

October 2017

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

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

## **REGULAR CLUB MEETINGS:**

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

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

**Monday, Nov 13, 7:00 p.m.**  
**Search & Rescue Bldg.**  
**10865 N. Ramsey Rd**  
**Hayden, Idaho**  
**Topic: ???**  
**Presenter: ???**  
**Refreshments: ???**

**VE Testing**  
**Monday, Nov 13, 5:30 p.m.**  
**10865 N. Ramsey Rd**  
**Hayden, Idaho**

### **Upcoming Events**

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

No Column received from Club President as of publication date.

Kootenai Amateur Radio Society  
September 2017 Meeting Minutes

The meeting was called to order at 6:58pm by Club President Dave Boss (KF7YWR).

Pledge of Allegiance was led by: Dan Smith (N6HRT).

VE Testing:

Trina Baier – Passed Technician Examination  
Shane Warner – Passed Technician Examination  
Melissa O’Neil – Passed Technician Examination  
Kevin Smith – Passed Technician Examination

Motion to approve the Secretary’s Minutes Report was made by Lenny Gemar (N7MOT), 2<sup>nd</sup> by Jim Peterson (AD0AZ), motion passed by member vote.

Club Treasurer’s Report:

August - Checking \$3,604.26, Savings \$2,276.65, Petty Cash \$90.55, Total \$5,971.25.

Monthly income consisted of: Savings Account \$0.05; 50/50 Raffle \$6.00, Membership \$61.00

Monthly expenses consisted of: Ink and Laminate \$66.58, Additional tickets for North Idaho Fair Volunteers \$90.00, Flyers and Card Stock \$50.23, Padlock for North Idaho Fair gear \$6.87, Water/Ice for North Idaho Fair \$23.16  
Motion to approve the Treasurer’s Report was made by Frank TenThy (KG7CUI), 2<sup>nd</sup> by Lindy Bryant (KE0AZD), motion passed by member vote.

North Idaho Fair Event Recap – Thanks to all who volunteered, the event did stir up some interest from fair-goers.

Canfield Weed Patrol took place without any injuries, minus some dead weeds.

SATERN Net – Salvation Army Net Control occurs every morning starting about 7:30 or 8am. On or about 14.265 MHz. SATERN network is relaying health and welfare information for hurricane relief. All are asked to tune in.

Meeting Presentation: CTCSS (PL) Tones in Amateur Radio was presented by Lenny Gemar (N7MOT). Copy of the presentation is available on the k7id.org website.

KARS Nomination Committee has been formed, the nomination committee will be contacting members of KARS and inquiring about your interest in serving on the

Board for the coming 2018 term. Please consider serving your ham radio club. Please feel free to contact those on the Nomination Committee or a current Board Member if you are interested in serving as a Board Member for the coming year.

President Committee choice: Dan Smith, N6HRT

Board Committee choice: Jim Peterson, AD0AZ

Members-at-large Committee choice: Steve Murphy, KG7UWB

Lenny Gemar (N7MOT) made the motion to approve the Nomination Committee Members as chosen, 2<sup>nd</sup> made by Adam Crippen (N7ISP), motion passed by member vote.

The FCC is cracking down on federal felony convictions and is now inquiring on FCC Form 605 about any federal felony convictions, this includes renewal applications.

Raffle Results:

50/50 \$8.00 Lenny Gemar, N7MOT (claimed)

Membership \$74.00 Michael Harrel, KJ6UTK (not claimed)

Gary Roth (KE7IAT) made the motion to adjourn the meeting at 9:02pm, 2<sup>nd</sup> made by Adam Crippen (N7ISP), motion passed by member vote and meeting was adjourned.

---

Amateur Radio Cheat Sheets

This is a collection of programming helps (also known as “Cheat Sheets”) for many common amateur radios. Thanks to the Roane County Amateur Radio Club (KE4RX in Tennessee) for compiling this list!

<http://www.ke4rx.org/cheatsheet/>

---

Amateur Radio Reports: Arecibo Observatory Dish Sustained Serious Damage from Maria

Articles on the *National Geographic* and *Space.com* websites report that scientists and Amateur Radio operators have confirmed that Puerto Rico’s *Arecibo Observatory* came through Hurricane Maria largely intact but “with some significant damage.” Universities Space Research Association (*USRA*), which helps to operate the Observatory, said it learned via “short wave radio contact”

that staff and family members sheltering at Arecibo are safe.

“The major structures, including the 300-meter telescope, are intact, though suffered some damage when the atmospheric radar line feed broke off, and falling debris from it punctured the dish in several places,” USRA reported on its website. “Also, a separate 12-meter dish used as a phase reference for Very Long Baseline Interferometry was lost.”

