



High Desert Amateur Radio Group

Monthly Newsletter



VOLUME 1 NUMBER 4

APRIL 2015

2015 Leadership

Elected Positions

President

Ray Spreier, KG7AV
hidarg-pres@hidarg.org

Vice President

Joe Barry, K7SQ
hidarg-vpres@hidarg.org

Secretary

Max Vaughan, KF7MAX
hidarg-sec@hidarg.org

Treasurer

John Cherry, KE7GYB
hidarg-tres@hidarg.org

Director At Large

Brian Case, KF7WPK
hidarg-mal@hidarg.org

Appointed Positions

ARES Coordinator

Andy Johnson, KE7TMU

St. Charles R7HPP Liaison

Pending

Technical Director

Bill Johnson, N7RGB

W7JVO Repeater Trustee

Joe Barry, K7SQ

Licensing / VE Coordinator

Joe Barry, K7SQ

PIO / Media Contact

Don Shurtleff, WB0DVS

Scouting / JOTA Liaison

Mike Williams, KB7KLT

Newsletter Editor

Ray Spreier, KG7AV

Webmaster

Bryan Ivie, N7VME

Meetings

Weekly Lunch Gathering

Wednesdays at Noon
Jake's Diner in Bend

Monthly Business Meeting

1st Thursday of the Month
7:00pm
Saint Charles Medical Ctr. Or
Mid Oregon Credit Union

HIDARG - W7JVO

PO Box 723
Bend, Oregon 97709
USA
www.hidarg.org

On the Air With John W9CZ

I was born June 16th, 1929 in Portland, Oregon. Some would say that I ushered in the Great Depression. My dad sold a 1924 Model T Ford in order to pay the doctor bill. I had the best parents a kid could ask for. My mom was an ex-schoolteacher, and my dad was self-educated. He was intellectually the equal of any PhD I've ever met.

My first interest in things electrical started about age 8 when dad gave up his lunch to buy a No. 6 dry cell, a ¼ x 4 inch bolt, and a spool of #22 cotton covered copper wire from Choun's Hardware. He showed me how to make an electromagnet. I was fascinated by the concept that you could turn a magnet on and off!

In 1936, he bought an Echophone short wave receiver and we listened to Hitler and Mussolini rant and rave. I couldn't understand how that volume control knob could make someone louder than the sound he originally made in the studio. Aren't there fundamental laws about the Conservation of Vocal Energy?

A buddy and I ran wires down the power poles in the alley between our two houses, we made telegraph keys, and tried to communicate after bedtime. In a library book, I found out how to build a crystal set and proceeded to listen at night with my head under the covers. By 1940, I had a *Saturday Evening Post* route and made a whopping 1 cent per magazine – 20 cents per week, which I spent on old radios at Goodwill. I wanted to get a ham license, but could not convince my folks that the license was free. Besides, I had not yet collected enough parts to build a transmitter, though I had built a 3 tube regenerative receiver and had started learning morse code.

During WWII, I heard what I thought was a training exercise at Camp Pendleton, CA. It turned out to be TBY transmitters on 30 Mhz in support of the Marine Corps landings on Saipan! Some DX!

In 1943 I found out that I could obtain a ham operator's license. No "station" licenses or call letters were issued during the war years, because ham's were officially "off the air" during the war. The minute my license arrived, I started getting letters and phone calls from all branches of the armed services telling my that as soon as I was old enough to enlist, they wanted my services!

In late 1945, I got my callsign W7JTB and built a small crystal controlled transmitter. I had a paper route during the war, and had saved up \$95.99 – enough to buy a Hallicrafters SX-25 receiver. Boy was that hot compared to my regen unit! I worked mostly CW, but got on 10m AM and had lots of DX with my twinlead folded dipole antenna. We had fox hunts on Saturday nights and I managed to find the fox on one occasion. I was busy in high school, but managed to build things and find time to operate. During this period, I earned my Class A ham ticket, a 1st Class Commercial Radiotelephone license, and a 2nd Class Radiotelegraph license.

