

Propagation

Kootenai Amateur Radio Society (KARS) Newsletter

MAY 2005

PRESIDENT'S CORNER

Spring is nearly here! Well I guess that is relative. If you are in the Northeast and Midwest, you may not agree! The last few days have me looking at all the things I want to do outside, but more on that later.

Jack, K7JMC, has really done a fantastic job in organizing the meeting topics for this year. If you missed the last two meetings, you missed a couple of great presentations on Contesting and RS-232 made by Ed Stuckey, AI7H and Larry Telles, K6SPP respectively. It is amazing the knowledge and talent we have in the club and it just keeps getting better.

The next KARS meeting will be Monday, May 9th so mark your calendars. I'm also looking forward to this month's presentation on Wire Antennas by Randy, KB6YAV, the former KARS president. I have some ideas of wire antennas I want to put on the hill behind the house and I am extremely interested in Randy's information.

Our first outdoor event of the year is coming up this month. May 14th is the scheduled "Spring I-90 Clean-up and free participant's Lunch". Randy will have the details at the next meeting.

Mark your calendars for the JUNE meeting. Notice it is not on the normal Monday night, but moved to Friday, June 10th. We will be meeting at the Lion's Club building in Rathdrum.

(continued on page 5)



Apologies to those who received the newsletter by U.S. mail with the error in the story about the North Idaho em-comm net--the North Idaho emergency comm net is on 3990 Khz, not 3990 Hz (well--some of it is on 3990 Hz, but you can only hear that if you are mike-side.

BITS & PIECES de K7JMC

A Hodge Podge

Field Day site: Unfortunately our land purchase did not go thorough. So, the Rathdrum mountain location will not be available. I am sure Ed (AI7H) will come up with a great place for Field Day.

Two-meter procedure: recently I had the good fortune to hear a very good two-meter procedure that we all could learn from.

(continued next column)

IN THIS ISSUE

- Packet Radio--Part IV
(see page 3)
- Volunteer operators needed
(see page 5)
- KARS Hamfest 2005
(see page 5)

A (newer) local amateur made a contact on the 147.08+ machine. He then suggested that they QSY to the KARS machine on 146.98- in order to not tie up the RACES repeater. THAT was good two-meter procedure!! It might be a good lesson for all of us. The RACES repeater just might be better used if it were the "calling channel repeater" in the area. Once contact is made, determine if you can hear the other party on the "input." If you can, then QSY to a simplex frequency like 146.52. If you can't, then QSY to the KARS repeater. Of course this cannot be a forced issue, but KARS members can take the lead and start using this technique and see if it rubs off on others.

Regards,
Jack/K7JMC

FRONT PAGE HUMOR

Two cows are standing in the pasture--one says to the other, "I was artificially inseminated last night." The second says, "I don't believe you!" The first replies, "It's true--no bull!"

An invisible man marries an invisible woman--the kids were nothing to look at either.

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

KARS operates voice repeaters on 146.980 and 444.775 MHz and a packet repeater on 145.510 MHz. KARS normally holds meeting at 1900 hrs, on the second Monday of each month in the Shep Rock Building at the Coeur d' Alene Airport.

Anyone interested in Amateur Radio is welcome to join. Dues are \$12.00 (individual) and \$18.00 for a family membership. Contact the Treasurer (see page 6) to join KARS.

