ROUNDTABLE

The Denver Radio Club Newsletter

November 2008 Since 1917

PRESIDENT'S MESSAGE

By Gerry Villhauer-W0GV

Hello All,

It has been a productive month for the DRC. Our technical problems with the 145.490 and 448.625 repeaters were solved and our nets have moved back to these repeaters. Our thanks to Orlen, WA9TVH, for his several trips to our Centennial site. We hoped to have the new repeater up and running at our Hudson site, but the service monitor used to make the needed adjustments had a failure. So that must be repaired before we can proceed with the Hudson project. It seems like old Murphy is our worst enemy. He seems to continually find us and spread his misery; but not to worry we will prevail. Our last month's program was a huge success. We had 45 members and guests in attendance at the Lakewood Office of Emergency Preparedness (EOC). Thanks to Brian Nielson for a very informative presentation on the inter-workings of the EOC. Brian invited us to hold another meeting at the EOC. We will definitely accept his offer on a future meeting.

Lance Wilson, N1ETV, will present the November program. Radio waves traveling along transmission lines are mystical at the very least. It's a magic show! Lance will be showing you how to use the MFJ Analyzer and better understand these phenomena. There will be hands on demonstration with 1/2, 1/4 and 1/8 wavelength coax cable to build confidence on your next antenna project. You will be amazed and all the functions you can do with the MFJ Analyzer. You will learn all this and more at the November 19th meeting; don't miss it.

I would like to welcome new DRC members: Sharon Ehler, KB0EKM, Robert Pabst, KD0FAC, John Rushford, KD0FKS, Ronnie Warren, KE5NSM, Debbie Warren, KE5NTJ, Jessica Warren, KE5BKQ, and Kristen Warren, KE5BKR. Please come to the meetings and activities and be an active member.

I have a request to put out to the membership. I would like to have a volunteer to chair a committee to assure we have representation at most of next year's hamfests. This does not mean you would have to attend all the hamfests; just make sure there are a couple members at each event to represent the DRC. The purpose is to man the DRC table, pass out our membership information, and present a positive image of our club. If you are interested, please call or email me.

See you all at the meeting November 19th at the St. Joseph's Episcopal Church, 11202 West Jewell Ave., Lakewood, CO. That is about two blocks West of Kipling on West Jewell. And remember to check our website, w0tx.org, for lots of important information about the DRC. The Elmer Session and Tech Meeting start at 6:30 p.m. followed by the Regular Meeting and Program at 7:30 p.m.

73
Gerry, W0GV

INSIDE THE ROUND TABLE

OCTOBER MEETING - WHAT'D I MISS

By Bill - W6OAV & Jim - K0TOR

There were 45 attendees at this month's meeting which was held at the Lakewood EOC! After introductions W0GV began the business meeting by announcing that the Centennial Cone repeaters are now fully operational. WA9TVH had repaired a bad pin connection which was causing the earlier squelch problems. W0GV then announced that the Hudson 147.33 repeater should be operational very soon. WA9TVH gave an overview on how the two 147.33 repeaters will operate relative to PLs, coverage, etc. W0GV finished the business meeting by announcing that the club's other call, W0OUI, will now be used at the Salvation Army and for other emergency communications.

The meeting was then turned over to Brian Nielsen. Brian is the Manager for the City of Lakewood's Environmental Services Division. He is also the Emergency Preparedness Director for the City of Lakewood. Brian described the various functions of the EOC groups, their intergroup communications methods and their physical placements within the building. He also demonstrated the various EOC computer systems and the audio/visual systems. Brian then pointed out the ham radio room. This radio room serves as our base station to support the EOC operations as well as the Lakewood siren test each year. The room contains a Kenwood TM-V7 and a Yeasu FT 212 RH. Two new dual band (2M/70CM) vertical antennas have been installed on the roof.

Brian believes that ham radio support is important to provide supplemental or alternative communication to the City of Lakewood and West Metro Fire District during emergencies. DRC has been invited to participate in simulated EOC exercises in preparation for supporting actual emergencies.

After Brian completed his presentation, he gave attendees a tour of the dispatch center.

TECHNICAL COMMITTEE REPORT

By Bill - W6OAV

This report presents an overview of the main items discussed at the October Technical Committee meeting.

High Priority Projects

145.49/448.625 Relocation Project

Goal: Relocate antennas and repeaters to Centennial Cone.

- Last week WA9TVH fixed a broken pin which was causing the squelch problem. He plans to go to the site in the near future to check the audio levels with a service monitor. All is working well.

