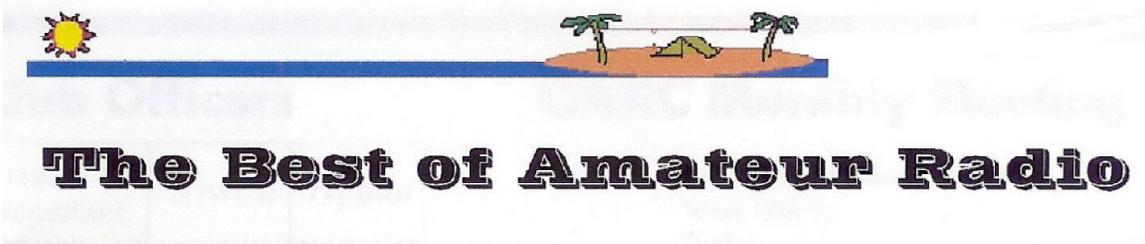




# WATTS NEWS



*Welcome to the OARC e-Magazine*

[www.OgdenArc.org](http://www.OgdenArc.org)

**MARCH 2009**

Next Club Meeting

**3rd Saturday March 21, 2009**

**Topic:** Emergency Antennas by Ray White K7RFW



Kent Gardner WA7AHY  
President



Justin Doxford KE7ROQ  
Vice President



Maggi Campbell N7HCP  
Secretary



Jeff Anderson KD7PAW  
Treasurer



Mike Webster N9NZ  
Director #1



Beth Harrington KE7ELF  
Director #2



Val Campbell K7HCP  
Webmaster/NL Editor

# PREVIOUS CLUB MEETINGS

3rd Saturday February 21, 2009

This month's meeting topic was "RF Safety" presented by Mike Fullmer. He posed the following question to all Hams: "How safe is your 'operating' environment? RF Safety Matters!" There are a lot of wireless communications devices all around us every where we turn and they are emitting RF energy at us.

Consider the following:

Cell Phones, WiFi, Blue Tooth; Portable Telephones, FRS, GMRS emit up to 100 milliwatts of energy. GMRS & CB Radios up to 5 watts. Ham Radios usually operate in the 100 watts range however some stations can operate up to 1500 watts. Your microwave oven puts out about 1100 watts. Radio Stations, TV Stations operate in the 10's and 100's of thousands of watts. Wow!, that's enough to fry you to death.

Mike explained that when you determine the RF safety factor in your particular operating environment power is not the only factor. You must also take into account the time period over which you are exposed to the RF energy. The operating frequency/wavelength also matters. Most Amateur Radio stations can consider themselves safe when operating 80 meters and 40 meters up to 500 watts. On 20 meters you are safe up to 250 watts. On 15 meters, try and stay under 100 watts, but in 10 meters watch out if you exceed 50 watts output. When operating in the VHF 2 meter band consider yourself safe up to 50 watts and up to 70 watts on the 70 cm band. Mobile and portable stations are mostly exempt from consideration.

For further information consult the ARRL web site <http://arrl.org> and locate the 'Licensing Safety' posting.

Val Campbell - K7HCP



---

## The Utah VHF Society Swapmeet

Was held on Saturday February 28 2009 @ 08:00 am at the Utah Fair Park in SLC. If you were not able to attend this year put it on your calendar for next year. It is always held on the 4th Saturday in February.

See you next year.

## NEXT CLUB MEETING

**When:** 3rd Saturday March 21 , 2009  
**Time:** 9:00 AM  
**Location:** Riverdale Fire Station

**Topic:** Emergency Antennas by Ray White K7RFW

**Talk-in:** -146.90 (pl=123)

---

### What is a Hamfest?

A ham swapmeet is a flea market for hams and electronic hobbyist, *but more*.

A hamfest is a swapmeet *but much more*.

It is somewhat like a very small county fair with special interest booths and displays, training classes, ham radio licensing test exams, fun interactive contests, and of course, lunch (optional).

A hamvention is a hamfest combined into a ham convention whereas the national amateur radio association, ARRL, sanctions the event and hosts a guest of honor speaker, usually for a dinner event.