KARS e-mail Directory

Anderson, Avon W7WBZ w7wbz@yahoo.com
 Austin, Bert N7KKI bert@dawghaus.net
 Austin, Joyce KD7DIT bert@dawghaus.net
 Bak, Victor K3SHD k3shd@arrl.net
 Carlson, Randy KB6YAV kb6yav@cet.com
 (also for Eric [KD7RVZ] & Jean [KD7RVY] Carlson)
 Chamberlain, L. N7UTK lindafc@adelphia.net
 Churchill, Rick KD7DIJ churchill@icehouse.net
 Conklin, Warren WB7EBU wconklin@imbris.com
 Cothorn, Bill N7VVK & Glo KC7EUJ globile@aol.com
 Cowan, Art W7COZ w7coz@earthlink.net
 Frost, Mel KD7DCR bgsalesmel@cs.com
 Hall, Dennis KK7X kk7x@countyhunter.com
 Hogeweide, W. K7ETJ k7etj@icehouse.net
 Hogeweide, M. WB7WUB k7etj@icehouse.net
 Hollar, John N7JU n7ju@arrl.net
 Hooper, Jerry KA7RNX ka7rnx@netzero.com
 Hopkins, John KC7MDX kc7mdx@msn.com
 Hopkins, Lee K7OOJ k7ooj@thunderbolt.net
 Kasper, Brad KA5PER ka5per@icehouse.net
 Kesson, Robert K7CGA k7cga@arrl.net
 Kliiger, Frank K9ALF k9alf@arrl.net
 Kuenzinger, Pete N0ENC p.kuenzinger@verizon.net
 Larson, Hal N7DOI n7doi@aol.com

Linden, Jennifer K7WBB k7wbb@arrl.net
 Linden, Jim N7JIL n7jil@arrl.net
 Longtin, Kenneth KE7BDA kenlongtin@juno.com
 McElroy, Jack K7JMC k7jmc@yahoo.com
 McFarland, Bob K7QS kc7vag@aol.com
 (also for Barbara [KD7BGG].Ross [KD7CDA] & Vic [N7VX])
 McQuiston, Steve WO6LF slmcquiston@earthlink.net
 Miller, Jim N8BNI n8bni@adelphia.net
 Monroe, Chris N7ZUJ ckay@my180.net
 Monroe, Jim N7ESU n7esu@arrl.net
 Newell, Dale N7FPJ sndnewell@yahoo.com
 Pittsley, Bob KC7RNT kc7rnt@icehouse.net
 Richmond, Tom K7PEJ k7pej@arrl.net
 Rosie, Bob W7GSV rrosie@icehouse.net
 Sausser, Brad KB7FUN brad@acm.org
 Siebenthal, Verda K7UBC verda_k7ubc@msn.com
 Stuckey, Edward AI7H ai7h@arrl.net
 Telles, Larry K6SPP ltelles@icehouse.net
 Ward, Chris K7CBW chris@k7cbw.com
 Weir, John AE4CU ae4cu7@yahoo.com
 Welle, Annie KE7ADK wellerose@yahoo.com
 White, Darrel N7ZUI n7zui@icehouse.net
 Williams, Ken W7LQT w7lqt@yahoo.com
 Zion, Harvey K7VZ k7vz@earthlink.net

CALENDAR OF EVENTS

DATE/TIME	EVENT	LOCATION
09 May at 7 p.m.	KARS monthly meeting	Kootenai Co. Airport-- Shep-rock Building
16 May at 7 p.m.	RACES/ARES meeting	Kootenai Co. Sheriff's Department Basement
Every Wednesday at 8 a.m.	Donut Day	Rathdrum Super 1 store (on Highway 53)
Second Saturday each Month, 9 a.m. to 11 a.m.	NW Traffic Net Coffee Klatch	Steve's Dugout In Post Falls, ID

Next KARS Meeting:

**Monday, 09 April 2005 at
7:00 p.m. in the Shep-rock Building
at Kootenai County Airport.**

Directions to the KARS meeting:

**North on U.S. 95 to Miles Ave. (Miles is about
one mile North of Hayden Avenue). West on
Miles to the airport gate (access code 1088).
Bear left to the Shep-rock Building (about 200
yards from the gate).**

PACKET RADIO: A PRODUCT OF THE COMPUTER AGE

by Larry Telles, K6SPP

PART FOUR: The overall operation of two packet stations.

