The Repeater

Next Club Meeting

Thursday,
January 8, 2015, 7:00 PM

Red Cross Building,
60 Hawthorne St., Medford, OR
Across from Hawthorne Park

Program: Basic: Repeaters
Advanced: APRS

Volume 2015, Issue 1 **January 2015**

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Club Web Page:			**http://w7dta.org**	

President's Letter

Greetings Rogue Valley hams! I am looking forward to serving you as the RVARC president for 2015. I wish to bring a few items to your attention as to plans that have been made or need to be made.

First, there has been a slight rearrangement of the meeting schedule. In order to minimize time spent in the business portion as well as provide a tutorial or introductory subprogram for new or reactivated hams, the following schedule has been proposed on a trial basis.

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The Repeater is the official newsletter of the Rogue Valley Amateur Radio Club, Inc. It is published 10 times a year—once per month excluding July and August.

Secretary's Report

Because the December meeting was the club's annual holiday party, there was no business conducted, and no minutes recorded.

NOTE: THE JANUARY MEETING IS THE SECOND THURSDAY THIS MONTH BECAUSE THE FIRST THURSDAY IS NEW YEAR'S DAY.

President's Report, Cont'd.

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Proposed Meeting Schedule

7:00 - 7:15 Tutorial or 'newbie' short presentation
7:15 - 7:30 Business meeting
7:30 - 7:50 Eyeball QSOs and coffee/treats
7:50 - 9:00 Main (more technical) presentation, 10 minute Q/A at 8:50.

The times are, of course, approximate.

Regarding business meetings, it is proposed that decisions on all but the most urgent financial decisions not be finalized when first introduced or proposed. That is, a final vote regarding financial issues will generally be deferred to a subsequent meeting. This change is to encourage more deliberation on things financial.

The club is in 'dire' need of a coffee / treats person (barista). Folks, if this is important to you, please step up and get involved. (I don't drink coffee, so this is a no op for me.)

Field Day 2015 is coming... Decisions need to be made 'soon' for a successful club FD event. Please be considering the following options:

1. Same as last year (2A + GOTA) and held at Bear Creek Park.
2. Bear Creek Park again, but 3A + GOTA. 1 dedicated phone, 1 dedicated CW and 1 swing (mostly CW/phone, some digital).
3. 2A from a mountain location (TBD). This would be 1 phone and 1 CW. GOTA may or may not be included. There are some interesting sites up on the main Siskiyou ridge. This option clearly wouldn't give much public exposure (if that is our goal).

I have a bias here. I am a CW nut and

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Editor's Note

With the past two December club parties, we've not had the chance to formally pass the club gavel between outgoing and incoming presidents.

I'd like to thank several of our unrecognized past presidents for their rather significant contributions to the RVARC.

Jeff Statchwick, W7KNX was president for 2 years, and an absolute pleasure to work with. Jeff did a great job recruiting high quality programs and boosting the club membership up over the 50 member mark. Jeff also initiated dialog between RVARC and our sister club, the Southern Oregon ARC in Grants Pass, where the two clubs exchanged programs and presentations.

Todd Carney, K7TFC was our president last year. Todd brought the club into the modern era by setting up a club email reflector, and establishing a first-class club webpage. Todd was also our coffee barista for the last year (or was it two or three?). Since Todd will be moving to Portland after the Spring term, we desperately need someone to fill the role of coffee maven and snack aficionado.

Otherwise we're going to do without coffee. I don't know about you, but I think coffee sure helps the meetings go smoother.

Lud Sibley, KB2EVN was the club treasurer for 10 years (!!). Lud has taken care of expenses, membership dues and receipts, insurance, and all those other things we take for granted.

We are fortunate to have such a good cadre of officers and volunteers.

President's Report, Continued

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really like mountaintop operating. Please be considering these options AND your WILLINGNESS to PARTICIPATE. If you are not going to PARTICIPATE, those who will need to make the decision.

Somewhat related to Field Day, the club may want to consider getting some dedicated and reasonably current gear for club events. That is, a radio that does phone WELL, and another that does CW well, etc. If we should go this way, we would need a caretaker (or caretakers) of the equipment. A long term arrangement for TLC of the club's generator(s) and antennas may also be part of this discussion in the next while.

My personal goals for 2015 include making SSB QSLs from K7GT less rare (ask NA7OM), working toward the Triple Play award (I have never done anything digital), and getting the rest of my antennas up in the air. The centerpiece is to be a stacked pair of Force-12 C31XRs. Not real high, but the books show another 2 dB by stacking.

The January meeting will be on Thursday the 8th this year, in order to avoid New Year's Day. The January program will be:

Basic	How to use a repeater.
Advanced	Automatic Position Reporting System (APRS). This will include a live demo.

Best regards and see you at the January 8th meeting!!

Allan K7GT

A homebrew 160m-6m 100w all-mode radio, N5EG

Over the past several years, I've been accumulating parts to build an all-mode HF radio. It has been used for some successful ionospheric ranging experiments. The radio pieces were spread out all over the bench, and it was time to clean up the mess and build a proper radio cabinet.