147.33 Relocation Project

Goal: Bring a second 147.33 repeater on line at Hudson with a different PL.

- The new Kenwood repeater has arrived. All the necessary installation hardware is ready. WA9TVH will assemble and bench test the repeater before taking it out to Hudson.

Voter System

Goal: Develop plans for voter system (A good winter project).

- Once the above projects are completed, the tech committee will schedule a system design meeting at W0GV's wife's office.

Medium Priority Projects

145.49/448.625 Command-able System Split

Goal: Implement a command which will allow remote control of the interconnection of the two systems.

- WA9TVH has obtained, and is studying, the 7330 controller documentation. The 7330 will allow the split feature plus many other desirable features.

Windsor Project

Goal: Define an emergency plan based upon what we learned during the Windsor project.

- The SA will critique their past emergency operations at Windsor and the DNC. The critique will result in an updated emergency plan.
- No change in status. Removing from agenda as not a technical issue.

Special Courtesy Tone/Announcement for Repeaters in Emergency Mode

Goal: Configure the controllers for;

1) A Command enable special courtesy tone (such as a double beep) which will indicate to users that the re-

(Continued on page 3)

(Continued from page 2)

peater is in the emergency mode;
2) A command enable emergency mode message.
The board will decide at their next meeting on what features are desired.

TSA Battery Backup Procedure
Goal: Modify the backup battery activation/deactivation procedures to support the Kenwood 430.

- N1ETV will modify the existing procedures and email to W6OAV.

TSA HF to HF Interference
Goal: Reduce interference between the Kenwood and Drake.

- N1ETV and W0GV will test when they go to the SA to install a weather proof cabinet on the NVIS antenna tuner.

Low Priority Projects

Harris Radio
Goal: Dispose of the Harris Radio.

- The tech committee agreed to salvage the more valuable parts from the radio and sell them.

HF NVIS/Non-NVIS Telpac Gateway at the SA
Goal: Provide an NVIS/Non-NVIS HF Telpac Gateway as an alternate for existing VHF Telpac Gateways. This Gateway will provide access when communicators are out of range of the existing VHF Telpac Gateways.

- W6OAV has discussed with N4ATA. When the new WinLink beta application is debugged, we will begin implementation at the SA.

TSA projects
Goal: Determine future antenna requirements.

- N1ETV is engineering a bi-directional wire system which will probably be a T2FD or double folded dipole.

THE W0QL / W6OAV QRP EXPEDITION PART 1

By Bill - W6OAV

Mark, W0QL, and I often talked about how fun it would be to carry a small low power HF station on our mountain bikes and set it up somewhere in the field. We wondered how well the station would work. Well, thanks to Mark, we went out twice. The first time we went out with a low power CW station. The second time we went out with a low power PSK31 station. Both stations both worked well!

Part 1 of this article describes our CW "expedition". Part 2 describes our PSK "expedition".

STATION REQUIREMENTS
In preparation for our trips, Mark had to design the portable stations. His requirements for the stations were:

1. The components had to be small and light weight.
2. All components had to fit in a backpack or on a bike.
3. The transceiver had to be low power, especially on receive. Since more time would be spent tuning the band, receiver power consumption is very important.
4. The transceiver had to be easy to operate, ergonomic, stable and contain enough features to provide the required performance, especially under tough conditions.
5. The antenna had to be easy to assemble and very efficient.

As described below, Mark successfully assembled a low power 20 meter CW station and a low power 20 meter PSK31 station. Both stations met the requirements stated above.

THE CW STATION CONFIGURATION
The photo below shows the components of the CW station. The components are described below. Also, the WEB sites for the components are listed should a reader be interested in obtaining more details about a particular component.

1. Transceiver: Elecraft KX1 - This 9 ounce rig is jam packed with desirable features. The transmitter runs 1.5 to 2 watts on internal AA batteries. The receiver only draws 38 ma on receive. Mark especially likes the controls being on the top of the unit instead of on the front. More information is available at http://www.elecraft.com/KX1/KX1.htm

(Continued on page 4)

(Continued from page 3)

2. Key – This Russian-made knee key (with knee strap and hardware removed) is small and has a nice "feel".

3. Power system: Power is provided by the KX1's internal AA batteries.

4. Antenna: PAR EF-20 – This antenna is an end fed ½ wave length dipole equipped with a small efficient matching network. The antenna requires no radials. It can be easily mounted horizontally, vertically, or in any configuration in between. As with any end fed half wave antenna, the PAR EF-20 provides several dB gain over a full sized ground plane. Information is available at http://www.parelectronics.com/end_fedz.htm

