Raspberry Pi Stuff   By John Boy KD7AAT

We've heard a lot on the radio lately about people setting up all kinds of equipment, radios, computers, Pi's, Arduino's and such. It's all good and I try to keep up with some of it myself but am limited to a point. A Raspberry Pi is a cheap way to have some fun.

First of all what the heck is a Raspberry Pi? We are not talking about adding calories to your diet. Hi Hi.

The Raspberry Pi is a credit-card-sized computer that plugs into your monitor, a keyboard and mouse. It is a capable little computer which can be used in electronics projects, and for many of the things that your desktop PC does, like spreadsheets, word processing, browsing the internet, and playing games. It also plays high-definition video. Some of the KBARA system is running on a Raspberry Pi!

I may not know a lot about computers and especially Linux the operating system for a Pi, but I have been learning and working on projects and setting up some neat things.

I now have five Pi's. One is for my mobile Dstar DVMEGA setup and the other four are running 24/7 headless doing other things. Headless means with no monitor, mouse or keyboard. They all just do their thing running wifi wireless to my home router with port forwarding setups.

One of the mini computers is hooked to my Acurite weather station. With the software installed and configured it sends the data from my wx station to Weatherunderground, APRS and PWS. I'm all over the world with my weather station North Burton KCANIPOM31.

Next is a Pi running software for airplane tracking with FlightAware. Using an SDR dongle and home built collinear antenna plugged into the Pi, I receive the data signals from airplanes as far as 250+ miles away and it is sent to the FlightAware website. The stats from tracking the planes is really neat. How high, how fast, the track, where it's going, where it came from and with links through the software anything else about the plane is available. Living right under the north-south airway from San Francisco to Los Angeles I see as many as 600 or more planes a day on my screen.

Next is one of my web cams. We've had a camera in the chicken coop for a couple of years that was on the house software setup but I thought why not share it with the world. I installed some video software on a Pi, plugged in the usb cable from the web camera, did some port forwarding on my router and now for the world to see you can watch a chicken lay an egg. Now that's exciting for sure. Well???

Then comes my Pi running the weather web camera facing SSE. A typical web camera plugged into the Pi. The software shows the video no problem but I wanted more. I also setup software to take a picture but you can't have both running at the same time. With help from my great friend Glen K1RR he used SSH to log onto the Pi, setup some scripts, crontabs and such and now that Pi is running the video, stops, takes a picture, sends it to Weatherunderground then starts the video again. That setup is on a 10 minuet loop.

I have one more weather cam that runs wireless to the router with its own software so I don't need a Pi for it.

If you would like to see results from the projects I have done, including amateur radio info, please logon to my website @ kd7aat.net. I hand coded it using Microsoft Note Pad so some things may not work well but what the hey.

73 de KD7AAT
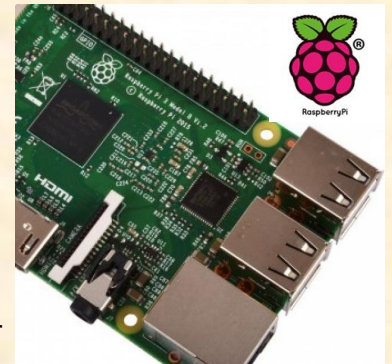
A few words from our President

KBARA Members,

I hope everyone faired the crazy winter well. I know we are all looking forward to warmer, dryer weather and our summer activities.

First off as we have discussed on the Wednesday evening nets we are combining Field Day and our Annual Meeting this year. This will be held at our usual Field Day location at Valleyford Park, in Valleyford, WA just southeast of town on the Palouse Highway. The date is June 24th. This will be our third year holding Field Day at this location. Please see the flyer later in this issue. Unlike Rotary Park there is not a lot of area for RV's for overnight camping. Lots of grass if you wish to tent camp. Hope to see everyone there. Escape the chaos of Hoopfest and come out for some Field Day fun and the Annual Meeting.