Now that you are totally confused, let us look at what happens when you decide to get on the air with packet. I am not going to go into all of the packet commands or the packet equipment necessary. The list of commands is very long and is the list of possible new and used equipment. Another subject I'm not covering is equipment configuration and setup. The installation manual will instruct you on how to setup the components, and make the cables necessary to inter-connect to your computer, packet device, transceiver or handheld radio.

This final installment will cover a make believe packet QSO between Bob K7CGA and Randy KB6YAV. Some commands and screen displays in this operation may vary slightly because of the different types of software being used today. I'll start with a very brief look at some basic information on the three elements; computer, TNC, and transceiver.

The packet device (TNC, etc) is the traffic cop in this form of communication. It is designated DCE (Data Communications Equipment). Your computer terminal is designated DTE (Data Terminal Equipment). All connections are viewed from the DTE. The digital side (between computer and the TNC) is controlled by RS-232. Usually only three (3) wires are used on this side of the equipment, Transmit Data (TD), Receive Data (RD), and Signal Ground (SG). Some programs want to see Data Set Ready (DSR) to know that the TNC is ready for operation. The same could be true for Data Terminal Ready (DTR). Also in some cases, Data Carrier Detect (DCD) is needed by some software to know that a connection has taken place. If your computer requires DSR and DCD, it is perfectly acceptable to jumper all three pins (DTR, DSR, and DCD) together on the computer end of the cable. The installation manual should be read cover to cover before you start.

The analog side of the operation (TNC to your transceiver), are two connections. One is the mike jack and the other your speaker. The TNC operates the push-to-talk when instructed to do so via your TNC. Once the equipment is connected and configured, on the air operation is next.

K7CGA wishes to connect with KB6YAV, so K7CGA commands his packet-radio device to initiate the connection. He types "Connect KB6YAV <CR>". (The term "CR" stands for Carriage Return in reference to a standard typewriter used when packet was first introduced. On a PC this would be the "enter" key, and "return" key on a Macintosh). In response to the command, the K7CGA's packet device constructs a frame with "KB6YAV0" in the destination address field and "K7CGA0" in the source address field. The control field is set as an SABM frame (*Set Asynchronous Balanced Mode*). This SABM frame is transmitted to KB6YAV-0 and the acknowledgment timer (T1) is started at K7CGA. T1 is equal to at least twice the amount of time it takes to transmit the longest possible frame plus the amount of time it takes for the destination station to transmit the proper response frame. If one or more digipeaters are involved in the route, T1 should be adjusted accordingly.

If KB6YAV-0 is monitoring the channel and is able to accept K7CGA's request for a connection, KB6YAV's packet device will respond to the SABM frame with a UA frame (*Unnumbered Acknowledgment*). In addition, K7CGA's monitor will display, "***CONNECTED to KB6YAV-0". If KB6YAV is busy and unable to accept connect request, the packet device would respond with a DM frame (*Disconnect Mode*) and the far end display would be, "***KB6YAV-0" followed by "*** DISCONNECTED".

When K7CGA receives KB6YAV's response, his packet device cancels the T1 timer. If a UA frame was received, K7CGA enters the data-transfer mode. If no response was received before T1 times out, K7CGA continues to transmit SABM frames until a response is received or until the maximum number of retries configured by K7CGA's packet equipment is reached. Then the display would be "***retry count exceeded" followed by "*** DISCONNECTED".

The two stations are connected in the data-transfer mode. K7CGA transmits data to KB6YAV by his packet device in the form of I frames. As each new I frame is transmitted, the T1 timer is started, or restarted, by the transmitting end. A maximum of seven I frames can be outstanding (unacknowledged) at one time.

If KB6YAV receives the I frame in proper sequence and without error, he sends an acknowledgment of reception. If KB6YAV receives an I frame out of sequence, the frame is discarded and a REJ frame (*Reject*) is transmitted.