5. Feed line: 25' RG-58U – The coax is equipped with male PL-259 plugs on each end.

6. Sling shot: EZ-Hang – This sling shot can accurately shoot a line over 100 feet and provides an easy method of getting an antenna hung from a tree. Information is available at http://www.ezhang.com/

7. Back pack: Camelback Mule – The Camelback is a backpack containing a bladder and a tube connected to the bottom of the bladder. Mountain bikers wear the Camelback on their backs and use the tube to draw water from the bladder while riding. Mark removed the bladder to provide a back pack with many small auxiliary pockets.

GETTING TO THE RADIO SITE AND SETTING UP THE EQUIPMENT

On the big day of our CW expedition, I met Mark at the bike trail head. Mark was wearing his modified Camelback containing the entire CW station. He was grinning and ready to go.

Photo 2

Once we arrived at the site and unpacked the equipment, Mark got out the EZ-Hang. He shot the EZ-Hang weight over a tree branch about 40' above. Photo 3. Mark did a good job of aiming that device. Once the line was over the branch, we attached the PAR EF-20 and hoisted it up vertically.

Photo 3

Photo 4 shows the site and the location of the antenna which is outlined in Red for clarity. The square at the end of the antenna is the matching network. Photo 5, shows the antenna and the matching network.

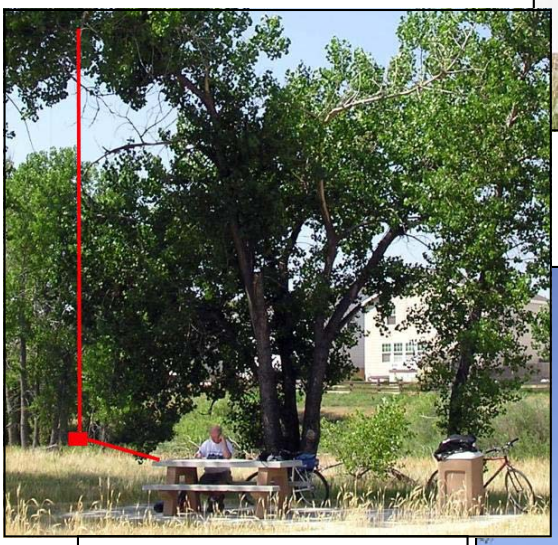


Photo 4

Photo 5

Before operating, we measured the SWR of the PAR EF-20 using the MFJ 259 antenna analyzer. We were amazed to find that the SWR measured as shown below:

MHZ	SWR
14.000	1.4
14.100	1.1
14.200	1.0
14.300	1.3
14.400	1.5

(Continued on page 5)

(Continued from page 4)

OPERATING THE STATION

Satisfied with the antenna installation, we took turns operating for the next hour. Photo 6 shows Mark working K0IUK in Springfield, MO. The small Russian key that he is using had a great "feel". The KX1 provided outstand performance on receive and transmit and was very easy to use. The antenna loaded up and worked very well.

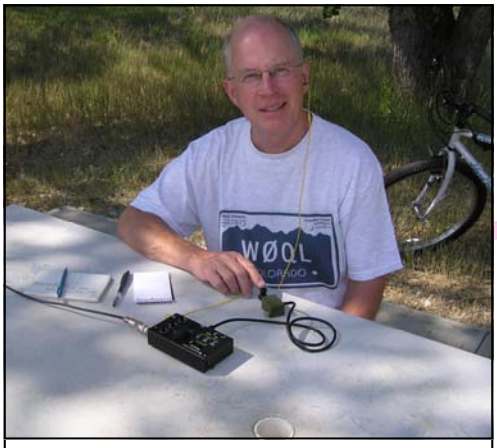


Photo 6

20 meters was in terrible shape. Not too many signals were heard as the solar flux was about as low as it can go. In spite of these conditions during the hour that we had available, we worked the following stations:

STATION	LOCATION	OUR REPORT
K0IVK	Springfield, MO	569
KB8WGA	Big Rapids, MI	559
W9FFU	Bar Harbor, WA	599
KD6DIC	Merced, CA	339

After an hour we had to disassemble the station and head home. As photo 7 shows, at the end of the hour Mark and I were grinning "happy campers". We considered this adventure to be a complete success in spite of bad band conditions! The test showed that low power stations CW can successfully communicate with simple efficient antennas.