This years event is sponsored by Weber County Sheriff's Dept Communications Team which is the local ARES (Amateur Radio Emergency Services) group which is a branch of the national ARES Association.

This year's hamfest/convention promises to be full of special activities relating to Amateur Radio, Emergency Response and Emergency Services.

Hope to see you at the Northern Utah Ecomm Hamfest 2009 in April. Refer to details elsewhere in this month's newsletter.

## CLUB BLOG

You never know the significance of any single event or what it may mean to you or others at some time in the future. Here's my story!

One lonely Sunday afternoon on May 16, 2005 I found myself checking out the HF band conditions in this trying time of solar in-activity and trying to decide if it was worth turning on the transmitter to engage in a ham radio QSO (a contact - amateur radio communication). I personally seldom engage in SSB-Fone QSO's on HF, however many do enjoy it. I believe you must have the gift-of-gab to do it right and I don't really include myself in that category. Realizing that a CW (morse code) QSO would take a lot of effort that I really didn't want to commit to at that time of leisure I decided to try a form of Digital Communications called PSK-31. This involves using your computer display and keyboard interfaced to your transceiver to communicate with other hams around the state, country and world. (It's much like a radio/wireless Instant Messaging effort without an ISP).

I choose 20 meters at 14.070 MHz and typed out a CQ CQ (general call) and almost immediately at 20:47 Zulu I received a response from a station that identified him self as **W5PGK**. I was thinking COOL, a call from Texas or somewhere in the South. Stations in the "5th" call zone usually are from that area of the country. He said his name was Carl and his QTH (location) was South Ogden Utah. It turns out that he had recently retired and moved to the Ogden area from somewhere in the south. I wondered if he might be a member of OARC that I didn't remember so I queried the OARC club data base for his call ... but "no hit". We enjoyed our QSO and then said our 73's (best regards) until there be another chance happening some time in the future.

Three years later (2008) ... I was consolidating my various ham radio HF communication logs into a common log when I noticed the only entry in my 2005 log was a QSO with **W5PGK**. Yes, sad but true, I had only one QSO in 2005. As you can see, I'm really not a candidate for "post-child" for Amateur Radio activity, at least not that year. With only one QSO in the log for 2005, it stuck out, and then I wondered... "Why does that call sign sound familiar?", so I looked it up on **QRZ.COM**.

**W7ACB** (vanity call sign - original call sign **W5PGK**)

**CARLTON F BARBER Jr**  
**4741 Banbury Lane**  
**Ogden UT 84403**

Imagine my surprise ... "Carl", **W7ACB**, previously **W5PGK**, was the same "Carl" who had recently donated his "entire ham radio station" to OARC. Carl had become a SK (silent key - passed away) recently and on his death bed requested of his wife that she contact OARC after he passes, to donate all his radio equipment to the Ogden Amateur Radio Club. He had been monitoring OARC thru the clubs internet website but had never actually joined the club nor had he attended any of the club meetings or activities.

This is an eMail response to me from Kent **WA7AHY** regarding the 'Barber' incident":

"That is quite a coincidence that you worked Barber before he passed away and before we knew how special a Ham he really was. I would suggest that you use this in the next newsletter. It seems that maintaining a radio log is worthwhile for more reasons than one."

So as I said in the beginning, you never really know the significance of any single event or what it may mean to you or others at sometime in the future. And by the way, you would be proud of me now because I have logged many more contacts in my log since 2005. In fact I logged 10 new CW QSO's just last night.

Hope to hear you on the HF ham bands soon.  
73, Val Campbell K7HCP

**OARC recently made a donation to the Salvation Army in memory of Carl F Barber Jr W7ACB**

# MORE CLUB BUSINESS

## OARC Technician License Classes

- **Dates:** Thursday evenings, starting March 5th 2009
  - **Time:** 07:00 pm
  - **Location:** LDS church building, Clinton Utah
  - **Details:** see club website for last minute details
- 

## OARC Technician Licensing Class

### Ham radio training

When a disaster hits and the use of traditional communication methods (cell phones/land lines/family service radios) become limited or unusable, amateur radio operators (otherwise known as Ham radio operators) can communicate with others using Ham radios. To use a Ham radio, one needs to pass a test and obtain an amateur radio license.