(continued on page 4)

Packet Radio

PART FOUR: The overall operation of two packet stations

(continued from page 3)

Out of sequence means that an I frame was received in a different order than it was transmitted by the source station. (Each frame contains a sequence number). When the receiving station (K7CGA) receives a REJ frame, it retransmits the rejected frame.

The destination station also discards an I frame if the frames FCS (*Frame Check Sequence*) does not match the calculated FCS. In this case, the destination station does not send an REJ, RR, or RNR. As a result, the source station's T1 timer runs out and the source station retransmits the frame and restarts T1.

When the QSO between K7CGA and KB6YAV is completed, either station may initiate a disconnection. The process is accomplished by entering the command mode and typing "Disconnect" at the command prompt. In response the packet device transmits a DISC frame (*Disconnect*) to the distant station and starts its T1 timer. The receiving station responds by sending a UA frame and entering the disconnection mode. When that UA frame is received by the station initiating the disconnection, it cancels the T1 timer, enters the disconnection mode, and displays "****DISCONNECTED". If no response is received before the T1 times out, the station retransmits the DISC frame until a response is received, or until the maximum number of retries is reached. The display, "***retry count exceeded" followed by "**** DISCONNECTED".

There is a lot more material that I left out, because space didn't permit it. But, I think you have a better idea of what happens in a typical QSO on Packet Radio. After going over this material I think I'll find my Kantronics TNC, take it out of the box, make up some cables, and connect it to my transceiver. That TNC has been waiting for this day since 1991.

I hope you've picked up a couple of things from these four articles. I would like to thank Editor Stevan, WO6LF for giving me this opportunity to have this four part packet material printed.

73, Larry, K6SPP

Upcoming VEC/VE Licensing Exams for Our Area

- 12 May 2005 (Thursday), 5:00 p.m.; Tidyman's Grocery, 13014 E. Sprague Avenue, Spokane Valley, WA; Contact Mary Qualiteri (AA7RT), phone 509/991-2192; e-mail aa7rt@arri.net.
- 15 May 2005 (Sunday), call for time; Walla Walla College, Industrial Technology Building, SW 4th and Bade Streets, College Place, WA. Contact: Mable Babbitt (WB5AVH), 509/525-7003 or wa5zay@msn.com
- 19 May 2005 (Tuesday), 7 p.m.; University High School, Room E102, (just inside main NE entrance), 12420 E. 32nd. Street, Spokane, WA. Contact: Betsy Ashleman (N7WRQ), 509/448-5821 or n7wrq@aol.com

Get or upgrade your ham radio license!

Anyone interest in getting or upgrading a ham license is encouraged to contact one of the officers of the Kootenai Amateur Radio Society (see list--page 6). Members of the Society will gladly help with guidance and/or mentoring. Do it now! Fun ahead!

President's Corner
(continued from page one)

At that meeting we will set-up for the KARS Hamfest (which takes place the next day), get the final Field Day Report, and have another great presentation ("Planning for Field Day") by Ed, AI7H.

IRONMAN is coming up fast and so is Field Day. If you are going to participate in one or both of the events get signed up (see adjacent article) and let's make this a real HAM weekend. If you want to participate in the KARS Field day, let Ed, AI7H or Jack, K7JMC know so they can include you in their planning, which is underway. I have it on good authority that the weather will be in the mid to upper 70's with a nice afternoon breeze on both days. I got that directly from ACCUGUESS!

It sure looks like we are heading for a FUN Summer! DON'T MISS IT!! Remember, this club is ALL ABOUT YOU!

Bob/K7CGA

VOLUNTEER COMMUNICATORS NEEDED

Ironman and Field Day (separate events, same weekend)

Ironman CdA 2005 is scheduled for 26 June 2005--the Kootenai County RACES/ARES group will, as in past years, provide communications services for the event. To participate with the RACES/ARES group for this event, you must register--see steps below.