The radio itself uses a TAPR built Hermes board, which is a digital software defined radio (SDR) using Ethernet for all I/O. It puts out 0.5 watts from 160m-6m. Phil Harman, VK6PH did much of the work on the board and coded the FPGA which does all the front end signal processing. I built an amplifier from a PCB designed by Kjell Karlson, LA2NI that puts out 100 watts 160m-10m and 90w on 6m. A pair of filter boards designed by Graham Haddock, KE9H low pass filter the RF power amplifier and high pass filter the receiver input.

The radio provides all signals in digital format over an Ethernet cable to the station computer which does the final stages of signal processing at baseband.

I bought a mini-ATX computer case off Amazon and gutted it out, removing the disk drive trays (which required drilling out the rivets) cutting off the USB cables (which were in the way), and stripping out the most anemic fan I've ever seen. The photos show the progress from as-shipped computer case to a stripped out chassis that will never compute again. I bought aluminum sheet and barstock from White City Metals, and fabricated a chassis, mounting blocks, filter grounding and some other parts. One of the key items was a ducted fan assembly for cooling the power amplifier. The fan is difficult to see in the pictures because it is underneath the PA heatsink. The fan is mounted to a fiberglass sheet that forces the air

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A homebrew 160m-6m 100w all-mode radio, N5EG

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directly against the heatsink fins, and only allows the air to escape along the outside edge of the fins at the two ends of the heatsink. This assures a good job in removing heat without wasted air.

I wired +12V through a dropping resistor to the power-on LED on the computer front panel, and PTT to the hard disk activity LED. I've had the chance to try out the radio on 80m and 40m SSB, and it seems to give a good account of itself., with good audio re-

Mini-ATX Cabinet as shipped.

Mini-ATX Cabinet completely gutted.

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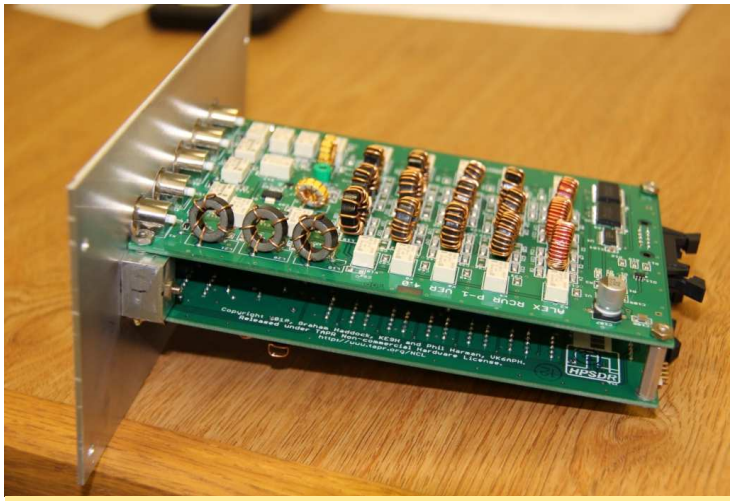
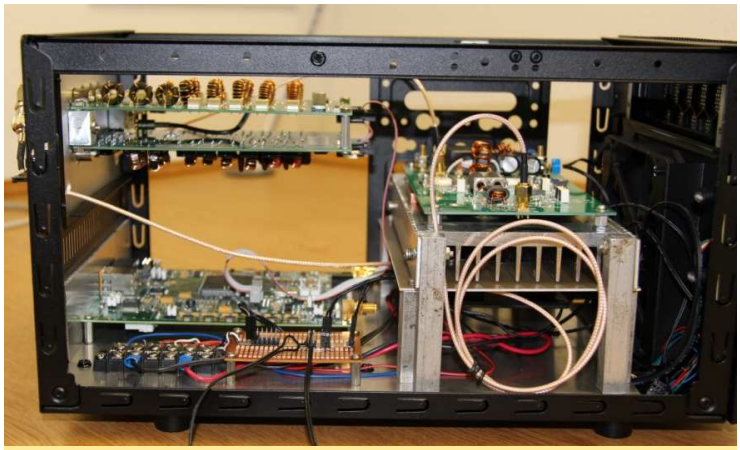
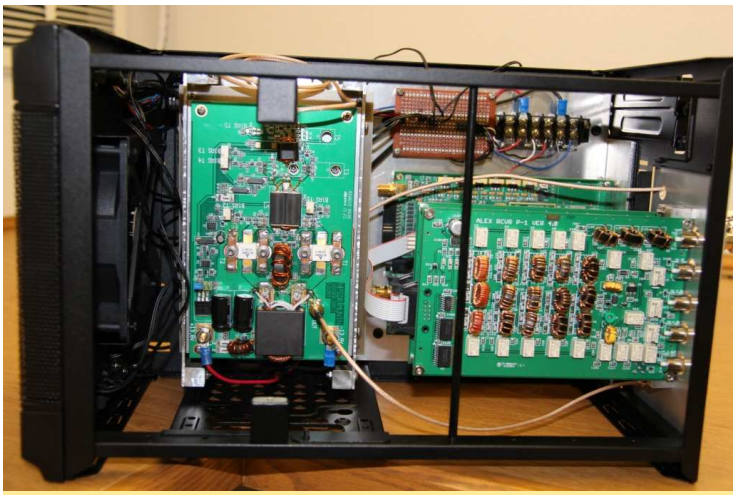


Tx LPF and Rx HPF filters and antenna relays. Home machined mounting blocks.