I have been reviewing the paperwork that governs how our association functions and realized it needs to be updated. I have formed a committee to review and update our bylaws and standing rules to make sure we are up-to-date and compliant with all federal and state rules and regulation. The first draft of changes is in front of the committee as this newsletter goes to press. I plan on having our final recommended changes emailed out to the membership no later than a month before the Annual Meeting where we will vote on the updated changes to both bylaws and standing rules..

KARS Hamfest is coming up on Saturday, June 19th in Post Falls. No flyer was available at the time of this printing.

September will be here before you know it. We will have our Spokane Hamfest and ARRL Washington State Convention at University High School on Saturday, September 23rd.

73, Scott, KA7FVV, President KBARA
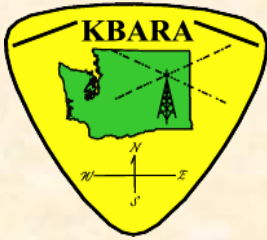
Baofeng (BTECH) Triband Radio

By Scott, KA7FVV

Baofeng or the new rebranded name BTECH have released a new triband handheld. This radio covers 144, 220 and 440 mhz amateur radio bands. New model is UV-5X3. It is compatible with all UV-5R accessories. For a great price of under $60 it is a great way to add 220 mhz to your ham shack. The new BTECH has stepped it up with the package. Major change from the old beige and gray Baofeng packaging the new radio comes in a nice white package with colored picture and writing. The manual is a step ahead of the old hard to understand Chinese interpretations. Now a very well written 80 page manual that describes all of the radio features. It comes with two antennas. One for VHF/UHF and 220. The antennas are almost identical . Easiest way to identify the antennas are from the base. Being a little inconvenient to switch out antennas if you wanted to switch from VHF/UHF to 220. The Nagoya NA-320A is a 17" triband handheld antenna was the answer to this dilemma. I also purchased some aftermarket high capacity batteries. Not the usual Baofeng battery that extends below the radio. These are 2800 mAh that replaces the stock 1500 mAh battery that comes with the radio. It adds a little bit of thickness and weight to the radio.   The radio has an updated feature that is not available in the UV-5R series. It has sync scan. Once programmed sync scan can be enabled and the upper VFO display with show the alpha tag for the channel and the lower display the frequency of the memory channel. The dual monitor feature can be used as well if you don't like the sync mode.

Programming of any of the Baofeng radios has always been problematic. For manual programming, John, W7OE is a great resource. For computer programming the Chirp software is a lifesaver. Also make sure you purchase the correct cable and not a cheap knock off. The model number to the right is the correct cable for programming the new UV-5X3, UV-5R and UV-3R+. I own all of these models of radios and have programmed them all with Chirp and this cable. The cable even works with Windows 10 which is rare. Usually there are issues with finding the correct drivers for Windows 8 and above.

That is about it. Radio, cable and accessories are available for quick shipping from Amazon and other retailers. These are great for FM satellites as well since the VHF/UHF or UHF/VHF splits can be programmed into the memory channels.

If anyone needs their Baofeng/BTECH radio programmed let me know. I have files for the Spokane/Coeur d'Alene area.

Field Day 2017

By Scott, KA7FVV

Field day will soon be upon us. Coming up this year on June 24th and 25th. We will be once again setting up at Valleyford Park. This is year number three at this location. Thanks to John Boy, KD7AAT for securing our reservation with the camp host Richard. Remember this is also our Annual Meeting location for this year doing a combination event. Looking back in old newsletters I saw this was also our Annual Meeting location in 2013 as well.

Valleyford Park is well suited for Field Day. It has many tall trees for dipole antennas. Jim, N7WRR has a lot of fun with his air cannon putting the antennas in the trees.

If we setup like last year we had a GOTA, Get On The Air, station and three others operating throughout the day. I operated satellites, digital and voice on mainly 20 meters.

Come out and join us. We can start operating at 11:00 am PDT on Saturday, June 24th. Of course we will take a couple hour break for the Annual Meeting at 1:00 pm with a potluck to follow.