Observatory officials are still assessing the damage, but Jim Breakall, WA3FET, of Penn State, told ARRL that the 96-foot line feed antenna at 430 MHz is “historically the key piece to the observatory.” It’s also the antenna that he and others have used for Amateur Radio moonbounce activities from Arecibo. The Observatory is home to KP4AO.

“To hear that this 10,000-pound key piece to the Observatory fell and hit the 1,000-foot dish is just a huge shock,” Breakall said Saturday. “This antenna was connected to the 2.5 million W 430-MHz radar transmitter that was a key to ionospheric experiments. It is a great loss for sure.”

Angel Vazquez, WP3R - the Observatory’s telescope operations manager - was among the only radio amateurs able to pass along any information; among those he contacted was Princeton University professor and Nobel Laureate Joe Taylor, K1JT. Vazquez is using a generator that, Breakall told ARRL, was not working very well. “Many others have heard about all of this and have come to help relay messages to loved ones and friends to let people know they are okay,” Breakall added.

Breakall said he’s less concerned to learn that his own Amateur Radio contest station, built on a hill on his 12-acre farm not far from the Observatory, was destroyed by Hurricane Maria. “Angel said it is totally destroyed,” he said. “While this is sad for me and others, my concern is with the safety and health of many friends and the people of Puerto Rico in General. This is my second home, and many of the people there I treat as my brothers and sisters.”

USRA has reported that the access road to the Observatory is covered with debris and impassable.

The *National Geographic* article said that the Arecibo’s staff had begun to prepare the day before Maria arrived on September 20, but power went down and, not long afterward, telephone service. Power is reported to be out across much of Puerto Rico.

Amateur Radio may still be the only reliable communication link with the Commonwealth. “It was reported that Amateur Radio seemed to be the only communications that were operational and that was somewhat limited, as many 2 meter repeater systems were still not operational,” Salvation Army Team Emergency Radio Network ([SATERN](#)) National Liaison Bill Feist, WB8BZH, said in a SATERN update today. “There is no operational public water system, and many local roads are impassable although some major roads have been cleared.”

Breakall told ARRL that he’s worried about what might happen in the weeks and months ahead. “I just hope that desperation does not set in, and things get out of hand there,” he said. “It is going to be very tough.” (ARRL News)

---

ARRL Reminds Amateurs to Keep Clear of Frequencies Designated for Puerto Rico-Caribbean Emergency Response

ARRL reminds Amateur Radio operators that emergency communications are taking place on and around 14.265, as well as other frequencies. Please avoid these frequencies whenever possible, to allow for emergency communications to transpire clearly and efficiently.

If you must be on the air in the vicinity of these frequencies, please allow emergency operators at least 2 or 3 KHz on each side. Thank you for your consideration of your fellow Amateur Radio operators who are doing important work in Puerto Rico and the Caribbean. (ARRL News)

---

FCC’s Updated Rules Governing Personal Radio Services Became Effective on September 28

The FCC recently adopted a comprehensive [reorganization of and update](#) to the rules governing the

Personal Radio Services (PRS). These include a wide variety of wireless devices used by the general public for personal communication, including hand-held Family Radio Service (FRS) transceivers, radio-controlled models, Personal Locator Beacons (PLBs), medical implant devices, and others.

In addition to the updated rule changes, the FCC enhanced the General Mobile Radio Service (GMRS) to allow new digital applications, allot additional interstitial channels, and extend license terms from 5 to 10 years. It also allotted additional channels to the FRS and increased allowable power on certain FRS channels from 0.5 W to 2 W. It also updated the Citizens Radio Service (CB) rules to allow hands-free headsets, eliminate a restriction on DX communication, and remove other outdated requirements.

“These changes and others will update PRS rules to be more in line with current public demands for the services and will make the rules easier to read and find information, while also removing outdated requirements and removing unnecessary rules,” the FCC said. (ARRL News)

---

#### FCC Opens 630- and 2200-Meter Bands; Stations Must Notify UTC Before Operating

The FCC has announced that the Office of Management and Budget has approved, for 3 years, the information-collection requirement of the Commission’s March 29 *Report and Order (R&O)* that spelled out Amateur Radio service rules for the two new bands - 630 meters and 2200 meters. Notice of the action appears in today’s edition of the *Federal Register*. Before using either band, stations must **notify** the Utilities Technology Council (UTC), formerly the Utilities Telecom Council, that they plan to do so, and if UTC does not respond within 30 days, they may commence operation.