### OARC Technician Class course and VE test session

The Ogden Amateur Radio Club is sponsoring a class to help individuals learn the information needed to obtain an amateur radio license.

The classes will be held on Thursday evenings 7:00 PM to 8:30 PM on March 5th, 12th, 19th and 26th and April 2nd and 9th, 2009. The classes will be held at the LDS church (Clinton 14th / Sunset 3rd) Ward building located at 338 W 1800 N in Clinton, Utah 84015.

The class will be completed before the Northern Utah Hamfest (see below) so that students can attend the test session within two weeks of finishing the course. The test session will be held 4th Saturday April 25th 2009 between the hours of 1:00 PM to 3:00 PM during the other hamfest activities.

OARC will also have its regular test sessions at the Weber Center on the first Wednesday in February, June and October.

### ARRL/EMCOMM Utah Convention/Hamfest and VE test session

The HAM radio test/exam can be taken on 4th Saturday April 25th 2009 at the ARRL/EMCOMM Utah Convention/Hamfest located at the Browning Armory, 625 E 5300 S So Ogden Utah. Hamfest starts at 09:00 AM and the test session will be conducted between the hours of 1:00 PM - 3:00 PM.

To register for this class, or to obtain more information, please contact:

- Justin KE7ROQ at 801-719-0479, email [justind@ADV-TECH.com](mailto:justind@ADV-TECH.com)
- Kent WA7AHY at 801-475-6282, email [L7MFCC@juno.com](mailto:L7MFCC@juno.com)

Additional information is available at the Ogden Amateur Radio Club web site <http://www.ogdenarc.org>.

## General / Extra License Upgrade Class

Salt Lake City area... plus Top of Utah all welcome...

### GENERAL CLASS:

Starting Tuesday March 17 at 1900 hrs (7:00 PM).

Plan on about two hours each Tuesday.

Covering General license material for the first 4 - 5 sessions.

### EXTRA CLASS:

The Extra class material starting about April 14 for 8 - 10 sessions.

I will try to coordinate the classes to the available testing sessions.

### TEXT:

For text: I will be using the ARRL General and Extra License Manuals.

Fred DeSmet, the bookseller for the UARC SLC club, has them available for \$25 each, and I will bring some copies to the classes.

If you already have your General license, and don't want to review that material, you could start attending about April 14. However, you're welcome to come to all classes if you want to.

### LOCATION:

The location is at a church building at 5065 W Janette Ave (3985 S) in West Valley City.

Starting at the intersection of 4100 S and 4800 W, go west and take the first right turn (Boothill Dr), then take the first left turn (Janette Ave). This is a dead-end street and the church is at the end, on your left (south). The room is at the south of the building, at the back of the parking lot.

**GPS:** coordinates are:

40°41'05" N, 112°00'43" W

### CONTACT: (RSVP Please)

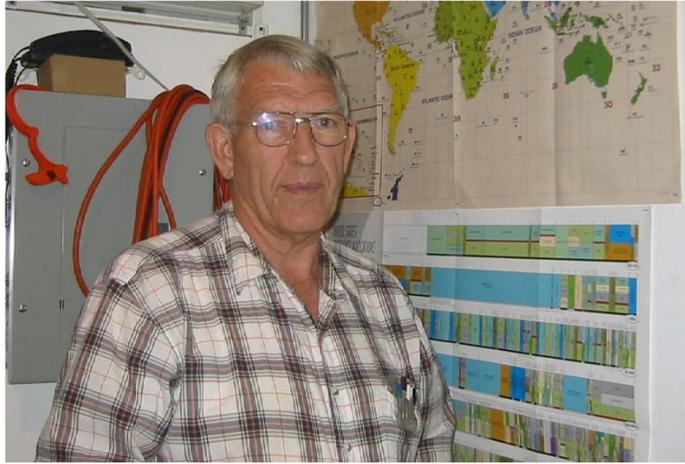
Home 801-968-4614 & 801-968-0311 Cell 801-696-4078.