Don't forget breakfast at 09:00 before the days festivities begin. As usual food and amateur radio.

Pictures from last years Field Day:
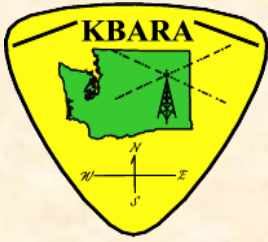
Allstar Node

By Duff, WA7BFN

With the HF bands at a season low or at the bottom of the solar propagation cycle, more and more hams are turning to "other "aspects of amateur radio. DMR, DSTAR, and Fusion on the digital VOIP scene and IRLP Allstar and Echolink on the Analog front.   Most of these run on the VHF/UHF frequencies we're familiar with . No doubt, the digital modes are at the for front of our advanced modes, however there are alternatives in the analog realm that can be a lot of fun.

The KBARA repeater system utilizes a combination of RF and VOIP Modes to link us together. IRLP (Internet Linking Project and Echolink is used as a "node" for stations to link and talk on the system. These modes are also used as a conduit to the west side to link repeaters and users there.

IRLP has been around for years with personal and repeater nodes linking individuals and repeaters all around the country.   While offering a lot of connection, one of the major drawbacks for a "Personal node" is the cost. Upwards of $300 in many instances. Proprietary hardware and software, offers no flexibility or control

One of the more interesting analog VOIP connections schemes is Allstar. With all the digital repeaters hotspots and nodes why Allstar? Open Source technology offering quality audio and the freedom to do what you want. It's the open source that brings the choice of connecting RF system with full duplex quality audio and a huge choice of of how and where to connect. Private, public or individual connection can be built at a fraction of the cost. As an example, I recently completed a personal node setup using a $10.00 BaoFeng radio, a $2.50 sound fob and RPI… all setup for under $75.00. A commercially built system can be purchased for a fraction of the cost of a digital radio.

Allstar offers the ability to setup your nodes that can cover a few block to several miles between your handheld and your personal node. Setting up with your friends and their personal nodes can create a great "talk Group" using , yes, REAL RADIOS. Allstar also offers the ability to access via computers, phones and Echolink,   and is only limited by your imagination.

So where do you begin.   One of the most comprehensive sites I have found is "HAMVOIP.ORG" Here you will find a complete shopping list of material and more importantly step by step instructions , including pictures for the instruction impaired individuals, in creating a successful personal node.

But, First things first. To get started go to Allstarlink.org. Here you will find where you register (free) to obtain your "node number" and links to various sites and information on the Allstar VOIP System

Allstar Node #45684
Running simplex on 146.580 / 100 hz tone. Give it a try.
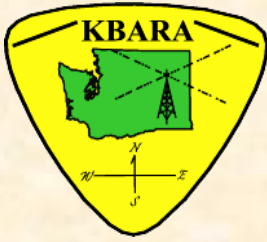
Allstar Node continued

By Duff, WA7BFN

I've found Allstar to be an exciting system with the ability to connect to any of 1900 nodes on a continuous basis. The Winsystem for example, connects over 200 repeaters nationwide. A key-up on the handheld will bring on a great QSO most anytime.

Allstar, a great alternative to the HF doldrums.

Good luck with your project. If you have questions or need some direction, feel free to give a shout, anytime.
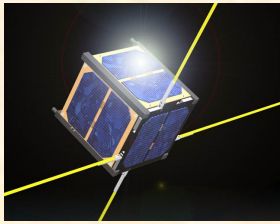
Satellite Update
by Scott, KA7FVV

Update on two new Fox satellites from AMSAT NA that have been delayed.

Fox-1Cliff/D News courtesy of AMSAT NA

First, we are making progress on the launch of Fox-1Cliff and Fox-1D. AMSAT signed an amended contract with Spaceflight, Inc., on March 10 that changes the flight arrangements for our two CubeSats in response to changing circumstances concerning our original agreement with Spaceflight. The opportunity to place our two satellites on the same Falcon 9 Launch is no longer available.

