

August 2012

Try Something Different on HF

by Larry Ledlow, Jr. N1TX

It's natural to whine about how poor conditions on HF have been this summer. The solar cycle so far has been largely a bust. Instead of moping about no DX in SSB or CW, you need to adapt your operating to conditions. Try a weak signal mode like Olivia or JT65A. It can breathe life back into the bands for you.

Many of you have never heard of these digital modes, but no doubt you have heard of soundcard interfaces. You may even have one but haven't explored all the possibilities. You will need a soundcard interface and a computer.

West Mountain Radio's Rigblasters and Microham products are very commonly used in digital modes. My personal favorite for simplicity and performance is the Microham USB-III. It includes an internal soundcard, cables for your radio, and a simple USB connection to your PC.

You will have to run software such as Digital Master 780 (DM780, included with Ham Radio Deluxe), WSJT, or JT-65HF to transmit and receive. When adjusted properly, such a system can decode signals so buried in noise, the human ear cannot discern them. JT65A, although very slow, is the one of the best performers.

A while back I wanted to investigate the potential of some weak-signal

digital modes, and I discovered the Weak Signal Propagation Reporter (WSPR) network. WSPRnet is a group of amateur radio operators using K1JT's MEPT_JT digital mode to probe propagation conditions using very low power transmissions. Five watts or less is common.

WSPR stations alternate broadcasting periodic beacons and listening for others. The results are posted to the internet. Imagine my surprise when my 10W 40m signal to a dipole was heard in Madagascar! Beacons is one way, however.

These days JT65A is the mac-daddy of weak signal, digital, two-way communications on HF. Again, K1JT has created a mode to really DX with low power, even from Alaska in the doldrums. JT-65HF by W6CQZ is an easy-to-install Windows program to get you started. Best performance will be had using WSJT, but installation and operation is technically a little tricky for beginners.

Both WSPR and JT-65A use the power of the CPU to dig deep into the noise and find slowly modulated tones. An accurate PC clock is essential, so make sure your system is synchronized to the second.

A couple of years ago during a solar event that wiped out all 20-10m signals on CW, I was able to communicate with British Columbia and across Pacific islands all the way to Australia and New Zealand on 15m using Olivia mode. Olivia does very well in poor conditions. While there are variations, the basic modulation consists of a series of shifted tones. It is slower than PSK31, but much better suited for ragchewing than JT65A.

Ham Radio Deluxe's DM780 add-on, MixW, and FLDigi (multiple O/S) are good places to start. There is a small but growing Olivia community on the bands for support. ++

Just What is APRS?

In 2012, the Automatic Position Reporting System created by Bob Bruninga WB4APR is a far cry from the simple tracking system invented in the 1980s. APRS has matured into a very powerful information service with tremendous potential for many applications.

The core of APRS is the tracking and position reporting functions. A simple tracker to keep watch on a station or an object just requires a GPS, a packet radio modem (TNC), and a radio. New positions are transmitted as the object moves or if a beacon interval has been programmed. Tracked units can be viewed on a map.

Add to that the capability to exchange short messages, and you have two-way communications with position information attached. Stations can send each other status, operational instructions, weather, and other details, or just send a simple hello. With an APRS mapping program, GPS, or a mobile navigation device like Avmap, situational awareness of your local area is at your fingertips.

A digipeater relays APRS packets to a broader area and can go through several hops to cover a vast region. The Interior APRS network covers from Denali almost to the Yukon River bridge and from Manley to Delta. Much of the information is relayed to the internet for worldwide access via gateways, or igates.

As an information conduit, APRS now includes the capability to provide details and location repeaters as well as points of interest and emergency services.

ARES members, travelers, outdoors enthusiasts, and special event groups are just a few of the groups to find APRS useful. ++

Inside this issue...

Contest Manners...page 2

WL7GK Shows Off...page 3

APRS Network...page 4

AARC Board Report...page 5

Contest Corner

Two Rivers Contest Club KL2R

CONTEST ETIQUETTE

Many hams are down on contests, because they often disturb the nets and interfere with ragchewing or casual DX. Fair enough. QRM is a two-way street, though. A lot of the frustration can be minimized by following a few simple rules.