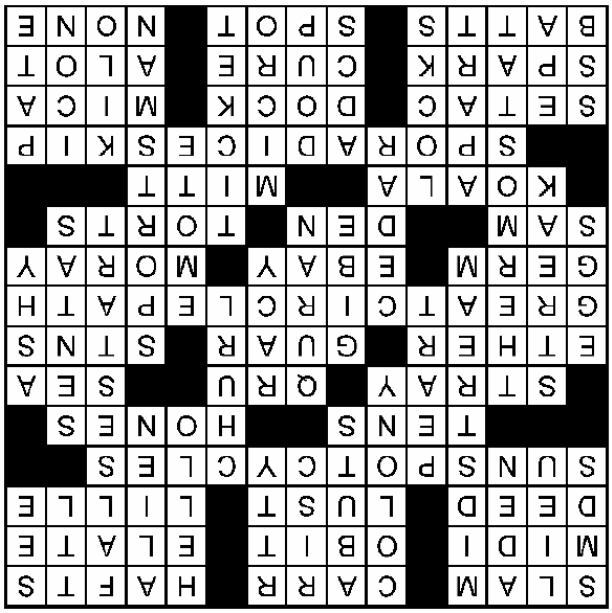
Photo 7

Part 2 will cover the construction of, and our experience with, the low power portable PSK31 station.

LAKEWOOD EOC SUPPORT DURING DNC

By Jim – K0TOR

I would like to recognize the following DRC members who volunteered time to man the Lakewood EOC during the Democratic National Convention. Frank Moran, KB0YLM, Charles Hutchinson, KB0UZI, Dave Baysinger, WG0N, Ryan Straughan, N0RYN, Charles Wright, N6LD, and Bill Busch, K0IKP. Your support showed the Denver Radio Club's commitment to supporting the City of Lakewood and West Metro Fire District for these types of operations. Bryan Nielsen and his staff at the Lakewood EOC expressed their appreciation for our members' time and support during the DNC. I was pleased with the response from our members and I thank you for your support.



SOLAR UPDATE

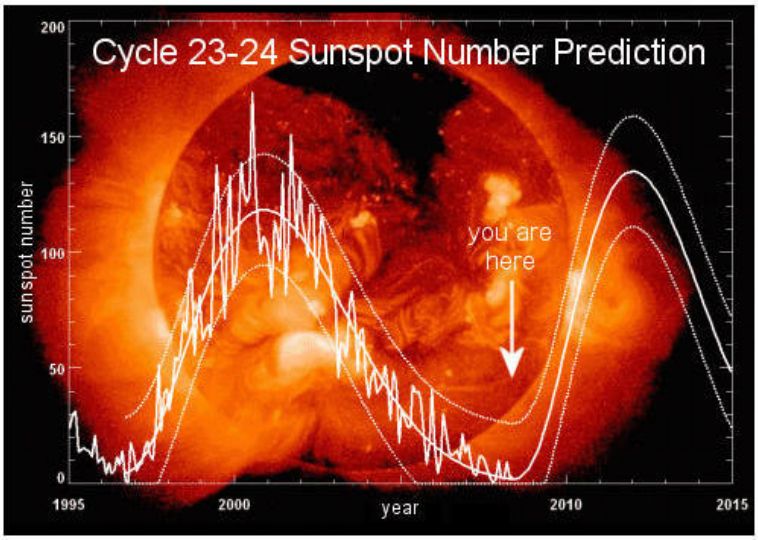
By George - AG0S

You may remember in January everyone was so excited, the new Solar Cycle had begun. But then the sun took a nap. Because of the long period of inactivity some solar physicist speculated that we were headed for another long solar minimum like the 70 year *Maunder Minimum* which began in 1645 and ended in 1715.

But that isn't so says David Hathaway of the Marshall Space Flight Center, "The ongoing lull in sunspot number is well within historic norms for the solar cycle."

What the heck is going on?

During Solar Max, huge sunspots and intense solar flares are a daily occurrence. Auroras appear in Florida. Radiation storms knock out satellites. Radio blackouts frustrate hams. The last such episode took place in the years around 2000-2001.



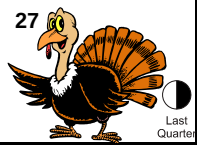
On the other side of the coin, during the Solar Minimum the opposite occurs. Solar flares are almost nonexistent while whole weeks go by without a single, tiny sunspot to break the monotony of the blank sun. This is what we are experiencing now.