I graduated from Jefferson High School and went off to Oregon State to study electrical engineering. I flunked out on math after two years, and so took a job as an apprentice with National Cash Register Company. I then attended a broadcasting school at Swan Island. I interviewed for a job at KBND (yes, the same KBND), but did not have a car, which made it tough to live out at the transmitter building and get to and from town. I finally got a position as the all-night disk jockey and station engineer at KGON in Oregon City. That lasted until September 1950 when the US Army drafted me to serve as cannon fodder in Korea. I managed to get assigned as chief engineer in an AFRS station in northern Japan.

The station's transmitting coax had a VWSR of about 2.5, and the old RCA broadcast rig was huffin' and puffin'. Our broadcast radio signal was used by pilots coming back to Japan from combat sorties over Korea, so we had to stay on the air – or else. The treaty with Japan prevented combat

More...

John W9CZ cont...

aircraft from launching missions directly from Japan, so they usually made a touch-and-go landing on Korean soil in order to make it all “legal”. The previous station engineer had used steel wire to form the ground radials under our top-loaded vertical antenna. A shovel revealed that the radial field and since turned into a rich deposit of iron oxide, which explained why the VWSR was so high! I managed to finagle some copper wire from the Yokohama Signal Depot, and so we built out a proper ground system.

When I got back to the States I got married, returned to school at Lewis & Clark College, and learned to love the math that had been my prior undoing. I graduated with a double major in mathematics and physics, and went back to Oregon State to clean up my record and earn a Master's degree. The stork soon came along, and so I took a job as a maintenance analysis engineer with United Airlines in San Francisco.

At UAL my boss and I proved that “on condition overhaul” would maximize the service life of electronic equipment. We published a technical paper on the subject, and soon all of the other airlines and the military had switched from time-controlled overhaul to on-condition overhaul.

My next job was with the Lenkurt Electric Company as a Quality Manager. Using statistical tolerance analysis, I proved that filters in the 600 channel mobile tactical telephone system would be able to meet the temperature extremes required, and kept valuable project from being canceled.

After Lenkurt was sold to General Telephone, I decided to take a job as the Quality and Reliability Group leader at North American Aviation in Anaheim, CA. We build the inertial navigation system that allowed the Polaris-class missile subs to leave port from Connecticut and cruise for 90 days submerged, returning to port without needing to ever surface to take a navigational fix from a star sight. We also built the internal navigation system for the Minuteman ICBM, which provided the accuracy to deliver the payload to a 10' x 10' area 6,000 miles downrange. The electronics were hardened so that the missile could launch through the radioactive cloud resulting from an enemy first strike. Happy thought, but that capability provided a key deterrent that helped end the Cold War, as the Soviets could not compete to that level of survivability.

My next job was as a consultant with Abbott Laboratories, a pharmaceutical company in the Chicago area. I worked there for 25 years, and ended up in the R&D division. We developed flexible plastic bags to replace glass bottles for IV solutions. The bags were formed by welding together two sheets of plastic film. We used 10KW power oscillators at 27Mhz to form the perimeter welds. I spent quite a bit of time re-studying RF theory so that we could prevent the 3rd harmonic from getting into the 75Mhz ILS receivers of commercial airliners passing over our factory during instrument landings at O'Hare.

My ham license changed to K6SKY while I worked in California, and then to W9NQC in Illinois. When the FCC

More...

John W9CZ cont...

announced the Extra Class license, I went for it and ended up with W9CZ. Most of my hamming has been concerned with building equipment and antennas. Operation has been mostly CW, with some 2m FM, and occasionally SSB on 80, 40, and 20m.

I retired in 1995 and we moved to Bend where I found 10 acres with underground facilities and started building antennas. I presently have a 160m full-wave square loop at 50 ft., fed with homebrew open line. For local work, I have broadband 80 and 40 meter inverted vees. For 20-15-10, I have three element yagi with a rotor on a 35 foot tower. A J-pole rounds out the farm for 2m work. The ham shack is somewhat of a museum with five stations covering everything from 1939 to 2010.

God has been very good to me. In spite of all my mistakes, he has blessed me with a long and (so far) comfortable life. I have been allowed to work on a wide variety of very interesting projects, and I am very grateful.

Yes, this has been a long article, but how else does one cover 72 years of hamming? ⌋



HiDARG and ARES Offer Radio Merit Badge Support to Local Boy Scouts

The Fremont District of the Boy Scouts of America recently conducted a merit badge fair on February 28 and March 14. At the February session, Ray KG7AV, Mike KB7KLT, and Don WB0DVS offered the classroom instruction, using materials provided via the [K2BSA Radio Scouting Website](#). Roughly 30 scouts were in attendance on that first weekend.