1. Before transmitting, listen carefully, and then ask if the frequency is in use.
2. Be aware that conditions change. When two stations who have been on the same frequency for hours suddenly can hear each other, they have to negotiate or one simply vacates the frequency. Get over it.
3. Realize that no one owns a frequency. Be flexible. Many HF nets are the worst offenders in asserting "ownership". SSTV operators will readily jam contesters in and around "their" frequency of 14231 kHz. It's best for contesters to avoid the common net frequencies.
4. If you're a "Sunday drive-by" - a ham who jumps in for fun in the last hours - please make sure you understand the exchange. In a contest, stations usually send a signal report and some sort of other information like serial number, zone, state, etc. Signal reports are ALWAYS 59 or 599. Don't answer "CQ contest," with something other than the correct change. Look it up.
5. Also, do not answer "CQ contest!" with your life story. We'd love to chat... AFTER the contest.

SUGGESTED SOFTWARE

Windows contest loggers: Win-Test 50 euro, or about \$65) and N1MM (free). N1MM supports more contests and modes. At KL2R, we prefer the interface, functionality, and performance of Win-Test for most common contests.

General logging: DXKeeper, part of the DXLab Suite (free) and Ham Radio Deluxe (\$59.95). HRD is pretty, but the DXK makes managing big logs easy.

Islands on the Air

A fun twist on DX Awards



Islands on the Air (IOTA) fans are growing by leaps and bounds. The award program recognizing contacts with islands is a fun way to learn geography and DX. Certificates are issued for working as few as 100 islands. Over 20 awards are possible to achieve. The IOTA wallpaper collectors are a determined lot, and many enjoy activating rare islands. Alaska has a number of desirable islands, and a small DXpedition is possible for many. Complete rules are at this link:

<http://www.rsgbiota.org/info/directory/rules-en.pdf>



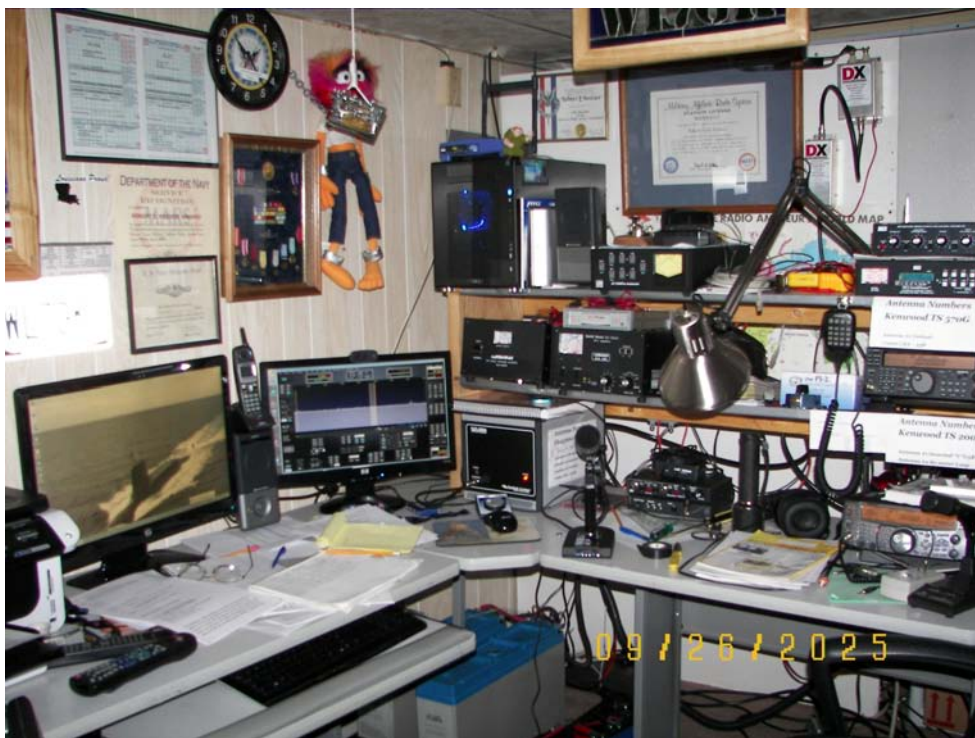
Yaesu Introduces FTDX-3000 at Dayton

Rumors Say Price May Be Less Than FT-2000

- TX Frequency Coverage: 160-6 meters
- RX Frequency Coverage: 30 kHz-56 MHz
- Operating Modes: USB, LSB, CW, AM, FM
- Digital Noise Reduction
- Large 3.5 inch color LCD (480x272)
- Power Output: 5 to 100 watts HF-6M
- IF DSP
- Built-in Electronic Keyer
- Built In Antenna Tuner
- High Speed Spectrum Scope
- Price TBD