Last March 27, the FCC adopted the 2012 World Radiocommunication Conference (WRC-12) implementation Report and Order (ET Docket 15-99), amending its Amateur Radio rules to - in the FCC’s words - “provide for frequency-sharing requirements in the 135.7-137.8 kHz (2200-meter) and 472-479 kHz (630-meter) bands.”

Section 97.313(g)(2) of those rules requires that, prior to starting operation in either band, radio amateurs must notify UTC that they intend operate by submitting their call signs, intended band(s) of operation, and the coordinates of their antenna’s fixed location. The new rules do not permit any mobile operation.

“Amateur stations will be permitted to commence operations after a 30-day period, unless UTC notifies the station that its fixed location is located within 1 kilometer of Power Line Carrier (PLC) systems operating on the same or overlapping frequencies,” the FCC said. PLC systems are unlicensed. “This notification process will ensure that amateur stations seeking to operate [on 630 or 2200 meters] are located beyond a minimum separation distance from PLC transmission lines, which will help ensure the compatibility and coexistence of amateur and PLC operations, and promote shared use of the bands.”

The FCC announced that it is making effective immediately the Part 97 rule amendments, § 97.3, 97.15(c), 97.301(b) through (d), 97.303(g), 97.305(c), and 97.313(k) and (l), which do not require OMB approval. (ARRL News)

---

#### Revised ARRL Frequency Chart Now Available

An updated ARRL frequency chart is now available for printing and downloading at <http://www.arrl.org/graphical-frequency-allocations>. The chart has been updated to include our new bands at 2,200 and 630 meters.

The new chart is available in the following PDF formats:

- 8.5 x 11 grayscale
  - 8.5 x 11 black and white
  - 8.5 x 11 color
  - 11 x 17 color
- (ARRL News)

---

TUNISIA LEGALIZES INDIVIDUAL LICENSES  
JIM/ANCHOR: There are some major changes for amateur radio operators in Tunisia as we hear from John Williams VK4JJW.

JOHN’S REPORT: In Tunisia, only club stations could once be licensed for amateur radio operations. Now

individual Tunisians who pass a qualifying exam can get a license of their own — and those who already have a license from another country can operate legally on the air. All of this became possible in September under new licensing arrangements decreed by the nation's Ministry of Telecommunications. Resident foreigners are also permitted to apply for a license.

The previous regime had viewed individual ham radio operators unfavorably, according to the website of the International Amateur Radio Union. A radio association called ARAT was created by young Tunisians in 2011 following the Jasmin Revolution. ARAT's recognition by the government encouraged other radio organizations to form. ARAT is a recognized member of the IARU.

ARAT is credited with being one of the strongest proponents for individual licenses and drafting a document to create the new licensing system. The group discussed with ASTRA, another recognized association of Tunisian amateurs, and establishing a rapport with the ministry and the National Agency of Frequencies.

Last month's decree now appears in the Official Journal of the Tunisian Republic and new individual license-holders will soon start appearing on the air.

For Amateur Radio Newline, I'm John Williams VK4JJW.  
(IARU REGION 1)

---

### New 10-GHz Earth-Moon-Earth World Record Set

A new 10-GHz Earth-Moon-Earth (EME or moon bounce) world record has been set. On September 9, Rex Moncur, VK7MO, and Jim Malone, WA3LBI, completed a 18,949.4-kilometer contact using *QRA64D*. This extends by approximately 600 kilometers the previous world record of 18,337 kilometers held by DL7FJ and ZL1GSG, who used CW.

The participants said the key was to find locations with nearly 0° take-off, which essentially means across water. VK7MO operated from OF76nk at Meelup in Western Australia; WA3LBI operated from FM28io in Delaware. Both stations operated portable. Coincidentally, "Meelup" is an aboriginal word meaning "place of the rising Moon."

VK7MO ran 50 W to a 1.13-meter dish using linear polarization. WA3LBI ran about 125 W to a 2.4-meter dish, RKI feed by Bert Moderman, circular polarization, mounted on a trailer. The loss in going from linear to circular polarization was somewhat less than the expected 3 dB, due to depolarization at the Moon surface (probably around 2 dB).

The time was chosen to maximize the Moon window when spreading was low at 34 Hz and lunar degradation low at 0.8 dB.

WA3LBI was first decoded at -23 dB at 1317 UTC when ground noise would be an issue, as the Moon was at 0° and only partially visible. His signal later peaked at -19 dB, when the elevation was around 2° at VK7MO. In addition to the basic contact requirements, some text messages celebrating the record were also exchanged.