Spaceflight is now making arrangements to fly our satellites on two different launchers: Fox-1Cliff will fly on a SpaceX Falcon-9 SSO-A launch sometime between late Fall 2017 and early 2018, and Fox-1D will fly on a PSLV launch in late Fall 2017 from India.

Our revised agreement maintains our relationship with Spaceflight, where they will provide launch integration services as well as handle export control requirements to allow Fox-1D to be flown from a launch facility outside the United States. Additional details concerning these recent developments appear in Jerry Buxton's article in the March/April issue of *The AMSAT Journal*.

When we signed the original launch agreement with Spaceflight in July 2014, we did not expect that the road to actual launch of Fox-1Cliff (and later amending the contract to include Fox-1D) would take the twists and turns that it has over the past year. These developments are beyond AMSAT's control and of course all of the participants are impacted by "events" that drive actual launches. Under the leadership of VP-Operations Drew Glasbrenner, KO4MA, and VP-Engineering Jerry Buxton, N0JY, who have been the primary interfaces with Spaceflight, we have been able to secure revised launch opportunities that will serve us well in providing suitable orbits for our two CubeSats. My thanks to both Drew and Jerry for working so diligently with Spaceflight to secure alternative launches.

Fox-1Cliff [2,4]

U/v - L/v
FM Voice
Digital [b] [g] [$]

Dwn-FM	145.920	
Dwn-FM	145.920	
Up-FM	435.300	
Up-FM	1267.300	

Fox-1D [2,4]

U/v - L/v
FM Voice
Digital [b] [g] [$]