The March 14 sessions focused on station equipment, make on-air contacts, and protocol, such as Q-codes. Mike KB7KLT, Don WB0DVS, Max KF7MAX, John KE7GYB, Jeff KE7ACY, Brian N7VME, and Brian KF7WPK all pitched in. Kudos to Carroll KF7ELY, who monitored 2m from Prineville and was on-hand to complete QSOs with the Scouts.

As of Wednesday March 18, Mike KN7KLT reported that five scouts had already completed all requirements for the merit badge. The club is looking to schedule a make-up day for scouts to complete their workbooks and wrap up any needed air time. Many, many thanks to all who helped support this event. Our outreach with the Scouts is a critical part of our long term planning for membership continuity -

Webelos Woods / Jamboree on the Air (October) – introduces the younger (9-10) Webelos to radio, leaving them with a positive first impression and an exciting memory.

Radio Merit Badge – focuses on Scouts aged 11-18, introduces theory and the many aspects of radio, and provides more hands-on opportunities. Older scouts can be encouraged to pursue their technician license.

Explorer Post – a future effort to register an official scout unit sponsored by HiDARG or ARES. A co-ed audience 16-21 years, providing licensing support and the opportunity to fully participate in training, events, and community service. ⌋

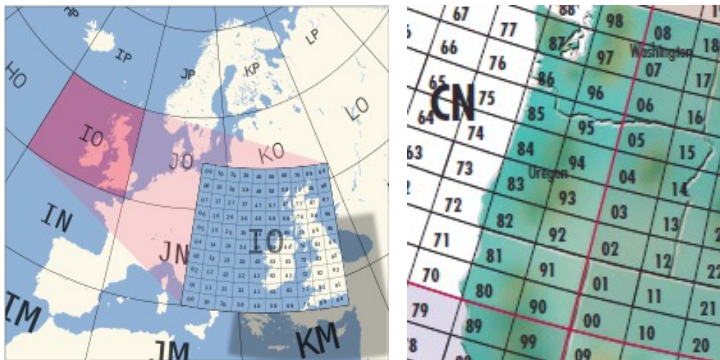
The Lowdown on the LOC

Most of us are familiar with our LOC, or Locator. We use it in QSOs, to register our profiles on various websites, and so on. We know what our particular Locator is, but how much do we know about the overall Maidenhead Locator System?

In European VHF contesting, operators needed a system to determine the distance between two stations. Contests usually awarded 1 point per kilometer, for example. This led to the QRA Locator System in 1959 – a grid system that used a six character code to identify location. Europe was divided into a grid of squares, each square being 2 deg longitude x 1 deg latitude. The lower left of the grid (AA) was at 40N, 0E – a curious location on the coast of Spain between Barcelona and Valencia. Each grid square was then divided into 80 numbered squares, each being 12' x 7'30". These were further subdivided into nine squares labeled a through j, each being 4' x 2'30".

In 1980, Dr. John Morris G4ANB, proposed expanding the system to that it could be applied worldwide. This involved moving the primary alignment from the GMT meridian to the International Date Line. The system was adopted by a meeting of regional VHF managers held at Maidenhead, England. Thus was born the Maidenhead Grid Locator System.

Similar to the older QRA system, the LOC system divides the globe into 324 (18x18) **fields** that are 20 deg longitude by 10 deg latitude. Axes are labeled A through R, with the lower left of AA being at the South Pole and the International Date Line. Labeling increases as you move north and east. Fields are further divided into a 10x10 grid of **squares**, with each square being 2 deg longitude x 1 deg latitude. Axes are labeled 0 through 9, from the lower left. Each square can be divided still into a grid of 24 x 24 **sub-squares**, labeled a through x from the lower left. Each sub-square is 5' longitude x 2.5' latitude. This results in the familiar six character code that we use as our locator AB12cd. This subdivision can continue up to a total of six coordinate pairs. Three pairs are usually the norm in amateur radio. This provides a precision of at least 12km.



Most of Central Oregon falls in CN93 and CN94. Bend, Redmond, Sisters, Madras and Prineville in CN94, and Sunriver and La Pine in CN93. Burns and Hines fall in DN03. John Day falls in DN04.