Afterward, VK7MO worked Al Ward, W5LUA, with strong signals up to -14 dB, followed by a second contact with WA3LBI, whose signal peaked at -17 dB and dropped to -23 dB at 1353 when WA3LBI lost the Moon. (ARRL News)

---

### More Professional and Citizen Research Suggests Eclipse Briefly Affected HF Propagation

Both professional and citizen scientists conducted formal and informal investigations into the effect of the August 21 solar eclipse on HF radio propagation. Nathaniel Frissell, W2NAF, of [HamSCI](#), has said it will take some time to get a more scientific analysis of data compiled during the Solar Eclipse QSO Party. Frissell and others are investigating whether the sudden absence of sunlight during the eclipse - and especially of solar ultraviolet and x-rays - would briefly change the properties of the upper atmosphere. Professional ionospheric researcher Phil Erickson, W1PJE, of the Atmospheric Sciences Group at [MIT's Haystack Observatory](#), said he can say categorically that there was a definite, large, and measurable effect in the ionosphere from the eclipse.

"We saw a 2X reduction in electron density during the eclipse for at least 45 minutes to 1 hour," Erickson told ARRL. "This reduction had direct impacts on HF propagation along the bottom side." Erickson said many models and observations exist from previous eclipses that demonstrate these effects. Erickson said MIT researchers used a "megawatt-class Thomson scatter radar" which can directly measure the plasma state of the ionosphere, including electron density, across a huge area in the eastern US.

"Scientists in the worldwide space physics community will be using these and many other eclipse observations to learn more about our ionosphere, space weather, and its

effects on navigation and communication signals including amateur radio,” Erickson said. He has shared his data with the HamSCI team.

Bob Reif, W1XP, was in North Carolina where the eclipse totality was about 97%. “I had two radios running multi bands of *WSPR*,” he reported. “Lots of data to look at, but what jumped out was that at almost the exact time of maximum coverage of the sun at this location, 160 meters opened for about 30 minutes and then closed down again till the normal gray line. So the D layer responded to the shadow of the moon to some extent.”

Gene Greneker, K4MOG, in Georgia told ARRL that his own eclipse experiment “worked out rather well.” He set up an RFSpace NetSDR receiver at his location, locked to a 10-MHz GPS standard and tuned to WWV on 15 MHz. “The NetSDR provides in-phase and quadrature components of the WWV signal, which allows relative signal phase to be reconstructed from recorded data,” Greneker explained in a more-detailed account.

“Signal phase-vector rotation change was chosen to indicate totality arrival, because phase is very sensitive to any change in propagation path length, possibly caused by ionospheric movement, up or down. Solar presence or absence can cause vertical ionospheric movement.”

Greneker recording the phase of the 15-MHz WWV signal from 1800 UTC until 1900 UTC on August 21. “Each time the path length changes by 1 wavelength, there is a 360° change in the phase of the signal,” he said. Greneker offset the path of totality to the south, running parallel to the path between WWV in Fort Collins, Colorado and his location in Atlanta.

Greneker assumed that the reflection point off the ionosphere was south of Kansas City, and, he said, the minimum dip in the phase record occurred very close to totality at that location. “At 1809 hours UTC, when the totality point was parallel to the midpoint of the propagation path, the path length increased from zero wavelengths to 157 wavelengths, or 3,140 meters, during the intervening 9 minutes.” He reported. As totality moved southeast solar radiation began to increase and the path

length decreases as the ionospheric reflecting point moves downward.

Bob Skaggs, KB5RX, told ARRL he spent about 4 hours in the central part of Mission Valley, Montana, listening to conversations on various 20-meter frequencies with a low antenna. “At maximum of the eclipse the propagation went almost to nothing for maybe about 15 or 20 minutes,” he said. “As the eclipse resided, signals came back up.” Skaggs tried 17 meters for 5 minutes at 1800 UTC and heard “no signals at all.”

He also said the local animal population responded to the eclipse as if evening were approaching. (ARRL News)

---

This space intentionally blank.

---

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

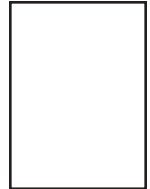
Name: \_\_\_\_\_ Call: \_\_\_\_\_ Class: \_\_\_\_\_

*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  
N7MOT@gemar.org

Secretary: Adam Crippen, N7ISP  
secretary@k7id.org

Treasurer: Rod Anderson, K7ZBE  
treasurer@k7id.org

Newsletter Editor: Gary Roth, KE7IAT  
509 993-8468 ke7iat@comcast.net

Repeater Trustee: Larry Telles K6SPP

Repeater Tech: Dale DuRee, KE7VMN

Webmaster: Lenny Gemar, N7MOT  
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.