Dwn-FM	145.880	
Dwn-FM	145.880	
Up-FM	435.350	
Up-FM	1267.350	

KBARA Members for 2017

Call	Name	Call	Name	Call	Name
	Edward C. Johnson	KI7HDZ	Michael Dunlap	AA7P	Richard J. Hebel
	Juanita M. Johnson	KI7HEA	W Cameron Dunlap	KG7PDJ	Robert Burden
KI7AAO	Jeff Oyler	KI7HEC	W Jeremie Dunlap	N7PGJ	Judy West
KD7AAT	John P. Myers Jr.	W7HFI	Robert Lemon	K7PHM	Richard M Flynn
KE7ADN	Gail (Gabbee) Perry	KB7HJM	Roy E. Ferrell	KG7PZP	Stoy D. Dabbs
KE7ADT	Robert Bearpaw Galindo	K7HPT	Mark Van Winkle	KD7QLT	Wilber H. Earl
W7AHX	Ken Gairson	K7HRT	Patrick P. O'Dea	KE7RGP	David Lowry
K2AMF	Neil Powell	KG7HZT	Jeffrey W Winikoff	K7RHT	Randy Thomas
N4APY	David Boswell	KG7IQP	Duane A DePoe	WA7ROS	Anna M. Reeves
WA7AQH	Del Morissette	KF7JJC	Roger Krug	KG7RQN	Robert Walker
KI7AQZ	Ron Tilton	W7JJL	John J. Lally	K1RR	Glen Ahlborn
KE7ATG	Eugene Lenning	KD7JUL	Julie Carleton	WA7RVV	James L. Reeves
WB7AUK	Art Gemmrig	KG6JXM	Richard Dines	NJ7S	Burton Grover
KI7AYD	Sheena Allen	KI7KEU	Brian Schaeffer	KG7SD	Richard Thorton
KI7AYV	Franklin B DeWitt	KE7KKM	Mary E Day	KE7SH	Allan A Bonney
WA7BFN	Rollin A. Johnson	VE7KLI	Dona Mottishaw	K7SIL	Gerry O'Brien
WL7BUI	Mike Foster	KI7KRY	Zach Varner	KK7SJM	Shane Moscatelli
WA7CBX	Bernie Frazier	AC7KX	James Powers	KG7SJR	William S Coyle
W7CDP	Craig Phillips	W7LKR	Patrick Brandt	KA7SPN	Sharon Andrews
W7CFN	Chris Nordstrom	KI7LLZ	Myron Judkins	KA7SUZ	JoAnn Gemmrig
K7CPO	Glen Day	WA7LOV	Cyril Wolff	K7TAA	Charles Preston
KF7CQZ	Bill Allen	K7LRG	Leonard Gross	W7TSE	Debby Phillips
KD7DDQ	Ken Crosswhite	KR7LRJ	Larry Jenks	K7TTA	Karin Preston
N7DHG	Charles R DePoe	KL7M	David Cloyd	AE7UF	Ed Bechtel
KA7DKV	Russell Doyl	K7MAT	K. Todd Wagner	KF7UND	George Policani
KG5DPR	Brian M Smith	KF7MCD	Levi M. Johnson	KF7UTH	Dennis P Roberts
KI7DPZ	Matt McLallin	VE7MEL	Mel R Battel	WA7VFQ	Jim Fielder
KG7DQP	Tom Faust	W4MHI	Bogdan Mihai Manolache	W7VTB	V Thomas Bahn
K7DSR	David Carleton	K7MM	Dan Ransom	VE7WC	Albert Nelson
AA7DV	Dennis VanMeter	K7MTD	David Herzberg	KG7WLX	Joseph "Vic" Parrish
KD8DXC	Rob Ruffner	N1NG	Michael Maxson	KG7WPP	Joseph Nollette
WA7DYI	David Peringer	WB7NNF	Chuck Vyverberg	N7WRQ	Elizabeth Ashleman
K7EAE	Eugene Eastman	WA7NSJ	Jim Sibley	N7WRR	James Ashleman
W7EFS	Tony Ross	WB7NUE	Jerry Harnois	W7WTO	Royal Moore
K7EHT	Michael J. Sirott	AK2O	Karl Shoemaker	AD7XH	Dick Schultz
KI7EJU	Richard Furnas	WQ7O	Dennis Todaro	KJ7XX	Joseph May
KI7EOT	Mark Andrews	WZ7O	Darryl D Hirst	AF7YF	Carl B Branton
KI7EPL	Richard A Wright	W7OE	John P. Dempster	KE7YHX	Randall Spencer
KE7EQP	Bruce McNett	KF6OJE	Ray Torella	KG7ZBZ	David Blythe
WJ7F	Bob Ryno	VE7OLV	Oliver Amateur Radio Club	KG7ZCW	Daniel Carter
K7FHX	James Pangborn	WR7ON	Ronald E Standley	KC7ZNA	Randy Filion
N9FOX	Barbara J. Moore	KC7OQR	Cathie Hebel	AF7ZQ	Douglas Andrews
KK6FVG	Avis Rodriguez	KC7OQS	George Hebel	N7ZUF	Jay F. Lopes
KA7FVV	Scott P. Harvey	KG7OQZ	Dan Marshall	W7ZVD	George C. Copeland
KI7GBU	Richard Guse	KC7ORO	Denise Hebel	KE7ZWJ	Arnie Merrick
KB7GJY	Allen Gemmrig	KG7OWU	Thomas W. Rogers		
KG7GPM	Michael V Register	KG7OWV	Laurie H. Rogers		
N7GTB	Vernon VanZandt	KG7OWX	Valaire Poler		
VA7GV	Guy Venne	KG7OWY	Murray Poler		

KBARA REPEATER FUND CONTRIBUTIONS 2017

We wish to thank the following contributors for their very generous donations to this year's Repeater Fund. For the year 2017, $2,225 has been donated.