With so much of our logging being done by software these days, distances tend to be automatically calculated for us. We lose sight of the days when slide rules prevailed, and distances between stations were looked up from tables, or calculated by hand. One recent discovery I made was that my Garmin handheld GPS has a coordinate option for Maidenhead Locator, a handy tool for Summits on the Air and field work. ⊥

First Look:

AnyToneTech TRMN-8R

Ray KG7AV



We tend to have a love-hate relationship with many of the HT's coming out of China these days. Advocates will point to the significant functionality-per-dollar available in these products, while detractors will point to quality control, support, and user guides that are, at times, laughable. But over time, Chinese manufacturers seem to be doing their homework with regard to the English-speaking amateur radio market, and continual improvements are definitely being made. The recent entry of four new radios from AnyToneTech are certainly good examples of this.

The ANIL-8R is a 16 channel, single channel Rx programmable radio intended for commercial applications. The NSTIG-8R is a dual band 2m/70cm/FM broadcast Rx HT, much like we've seen from Baofeng, Wouxun, and other Chinese manufacturers. The OBLTR-8R marks the first of two intriguing offerings – a 200 channel 2/70/FM HT, but adding pre-programmed GMRS, MURS, and NOAA capability. Topping the line, the TERMN-8R adds cross-band VHF/UHF repeater ability, aircraft band Rx, and Rx ability across the ham HF bands to the OBLTR-8R feature set. It also has some interesting talk group / digital ID abilities. The radios are listed on Amazon for \$47, \$69, \$99, and \$139, respectively.

Once I got over the cheesy, but amusing naming scheme, I found myself intrigued by the notion of an HT that provides basic 2/70 abilities with cross-band repeat, provides a GMRS/MURS solution, and which might also serve as an entry-level total-monitoring solution. So I took the plunge and ordered a TERMN-8R off Amazon. The basic package includes the radio, battery pack with belt clip, wrist strap, recharger base with AC adapter, and antenna. I was pleased to see that, like my existing Wouxun KG-UV3D HT's, it used the same female SMA antenna connector and the two prong Kenwood-style mic / accessory connector. All of my existing antennas, programming cables, TNC interfaces, and other accessories worked on the TERMN-8R.

The manual is pretty well written, with very few grammar or stylistic errors. The free software for programming the unit, while functional, still has a **long** way to go in terms of intuitive use. Little things like the tab key taking you to a menu tree instead of the next cell, or lack of copy/paste functionality can make things frustrating. CHIRP is in the process of releasing an update that will include drivers for these four new rigs. I'm anxiously awaiting that upgrade.

It did not take long to program in a handful of our local repeaters and the most used simplex frequencies around the area. As a 2/70 handheld, it functions just as I would expect, feels good in the hand, and the audio quality is quite acceptable. Switching between main and sub bands, single and dual channel, memory and VFO modes work just like most HTs in this class. One feature I appreciated was the

Items for Sale or Swap

Mark Johnston, KC7DMF, has the following items for sale:

- KLM 2 meter all mode linear amp. PA 10-160. 10 watts in 160 watts output. Sells new \$400.00, asking \$150.00
- IRLP node, interface / raspberry pi computer. New \$300.00...asking \$150.00.

Interested parties should contact Mark at 503-530-1376, or email him at markjohnston73@gmail.com

Working Group Updates

Trailer - Order placed with Trailer's Unlimited of Bend for \$800. Awaiting delivery so we can begin topside engineering projects to mount the mast and equipment boxes.

Website - Prototype is completed, but BendBroadband has announced that they will stop hosting non-profit websites for free. Seeking a new ISP host for our content at this time.