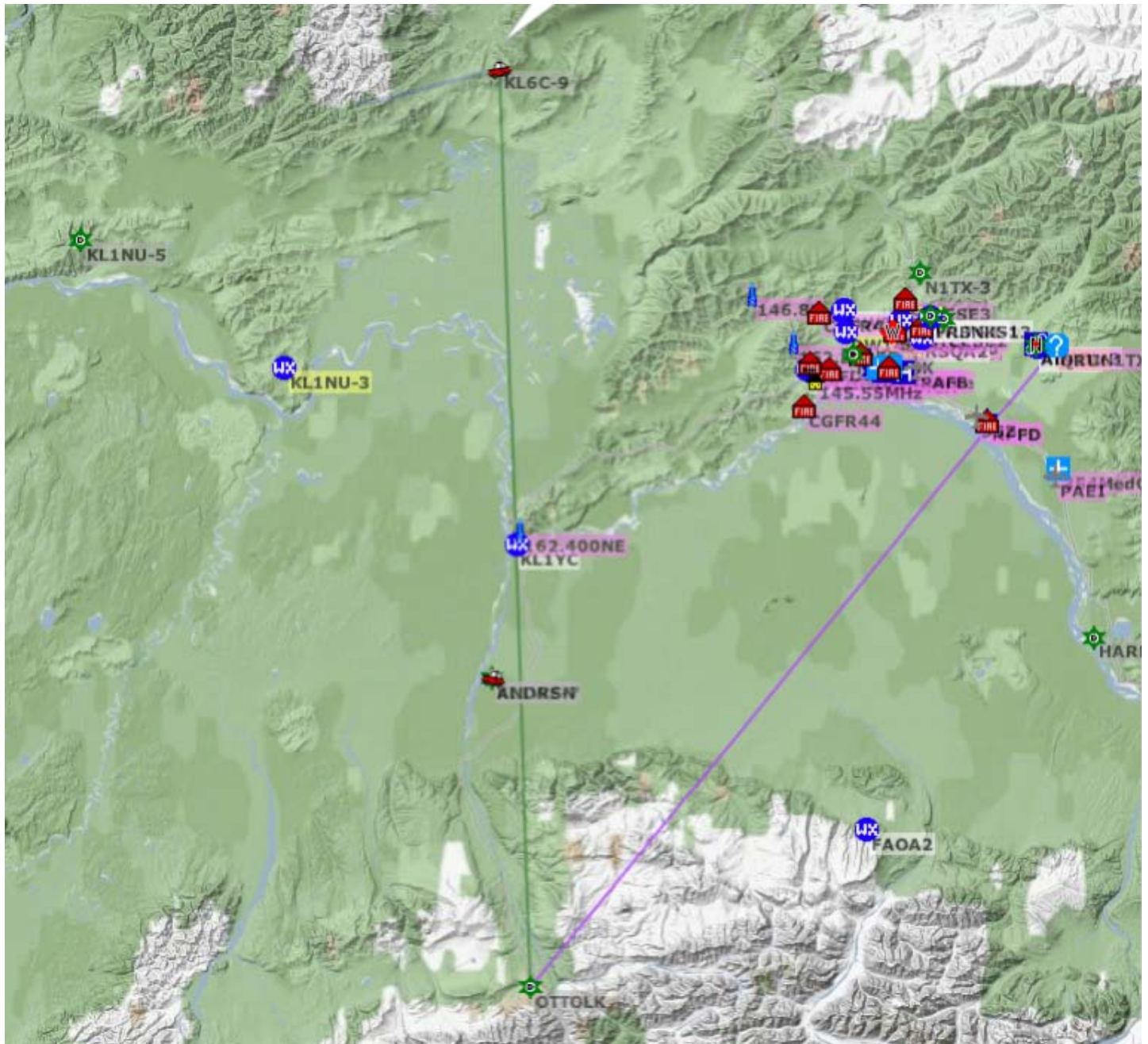


Shack Tour: Bob Kreiser WL7GK



Anyone who knows Bob WL7GK understands just how proud he is to be (a) a retired submariner and (b) the owner of some of the latest ham radio technology. In the corner you will see a FlexRadio FLEX-5000A that covers practically DC to daylight. An Ameritron solid-state amp, Kenwood TS570G, and TS-2000 round out the lineup. The Vibroplex key dangling from a hangman's noose above the operating position reflects his opinion about Morse code! An HF loop and several other antennas adorn his city lot near UAF. He is also a member of Navy MARS. 73, Bob!

Interior APRS Coverage



The map above shows just part of the story with the Interior APRS network. Impressively, KL6C is traversing the Elliott Highway west of Livengood, and KL8DX's digipeater in Healy relayed it to N1TX in Two Rivers. From there it was posted to the APRS-IS internet servers. Several weeks ago, the Fox digi north of Fairbanks digipeated packets from a mobile ham just south of the Yukon River Bridge. The new WL7GX digi at Harding Lake extends the range along the Richardson Highway toward Delta. Delta will soon have an igate, and a new digipeater atop Nenana Hill is in the works to broaden the coverage further along the Parks Highway, Minto Flats, and beyond.

Personal investments, donations, and a grant from the Arctic Amateur Radio Club have made this possible. The simplicity and low cost of setting up an APRS network enables Interior hams as well as visitors to tap a vast information service. APRS provides location, mapping, messaging, and many other features via VHF and HF. If you are interested in helping, send an email to n1tx@akradio.net.

AARC Board Report

Minutes from the Aug 9th Meeting

Meeting started at 7:20 pm with a quorum consisting of: Linda and Bill Mullen, John Slater, Billy Brookins, Bob Kreiser, Myles Thomas and Neal Brown.

Bob moved and John Slater seconded we create and give a wood plaque with words inscribed on metal honoring Jim Movious's service to AARC. Neal will create some words, send them to BD members for comment, will add KL7KC logo. Jim came to Fairbanks in 1967 as a licensed ham and presumably joined AARC soon after. After discussion, the motion passed.

Bill Brookins brought up for discussion finding a venue for our next hamfest where testing can be done in a separate room. John Slater added that low turn out this year may have been caused in part by not getting information out about the ham fest months in advance instead of 90 days as was done this year. A venue with easy parking, easy access, a separate room for testing. The date of the ham fest used to be midSeptember, and was moved to Tanana Valley State Fair time to hopefully gain more people coming from outside of Fairbanks. Low turn out this year might suggest we return to a mid-September ham fest date.

7 September meeting in Room 202 Hutchinson:

Jerry Curry will be asked to lead the

meeting as both president Neal Brown and Vice President Steve Estes will be out of town. Russ Ackerman will present at 7 September meeting. Door prizes for 7 September meeting will be items Jim Movius donated at 3 August meeting.

Billy Brookins while not privy to information has learned that KUAC will be undertaking major work at their Ester Dome facility. Our repeater is co-located. We ask Steve Estes and Kevin Abnett to try and learn how this upgrade activities might impact our repeater installation.