Platinum Contribution
Contributions $100 and over

Frank, KI7AYV	Richard, K7PHM	Bill, KG7SJR
Warren, KG7OWU	Wilber, KD7QLT	Dennis, KF7UTH
Laurie, KG7OWV	Ann, WA7ROS	
Bob, KG7PDJ	Jim, WA7RVV	

Gold Contribution
Contributions from $50-$99

Shane, KK7SJM

Silver Contribution
Contributions from $21-$49

Jeff, KI7AAO	Levi, KF7MCD	Jim, WA7VFQ
Dell, WA7AQH	Jerry, WB7NUE	
Scott, KA7FVV	Allan, KE7SH	

Bronze Contribution
Contributions from $1-$20

Duff, WA7BFN	Avis, KK6FVG	Gerry, K7SIL
Charles, N7DHG	Zach, KI7KRY	Charles, K7TTA
Russ, KA7DKV	Cyril, WA7LOV	Al, VE7WC
Brian, KG5DPR	Jim, WA7NSJ	Vic, KG7WLX
Dennis, AA7DV	Ron, WR7ON	Dick, AD7XH
Rob, KD8DXC	Stoy, KG7PZP	Joe, KJ7XX
Mike, K7EHT	David, KE7RGP	Carl, AF7YF
Bruce, KE7EQP	Burt, NJ7S	Randall, KE7YHX
		David, KG7ZBZ

2017 Field Day and 39th Annual Meeting
June 23 through 25, 2017

VALLEYFORD PARK

147.380 will be talk-in frequency.

We are combining Field Day with the Annual Meeting this year. Location is Valleyford Park, in Valleyford, WA. Park is well treed so is well suited for Field Day. This is our third Field Day in this location. There is a great picnic shelter for our meeting and potluck. Camping is limited unless you have a small RV or a Tent. There are no water or power hookups.

A pancake breakfast will be served at 0900 on Saturday Morning, June 24th.

MEETING!!

The annual meeting will be held at 1300 on Saturday, June 24th at 1300 with a potluck lunch to follow.

FD17
ARRL FIELD DAY

WWW.ARRL.ORG

SPOKANE HAMFEST

and

ARRL

WASHINGTON STATE CONVENTION

September 23, 2017, 9AM-4PM
University High School
12420 E 32nd Ave, Spokane Valley WA 99216

Admission $5 (age 18 & under – FREE)
East entrance on 32nd Avenue

Hosted by 6 Amateur Radio Clubs:

Northwest
Tri-State ARC

SDXA

UHSARC

KBARA

Four Prizes to be Raffled ! 1st ICOM IC-718 (HF compact multimode 160-10 M with DSP); 2nd Kenwood TM-V71A (144/430 Mhz FM dual band mobile 50 wt with Echolink interface); 3rd ICOM IC-2300H (144 Mhz FM mobile 65 wt); 4th RASPBERRY PI 3 COMPUTER KIT

Seminars, Demos, Displays, Raffle & Door Prizes ~ "Pile Up Secrets & Contesting" by Chuck, KI7DG ~ "Amateur Radio Digital TV" by Duff, WA7BFN & Craig, W7CDP ~ "ARRL Forum" with Jim, K7CEX & Bonnie, AB7ZQ ~ Radio Test Gear" table with Jack, AD7FO ~ more seminars to be added ~ License Exam ~ Open Cry Auction ~ Card Checking by Bruce, N7ZA ~ Refreshments & lunch by Toby's B-B-Q

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ADMISSION $5
Age 18 & under FREE
COMMERCIAL SIZE TABLES $15
Admission not included in price of table space; limited number of tables available; reserve before 9/16/17
SWAP TABLES $10.00
Admission not included in price of table space; limited number of tables available; reserve before 9/16/17
FREE OFF-STREET PARKING FOR CARS & RV's
starting Friday, September 22, 2017

FRIDAY, SEPTEMBER 22, 2017
Vendor setup 6:00PM-7:30PM
SATURDAY 23, 2017
Vendor setup: 7:30AM-9:00AM
OPEN TO PUBLIC: 9AM – 4PM
License Exam: 12PM
Open Cry "Junque" Auction: 2:30PM
Raffle: 3:30PM
No-host Hamfest dinner: 5:00PM
Timber Creek Grill & Buffet
9211 Montgomery Dr, Spokane Valley