Although minima are a normal aspect of the solar cycle, some observers are questioning the *length* of the ongoing minimum, now slogging through its 3rd year. So, what's next? Hathaway anticipates more spotless days, maybe even hundreds, followed by a return to Solar Max conditions in the years around 2012.

"It does seem like it's taking a long time," allows Hathaway, "but I think we're just forgetting how long a solar minimum can last." In the early 20th century there were periods of quiet lasting almost twice as long as the current spell. Most researchers weren't even born then.

NOVEMBER 2008

DRC Net Sunday 8:30pm Local

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 ***ARRL*** November *CW* Sweepstakes Begins 2100UTC
2  **Daylight Savings Time Ends**	3 ***ARRL*** November *CW* Sweepstakes Ends 0300UTC	4 	5 ***Learning Net*** 7pm	6 First Quarter	7	8
9	10	11 ***Veteran's Day*** 	12 ***Learning Net*** 7pm	13 Full Moon	14	15 ***ARRL*** Int'l EME Comp Begins 0000U ***ARRL*** Nov. *Phone* Sweepstakes Begins 2100U
16 ***ARRL*** Int'l EME Comp Ends 2359U ***ARRL*** Nov. *Phone* Sweepstakes Ends 0300U	17	18	19 ***DRC Meeting*** Elmer 6:30pm General 7:30pm	20 New Moon	21	22
23/30	24	25	26 ***Learning Net*** 7pm	27  Last Quarter	28	29

Check www.ARRL.org for Contests and Rules!

DRC Board of Directors

President	W0GV	Gerry Villhaurer	303-467-0223	W0GV@hotmail.com
Vice-President	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
Secretary	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
Treasurer	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Board Member	KB0A	Bryan Steinberg	303-987-9596	KB0A@arrl.net
Board Member	K0HTX	Dave Gillespie	303-880-1938	K0HTX@comcast.net
Board Member	AC7SX	Joe Delwiche	303-233-6229	lakewoodjoe@aol.com
Board Member	K0RCW	Robert White	303-619-1048	rcwhitejr@mac.com

DRC Staff and Volunteers

Trustee	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
Net Control	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Emergency Coordinator	K0SSE	Oscar Hall	303-375-0627	oscarh@aol.com
Membership	KC0OUQ	Bob Proctor	303-986-0612	KC0OUQ@att.net
Club Librarian	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
VE Team	AC0T K0MEL	Wally Gamble Mel Minnick	303-202-0339 303-761-3456	wallygamble@comcast.net k0mel@msn.com
Swapfest Mgr	KB0A	Bryan Steinberg	303-987-9596	drcfest@comcast.net
Field Day	N6LD	Charles Wright	303-347-0188	cwright@haxsystems.com
Tech. Committee Chair	W6OAV	Bill Rinker	303-741-2537	W6OAV@arrl.net
APRS Chair	KB0MQQ	Lloyd Plush	303-277-0785	LloydPlush@aol.com
Benevolent		Carolyn Wolf	303-279-1328	
RT Editor	AG0S	George McCray	303-751-7246	AG0S@arrl.net
Education	AJ0C	Robert Rude	303-841-6443	AJ0C@comcast.net

DRC Repeaters

BAND	Freq / Shift / PL Tone	Additional Information
10m	29.620mHz (-100kHz) FM	
6m	53.090mHz (-1mHz)	
Packet	145.05mHz<>14.105mHz	
2m	145.490mHz (-) 100Hz PL	Linked to the 70cm - 448.625mHz machine.
2m	147.330mHz (-) 100Hz PL	Members Auto-Patch
1.25m	224.380mHz (-) 100Hz PL	
70cm	448.625mHz (-) 100Hz PL	Linked to the 2m - 145.490mHz machine.
70cm	449.350mHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.