Side view. SDR board bottom left, filters top left, 100w amplifier right.



Top view. 100w amplifier left, filters right.

A homebrew 160m-6m 100w all-mode radio, N5EG, Continued

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ports received from everyone I've talked to.

Back of the radio showing multiple Antenna connectors, Microphone, CW Key, Speaker, and Ethernet Connectors.

The software is compatible with Power SDR (modified to work with Ethernet I/O and specific to the radio commands), as well as some other custom packages, and also Gnuradio, which I've written the Linux drivers for.

Radio viewed from the front right.

PSDR provides real-time spectrum display over about a megahertz in the fine-detail mode, while some of the software packages provide wideband data display in real time from DC to 60 MHz.

PSDR provides Iambic CW, Mic compression and audio expansion, while the transmit and receive filters can be tailored in width. This can result in very good fidelity on SSB when set for about 3.3 KHz width.

The digital nature of the SDR board provides exceptionally good close-in receiver performance, far better than my FT-1000MP.

The drivers for Gnuradio provide for full-duplex operation, and the radio has been operated full duplex at 40watts with a separate Rx antenna and been able to hear 90 dB down from the transmitted signal which has been most useful for experimental work.

It's interesting to see a received CW signal on the display while transmitting at full power (not between dits, but during transmitted dits themselves).

The filter board contains a low-noise 6m preamplifier for improved receiver performance.

I needed to build a 40dB gain low-noise microphone preamplifier in order to make the Mic input on the back happy. No soundcard is required in the computer as the radio has the audio ADC and DAC built in.

The Ethernet I/O allows remoting the radio over the Internet.

January 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 • Straight Key Night (SKN)	2	3
4	5 • Oregon Railfan Net.	6	7	8 • **RVARC Club Meeting** • Women Hams Net • ARES Net.	9	10
11	12 • Oregon Railfan Net.	13	14	15 • Women Hams Net • ARES Net.	16	17
18	19 • Oregon Railfan Net.	20	21	22 • Women Hams Net • ARES Net.	23	24
25	26 • Oregon Railfan Net.	27	28	29 • Women Hams Net • ARES Net.	30	31

Events

- Thursday Janaury 8th - 7:00 PM RVARC Meeting. Red Cross Building Medford.
- Thursdays 7:00 PM—Women Hams Net K7RVM Repeater 147.000 (+) [PL 123.0]
- Thursdays 7:30 PM - ARES Net. K7RVM repeater 147.000 (+) [PL 123.0]
- Mondays at 8:00 PM. Oregon Railfan Net. K7FH King Mountain Repeater 146.940 (-) [PL 136.5]. Also available on Echolink: Node #50239 or K7TVL-L
- Next Newsletter: February Issue. Deadline for input: January 23rd
- December 31 4:00 PM PST—Jan 1 3:59 PM PST (January 1 0000Z-2359Z) Straight Key Night

RVARC Membership

RVARC membership dues run from January 1 through December 31. Please bring cash or a check payable to RVARC to a club meeting, or mail (checks only) to:

RVARC Membership
c/o 1058 Linda Ave.
Ashland OR 97520

Regular Member:	$20.00
Senior Member (62 and over):	$15.00
Family Member:	$20.00
Student Member:	$10.00

For Sale / Wanted

2015 Amateur Radio Examinations

In the Rogue Valley, amateur radio exams are provided by the RVARC and the SOARC. New exam participants need to provide identification, while upgrading amateurs need to **provide a copy of their current license** as well as show identification. The exam fee for 2015 remains $15.00. All license candidates must provide a picture ID. Upgrading amateurs must also provide a photocopy of their current license to send in with their application. To search for other exam locations, see:
http://www.arrl.org/arrlvec/examsearch.phtml or our club webpage: http://w7dta.org

Medford—Phoenix, OR

Time: Saturdays, Registration 8:30 AM. Exam session starts at 9:00 AM. Walk-ins welcome.
Location: Fire District 5 HQ. 5811 South Pacific Highway, Phoenix, Oregon 97535
Dates 2015: Feb 28 Jun 20 Oct 31
Contact: Don Bennett, Email: kg7bp@rfwarrior.com Phone: (541) 973-3625

Grants Pass

Time: Fridays Registration 6:00 PM. Exam session starts at 6:30 PM. Walk-ins welcome.
Location: Fruitdale Grange. 1440 Parkdale Dr., Grants Pass OR 97527-5288
Dates 2015: Feb 20 May 15 Aug 21 Nov 20
Contact: John Stubbe, K7VSU, email: K7VSU@arrl.net, Phone: (541) 218-2244

Roseburg, Bend, Redding, Brookings, Crescent City — Please see our club webpage, http://w7dta.org for updates as we receive schedules for these cities.

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