Lunch by Toby's B-B-Q

Upcoming Hamfests and Events

Courtesy of N7CFO.com

April 21. Idaho State Convention. Boise, ID. *This is an ARRL sanctioned event.* http://voiceofidaho.org/ Contact: Larry Bickham , WA7ZZS. (208)453-1666, wa7zzs@arrl.net

April 22. Valley Radio Club Swapmeet. Eugene, OR. http://www.valleyradioclub.org/reg/ *This is an ARRL sanctioned event.* Flyer in PDF. (123K) Seller Registration form in PDF. (46K)

April 22 & 23. Communications Academy. South Seattle Community College, Seattle, WA. *This is an ARRL sanctioned event.*   http://commacademy.org/

May 6.   MARA Hamfest. Wasilla, AK. Matanuska Amateur Radio Association. *This is an ARRL sanctioned event.* http://www.kl7jfu.com . Contact: Betty Carrington , KL1XL, (907)376-9549, kl7jfu@gci.net

May 7. Maple Ridge Swap meet. Pitt Meadows, BC. http://rac.eton.ca/events/detail.php?event_ID=1843

May 13. Stanwood Camano Amateur Radio Club Hamfest, Stanwood Middle School, Stanwood, WA.   Flyer in PDF. (207K) Contact: Fred Laun, w7pig@arrl.net   http://www.scarcwa.org/

May 19-21. Washington State Search And Rescue Conference. Ferry County Fairgrounds, Republic, WA.   http://www.wasarcon.org/

May 19-21. River Radio Campout 2017. Pateros WA. Free "dry" camping along the Methow River at Pateros.   Always the weekend prior to Memorial Day Weekend.   Contact Roger W7CH w7ch@arrl.net (509)687-3919. http://lakechelanradioclub.webs.com/

June 2-4. SEA-PAC Hamfest and ARRL Northwestern Division Convention. Seaside Convention Center, Seaside, Oregon. *This is an ARRL sanctioned event.* info@seapac.org . www.seapac.org/ . Flyer in PDF. (870K)

June 9-11. 49th Annual Apple City ARC Hamfest. Apple City ARC. Dryden Gun Club. **Dryden, WA. (Five miles east of Leavenworth on Hiway 2).** *This is an ARRL sanctioned event.*   http://www.qsl.net/w7td/ . Flyer in PDF. (54K)

June 10. KARS Hamfest. Kootenai Amateur Radio Society. Post Falls, ID. Always the 2nd Sat in June. For information contact Bonnie, KG6QQM, 208-683-2939 or KG6QQM@ARRL.net or John, n7ju@arrl.net

June 10. Port Ludlow ARC Annual TailGate'r. Port Ludlow, WA. http://www.n7pl.org/

July. 8th Annual KUH Pigroast. Springdale, WA.   Contact Ray, (509)258-7078 cdknray@wildblue.net

July 8-9, 2017. Salmoncon. Pacific Northwest QRP Group annual weekend outing.   North Bend, WA at Valley Camp. http://valleycamp.org/   Contact Wayne McFee nb6m@att.net . https://sites.google.com/site/pnwqrpgroup/

July 14, 15, & 16. Glacier Waterton International Peace Park Hamfest.   (Always the third weekend in July) Glacier Meadows Campground, 13 miles west of East Glacier on MT Hwy 2. *This is an ARRL sanctioned event.* http://www.gwhamfest.org/ 2015 Photo Gallery