Editor's Note

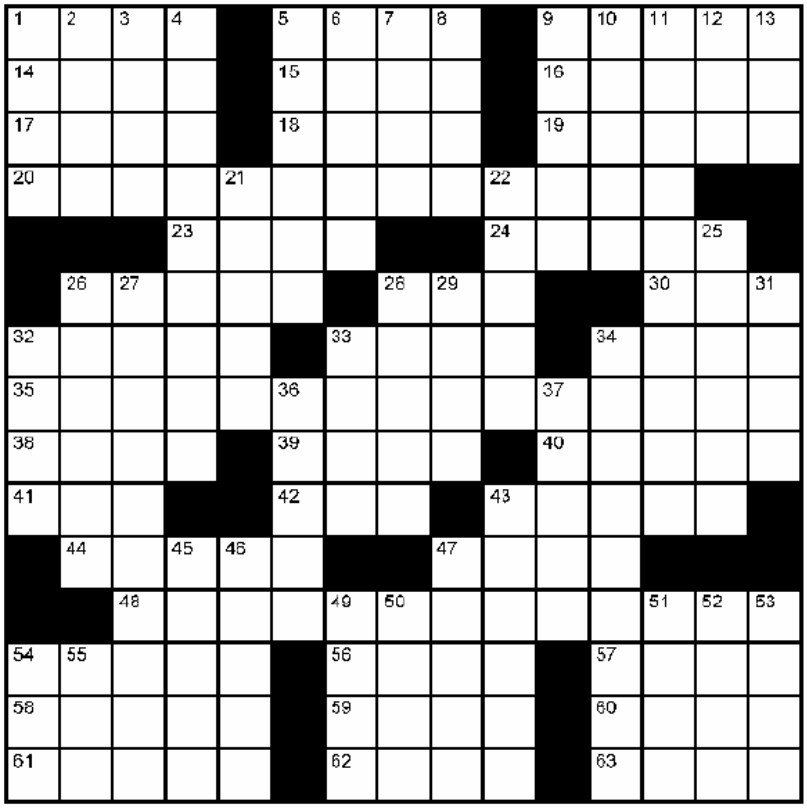
DRC members - this is your newsletter. If there is something which is club or amateur radio related that you'd like to see as a regular feature, email suggestions to the editor. Members are the heart and sole of The Denver Radio Club, if you have an expertise or an interest in a particular segment of ham radio that you'd like to write about, you may email your submissions to DRC_RT@comcast.net. Submission deadline is the 25th of the November. **Editor**

Propagation

Chris Codella W2PA contributed this very nice symmetric puzzle with Propagation as its theme. With the solar disc having been unblemished for basically an entire rotation, this may be as close as we get to a sunspot for a while! Chris mixes in a wide variety of words so this is a nice change of pace for our faithful puzzlologists.

By Chris Codella, W2PA

NOTE: Puzzle solution is located on page 5.



Across

1. "WRTC grand ___" - working all 1x1 calls
5. Parts supplier McMaster-___
9. Sword handles
14. Digital music std.
15. Silent Key article, briefly
16. Fill with joy
17. Antenna restrictions might be on this
18. A craving for that last multiplier, say
19. Northern city with F call prefix
20. DXers' mood swings?
23. Decades over S9
24. Sharpens
26. Early term for static crash (1920's)
28. Nothing more, on CW
30. Ocean
32. "Air" for an early ham
33. ___ gum - a thickening agent
34. Hams xmit and rcv with them
35. The way, for signals
38. A non-radio bug
39. A hamfest of the Internet
40. Type of eel
41. Code inventor, for short
42. A comfortable ham shack might be here
43. Law school course
44. VK animal
47. Baseball glove
48. A six or ten meter DXer's hope
54. Do this on your meter to measure line voltage
56. Board here, for going /MM
57. Capacitor dielectric material
58. CW predecessor
59. Medical breakthrough
60. Vy much
61. DC power sources, briefly
62. Cluster item
63. Maine prefix, possibly

Down

1. Tiny parts (abbr.)
2. In ___ of (instead of)
3. Gulf of ___, off the 7O coast
4. Where not to change horses
5. VK was once a British one
6. Borders on
7. A microprocessor type, briefly
8. Non-military RATT
9. "____ radio" (testing, sometimes)
10. SETI call answerer
11. Calling CQ TEST one minute before the contest begins
12. Kind of logic ckt
13. You can do it with ATV
21. Lively
22. Boorish sort
25. Told someone to wait, on CW
26. Winning several contests in a row
27. It might increase your amplifier's blower speed
28. Holy book, in HZ-land
29. R-rated, maybe
31. Grayish
32. Oval insulators
33. Jeer
34. A contester, in a broader sense
36. Fragrant wood
37. Ham it up, in a way
43. FCC license, slangily
45. Like an untouched Heathkit
46. Freezes a digital VFO
47. Prefix with chip or wave
49. They feed DSP ckts, usually
50. Arrange, as hair
51. Prefix with watt
52. Clickable image
53. Gourmet cracker spread
54. Particularly slim type of AM
55. 3-land ARRL section