- Go to <http://www.ironmancda.com/volunteer/index.php>
- Complete the first 12 boxes with your information, as appropriate. (Don't forget your shirt size)
- In the next three boxes (First, Second, and Third Choices), scroll down and highlight "Communications" in all three boxes.
- Continue down the page and in the Comment Section, enter: "Working with the Amateur Radio Team under Andy Emberton."
- Click "Sign Me Up" button.

When sending emails to Bob Kesson (K7CGA) regarding Ironman, put the word "Ironman" anywhere in the Subject: line. (Bob is the coordinator for RACES/ARES for Ironman CdA 2005)

Volunteers are also being sought for a second activity also occurring on the weekend of 26 June--that activity being the annual ARRL-sponsored Field Day. If you want to participate in this activity, please contact Ed Stuckey (AI7H) at ai7h@arrl.net. Ed is looking for radio operators, for people to help set-up and tear down field operating positions, and for people willing to loan equipment (radios, power supplies, generators, etc) for the weekend. This would also be a good opportunity to introduce un-licensed people to amateur radio--bring your un-licensed but interested friends to field day. No doubt Ed can find something for them to do, up to and including getting their hands on a microphone for some non-control participation. Please support these activities--contact Bob (Ironman) and/or Ed (Field Day) ASAP.

••• KARS HAMFEST 2005 •••
Computer and Electronics Flea-market

When: Saturday, 11 June, 2005 Where: Lion's Club in Rathdrum (Hwy 53 at Meyer Rd.)

What a deal!!!

- **Free admission**
- **Free flea-market exhibit tables**
(first come, first served)
- **RV parking (no hook-ups)**
- **Tailgaters welcome**

**Talk-In
Frequency:
146.98MHz-**

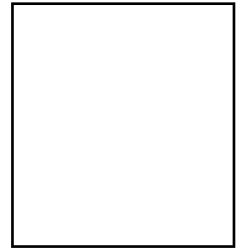
Saturday's Program

- **Breakfast (6:30 am to 11:00 am)**
- **Lunch (11:00 am to ???)**
- **Ham license testing (11:00 am)**
(all license classes)
- **Grand Prize Drawing (2:00 pm)**
- **Prize drawings every hour**

***** GRAND PRIZE: YAESU 857D HF RADIO *****

Information: 208.667.4915 or n7esu@arrl.net

KOOTENAI AMATEUR RADIO SOCIETY
PO BOX 5222
Coeur d' Alene, ID 83816



Deliver to:



This is the May 2005 Issue.

You **may** want to come to the next KARS meeting--see 144 Reasons below.

Current KARS officers

President:	Bob Kesson 772-6745	K7CGA
1st Vice President:	Jack McElroy 687-3293	K7JMC
2nd Vice President:	Warren Conklin 772-6484	WB7ECU
Secretary:	Linda Chamberlain 765-3144	N7UTK
Treasurer:	Chris Monroe 687-2251	N7ZUJ
Newsletter Editor:	Steve McQuiston 772-4095	WO6LF
Repeater Tech:	Jim Monroe 687-2251	N7ESU

**144 Reasons to Attend
Monthly KARS Meetings**

In addition to good fellowship with other KARS members, and good presentations by guests and members, an incentive to attend meetings are the two "money-pot" drawings held each month.

The first drawing is a 50/50 drawing where 50% of the proceeds go to the winner, and 50% go to KARS. The second drawing is a winner-take-all drawing. You must be present, and must enter each drawing (one lousy dollar for each drawing) to win. In the winner-take-all drawing, the winner is drawn from a bucket containing tokens for each KARS member--if the winner isn't present to claim the prize, the "pot" is saved for next month's drawing. At the April meeting, the winner/loser (loser because he didn't attend the meeting) was Dennis Hall (KK7X). The "pot" was \$144.00!!! Oh, Dennis!!!

Get thee to the KARS meeting, or suffer the consequences.

--the editor