KBARA Repeaters and Echolink/IRLP Nodes

| Frequency	CTCSS Tone	Location	Callsign	RF Link
Repeaters				
146.74 Mhz	None	Kamiak Butte	W7HFI	AK2O—223.90
223.90 Mhz	None	Stensgar Mtn	AK2O	Hub
147.38 Mhz	None	Mica Peak	W7OE	AK2O—223.90
147.36 Mhz	None	Stensgar Mtn	AF7JB	Hard wired Hub
147.02 Mhz	None	Lookout Pass	K7HPT	W7OE—147.38
147.28 Mhz	None	Pikes Peak	KD7DDQ	AK2O—223.90
53.75 Mhz	100.0 hz	Kamiak Butte	N7ZUF	Linked
145.19 Mhz	None	Elk Butte	K1RR	AK2O—223.90
Links				
Echolink KB7ARA-R	N/A	Spokane, WA	K1RR	AK2O - 223.90
IRLP Node 3636	None	East Tiger Mt	KB7ARA	145.33 & Ref 9075
IRLP Node 3638	None	Spokane, WA	K1RR	AK2O—223.90 & Ref 9075
147.400 Simplex IRLP Node 3282	100.0 hz	NW Spokane, WA	K1RR	IRLP Only
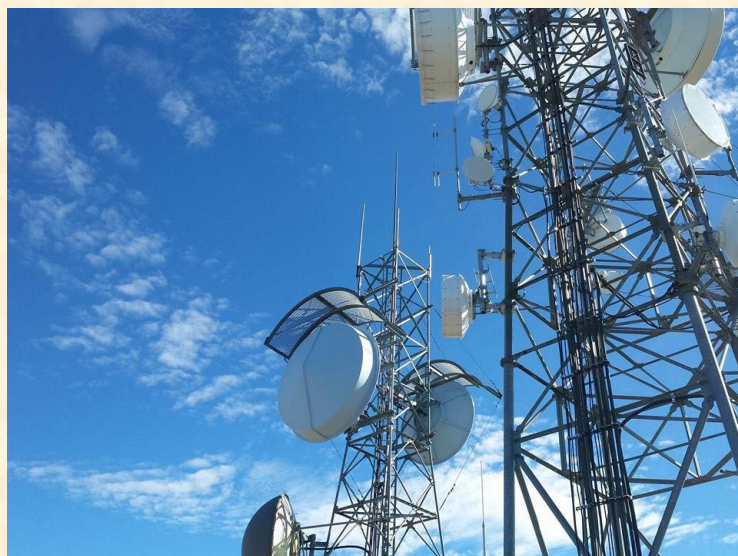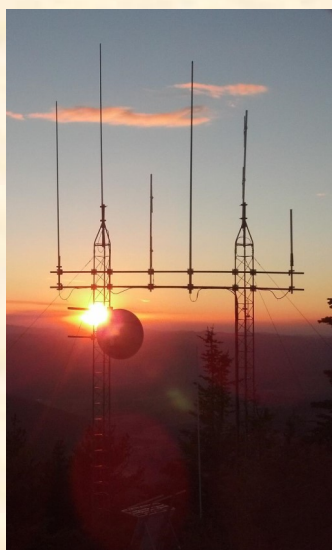
KBARA Membership / Support Information: The KBARA repeater system consists of several privately owned linked Amateur Radio repeaters. It covers an area from northeastern Washington to northeastern Oregon, and from western Montana to central Washington. The KBARA system is also part of the Evergreen Intertie, an interconnected group of repeaters located in western Washington and Oregon. The primary purpose of the KBARA repeaters is to provide a means for emergency communications within the above areas, and secondarily for routine radio traffic. It makes possible a single system of mobile communications coverage, extending the limited range provided by any single repeater operation. The KBARA FM repeaters operate in the VHF bands and are linked by UHF radios. All licensed Amateur Radio operators are welcome to use this open repeater system. Your support would also be greatly appreciated. Please visit this site for more information:

http://www.kbara.org and visit http://groups.yahoo.com/group/evergreenintertie

To support KBARA, please send your contributions to:
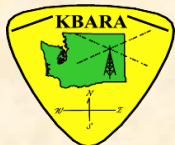
**KBARA
PO Box 30801
Spokane WA 99223-3013**

Annual support is $15 per calendar year for a single membership and $20 for a family membership. Dues are due in January of each year and if paid between September 1 and December 31, they will be applied through the entire following year. Also, any contribution will be gladly accepted to the Repeater Fund. This can also be done via Paypal on our webpage at www.kbara.org.

KAMIAK BUTTE AMATEUR REPEATER ASSOCIATION

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