On-Air Event and Contest Calendar

Montana QSO Party.....	Apr 4-5
PODXS 070 31 Flavors PSK Contest.....	Apr 5
ARRL Rookie Roundup SSB.....	Apr 19
10-10 Spring Digital QSO Party.....	Apr 25-26
10-10 Spring CW QSO Party.....	May 2-3
7 th Area QSO Party.....	May 2-3

This is by no means an exhaustive list! For more info, see

<http://www.radio-sport.net/calendar/>

<http://www.arrl.org/contest-calendar>

<http://www.ten-ten.org/>

<http://www.podxs070.com>

Statement of Financial Condition as of 24 March 2015

Bank of America Opening Balance 1 Jan 2015.....	7,175.60
Income YTD.....	678.00
Expenses YTD.....	760.06
Bank of America Closing Balance 24 Mar 2015.....	7,093.54
(a) Paypal Balance (HIDARG).....	448.77
(b) HIDARG (includes (a)) Unrestricted	2,768.51
(c) ARES Designated Funds.....	3,352.45
(d) Drew Holmes Fund (Outreach and Education).....	1,421.35
(e) Trailer Fund (included in (b)).....	800.00
(f) Total Fund Balances (b+c+d).....	7,542.31
Subtract PayPal to balance to BofA (f-a).....	7,093.54

Upcoming Meeting Topics

Monthly Business Meeting - 1st Thursday of the Month
April 18 - Spring Potluck? Swap Meet?
Maker Mill Update

Nets

+ JeffCro Net - Mondays 1900H, 147.38+ PL 162.2
+ HIDARG Weekly 2m - Tuesdays 1900H
See the [HIDARG website](#) a list of repeaters.
+ HIDARG 2m Simplex - Mondays, and Tuesdays following
JeffCro and HiDARG nets, 146.58 MHz

2015 FCC Licensing Test Sessions

11 Mar, 29 Apr, 03 Jun, 15 Jul, 19 Aug, 30 Sep, 4 Nov, 15 Dec
Deschutes Public Library, downtown Bend branch, upstairs
For more information, contact [Joe Barry, K7SQ](#)

AnyToneTech TERMN-8R cont...


ability to program one of the side keys as the PTT for the sub band, saving me from having to stop, hit an A/B key, and then PTT. Another interesting find was that in order to Tx DTMF tones, you store strings in a set of DTMF memory channels, and then Tx the contents of the channel. While that could be a pain for DTMF-on-the-fly, I found it handy to be able to pre-program in DTMF strings for Long Butte and the Dead Indian Link to have readily available for nets.

The most intriguing feature, of course, is all the multi-band capability. FM, like a lot of HTs in this class, is accessed by hitting a function key combo, in this case Function+FM. That's a misnomer, it really should be called "ALT". Once in that mode, you use the knob to select between broadcast FM, weather, aviation, SW, and AM broadcast bands. Several important notes here - (a) An external antenna is a MUST if you expect to receive anything on the SW or AM broadcast bands. (b) The SW range is 2.3 - 30 Mhz (sorry no 160m), and (c) SW Rx mode is AM only, no sideband support. I found the latter somewhat disappointing, in that I was hoping to try some voodoo in using an iPhone app to decode PSK31 streams off the HT. Nonetheless, slaving it into my 80m loop with an SMA to SO239 adapter allowed Radio Havana to come booming in on 6060kc. I see about 135 ft of wire and a banana plug for the field go-kit.

To get into the GMRS/MURS modes, you hold down a side key as you power up, and then use the knob to select between "Normal", GMRS, or MURS modes. This then sets power limits and loads pre-programmed channels. With 200 memory channels to work with, I found it easier just to program the 23 GMRS and 5 MURS channels in the normal HT mode, since Tx capability is wide open.

A quick newsletter review can't do the full justice that a more comprehensive technical review can provide. Some links to additional specs and reviews:

<https://www.anytonetech.com> - US Distributor website
<http://www.amazon.com> - Search TRMN-8R for more specs.
http://www.miklor.com/COM/Review_TERMN-8R.php

Bottom line - at a price point of \$139, there's a lot of radio packed into this little HT. CHIRP support will help ease the programming. If they add USB/LSB ability to the HF Rx in a future revision, that would be a true game-changer. I could certainly recommend that a newly licensed Technician or a family looking for a general purpose camping or preparedness radio give the TERMN-8R a serious look. 



Mark Your Calendar

April

2 Monthly Business Meeting - 7pm
DesCo ARES - 6:30 pm ODOT Bend
18 HIDARG Spring Potluck
15 OEM/ARES Spring SET
29 FCC Exam Session - Deschutes Public Library Bend

May

7 Monthly Business Meeting - 7pm
13 DesCo ARES - 6:30 pm ODOT Bend
16 Pole Pedal Paddle