Daniel Wietchy is working on new web site which will become operational early next year. John Slater will step away from maintaining the current web site then. We will ask Dan to help find someone to maintain the new club web site.

Linda has 2 club kits available, John Slater has built his own, so his kit is available. These kits consist of a 2 meter winlink system.

Suggestions for presentations at future meetings:

- cross band repeater
- How to program a Wouxon radio with a computer. Where to find software. Where to buy the unique cable required. How to use the software.

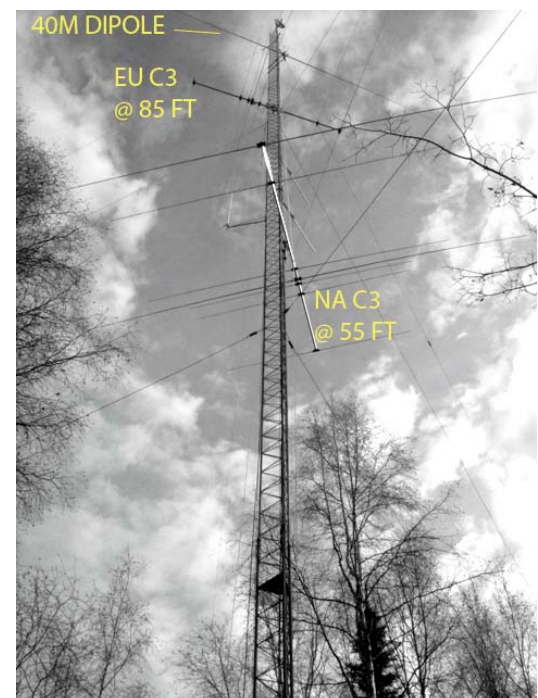
KL2R Antenna Farm

This mammoth structure (below) is only a remnant of KL7RA's antenna farm. He had seven towers, some of which hit 190 feet. This tower is Rohn 55 tapering to Rohn 45 and approximately 140 feet tall. N1TX purchased the place in 2004. (Photo credit: KL1RL.)

The Force 12 C3 at 55 feet is fixed towards US and South America, ESE from Two Rivers. A vertical delta loop (Radio Works Super Loop 80) strung between the tower and trees is used on 80-30m. A second C3 has been installed at 85 feet and pointed towards Europe. A Force 12 EF-140 rotatable dipole for 40m adorns the 100-foot level directed E-W for NA and JA.

Top Band sports an MA-160V vertical with four radials. We're also considering 80m options to augment the Super Loop 80. 40m needs enhancement, as the dipole is only effective in limited windows.

An Array Solutions SixPak 2x6 antenna switch mounted at the tower base feeds two positions, A and B. Two FT-950 transceivers are the core. W3NQN bandpass filters allow simultaneous operations. Additional antenna switching options and sharing of one amplifier remain questions to resolve. Lightning protection is provided at the tower through Polyphaser in-line protectors, with a single-entry tie point planned. Polyphasers are also inside the shack.



08/16/2012 | Southeastern US Special Event Station W4T NVIS Test

Aug 16-Aug 29, 0001Z-2359Z, W4ETT, Dickson, TN. W4ETT. 3.885 7.280. QSL.
Don Harper W4ETT, 230 Cullum Ave, Dickson, TN 37055. Southeastern US Special Event Station W4T NVIS Test The 2nd Brigade of the Tennessee State Guard will be operating Special Event Station W4T under emergency field conditions from 17-19 August 2012 from their training area just outside of Tullahoma TN. This operating time will be an addition to our operations on Military/MARS frequencies, and we would like to have signal reports from all Tennessee Counties as well as from hams in the Southeast US Region. We will be QRV on 80 and 40 meters SSB/CW/PSK31 along with some 2 meter FM Simplex work. We'll be using NVIS antennas on HF and Vertical yagis on 2 meters. After 19 August the test will continue from Dickson TN EM66 until 29 August 2012. All hams are invited to contact us and exchange signal reports during this time. Please give this information the widest possible publication. We look forward to contacting you. QSL via W4ETT.