taylor told ARRL this week. Rather than viewing FT8 as a

total game-changer, he sees a dividing line between such digital modes and more traditional modes.

“SSB and CW are general-purpose modes,” Taylor asserted. “They are good for ragchewing, DXing, contesting, emergency communications, or whatever. FT8 and the other modes in WSJT-X are special-purpose modes. They are designed for making reliable, error-free contacts using very weak signals - in particular, signals that may be too weak for the more traditional modes to be usable, or even too weak to hear.”

Taylor notes that the information exchanged in most FT8, JT65, and other digital-mode contacts “is little more than the bare minimum for what’s considered to be a valid contact.” In addition to call signs and signal reports, stations may exchange grid squares and acknowledgments.

Radio amateurs recently commented in response to a Top Band Reflector post, in which Steve Ireland, VK6VZ, averred that because of FT8, “160-meter DXing has changed, perhaps forever” in recent weeks. Ireland said he downloaded FT8 but just couldn’t bring himself to use it on the air. “My heart isn’t in it,” he wrote. “My computer will be talking to someone else’s computer, and there will be no sense of either a particular person’s way of sending CW or the tone of their voice. The human in radio has somehow been lost.”

In his blog, Steve McDonald, VE7SL, compiled not only Ireland’s posts, but some responses to it, although not identified by name or call sign. One commenter suggested that the game-changing aspect of FT8 is that those who typically operate CW or SSB will gravitate to FT8. “The amount of activity on the FT8 frequency of any band is phenomenal,” the commenter observed. A few complained that no skill is involved in making contacts using computer-based digital modes.

Another suggested that FT8 is already falling victim to its own success, with too many stations crowding around the designated FT8 frequencies. Others were more philosophical, with remarks along the lines of this one: “It is allowing people who have smaller stations the opportunity to get on and use their radios and a computer to make contacts they never would have been able to make. This is great for ham radio!”

Taylor would agree. As he sees it, FT8 won’t replace modes such as CW or SSB. “Nevertheless, it’s clear that - at least in the short term - many hams enjoy making rapid-fire minimal QSOs with other hams, all over the world, using modest ham equipment,” he said. “For this purpose, FT8 shines.”

In a related “lightning talk” at the 2017 ARRL-TAPR Digital Communications Conference (DCC) earlier this year, ARRL Contributing Editor Ward Silver, N0AX, challenged his savvy audience to develop a keyboard-to-keyboard mode “between FT8 and PSK31” that would support casual and competitive operating, be more interference and noise tolerant, and be usable by those with “compromised” stations and antennas. He also challenged his listeners to develop a “smart” spectrum display that would identify signals by mode, so Amateur Radio could move away from the practice of setting aside specific frequencies for digital modes. (ARRL News)

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## SANTA NET ARRIVES ON 80 METERS

**STEPHEN/ANCHOR:** Our favorite ham radio stories this time of year are about the magic of Santa Nets. Our first story comes from Kevin Trotman N5PRE.

**KEVIN:** As any kid will tell you, the best kind of Santa is one who doesn’t make you wait until December 25th, right? Well we’ve got one Santa who is already here: The nightly Santa Net went on the air on Friday the 24th of November and will be available every night at 7:30 p.m. Central Time through Christmas Eve. The tradition is into its 12th year and is operated by the 3916 Nets, the Rag Chew Crew, the Tailgaters and the Freewheelers. Pre-net check-ins begin nightly at 7:15 p.m. Central Time and are also accepted on the Santa Net’s Facebook page. Find Santa each night on 3.916 MHz. No milk and cookies needed - but don’t be on the naughty list: please observe all FCC rules regarding third party traffic.

For Amateur Radio Newline, in Aiken, South Carolina, I’m Kevin Trotman N5PRE.

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**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: \_\_\_\_\_

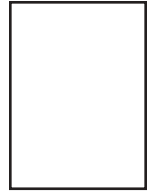
Name: \_\_\_\_\_ Call: \_\_\_\_\_ Class: \_\_\_\_\_

*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**

President: Dave Boss, KF7YWR  
president@k7id.org

Vice-President: Lindy Bryant, KE0AZD  
vicepresident@k7id.org

Exec. Director: Lenny Gemar, N7MOT  
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Secretary: Adam Crippen, N7ISP  
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208 691-4735 N7MOT@gemar.org

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.