E-mail addresses: K7RLS@comcast.net K7RLS@yahoo.com

Please call or e-mail so that I can get an estimate of the number of books needed. I hope to see you there.

73, Ron Speirs K7RLS

## FROM THE PRESIDENTS SHACK



**Kent Gardner WA7AHY**

From the President's Shack  
March 2009

I recently received an email from the webmaster of a website catering to the historical aspects of the now discontinued Novice Class radio amateur license. Several years ago Cliff, Ki6CM, made it known via QST and the internet that he wanted stories of how the Novice experience had influenced our lives and helped many to get started in ham radio. I responded with the story of how I logged my first two contacts on the radio just days after receiving my Novice ticket in the mail. To read on how I did this you will have to go to the Novice website at [www.NOVICE.bappy.com](http://www.NOVICE.bappy.com).

I guess I am tooting my own horn here, but there is a method in my storytelling. You notice that I didn't say madness...I maintain that being a Novice was one of the most rewarding experiences of my life even though I only made two CW contacts and that I am a sane person still thrilled at the thought of the mysterious ether giving up wonderful information such as QTHs and 339s.

My thoughts lately have been on how newly licensed Technician Class operators view their new attainment. I hope it will be full of excitement and expectation too. This is the challenge we all need to take up. It was the help of a friend down the hall at my dorm at USU that enabled me to get my first contact on the radio even though he was using a VFO as a transmitter in the next room. How will a new licensee feel when he first tries a local repeater? Will there be anyone to be his or her first contact? I hope so.

I heard of a success story this week on how some prospective students to our club's Tech licensing class attended a regular club meeting. An experienced "Elmer" took them in tow and gave them a tour of his ham shack after the meeting ended. This simple action now will allow the students to better understand the concepts and activities experienced during their classes. Let's all be ready and willing to help new hams along the road so their initial experiences will also be life changing and exciting.

I hope to see you all at the next club meeting on Saturday 21 Mar 09 at 9:00 AM at the Riverdale Fire Station. There will be several presentations made about portable antennas featuring Ray White, K7RFW.

TNX Kent Gardner, WA7AHY

PS If you go to the Novice website, the ascending date column to the left of the screen has been scrambled by the internet provider's free website. To find my article, go to the bottom and work your way back up until you find my name and 1961 about 46-50 items up.



**Greetings Radio Amateurs: February 17, 2009**

On Friday, 13 Feb 2009, Mel Parkes, NM7P, Bob Craven, N7GTE and Jed Petrovich, AD7KG, attended the meeting of the House Law Enforcement and Criminal Justice Committee. Two bills, House 281 and 290 were on the agenda and discussed. Both of these bills dealt mostly with text messaging. However, since these bills contained language regarding "wireless communication devices", we deemed it appropriate to attend the meeting and prepare to testify.

Before going any further, we wish to thank all radio amateurs for contacting legislators regarding these bills. It was evident that our voices had been heard. These bills were discussed in the meeting. However, neither bill moved out of committee. The official status is that they are being "held". From speaking with one of the bill sponsors after the meeting, it seems these bills will go no further. Also, from what we gleaned from our other post-meeting conversations, the other two House bills will also go nowhere.

We were able to speak with two attorneys after the meeting. According to them, Utah law specifies that unless these bills specifically included "two-way radios" or something similar in their definitions, use of amateur radios would not have been included. HB95 did include two-way radios, but it likely will never make it past the committee. Senate bill 149, which has made it out of the Senate committee, also does not contain any language about two-way radios. It may still be worth watching it's progress.

Again, we thank you for your participation in the legislative process.

**73, Mel Parkes, NM7P Utah Section Manager**

PS: I would like to thank Bob Craven, N7GTE and Jed Petrovich, AD7KG for their work and preparation to discuss this issue before the House Committee. Please forward this email as many of the Utah Hams as you can and print the text in your club newsletters and web sites. Reminder: Utah VHF Society Swap Meet will be on Saturday, 28 Feb at 0800 at the Utah State Fair Park in SLC.

# OTHER BUSINESS

## EmComm Northern Utah Hamfest **NEW!**

- Date: 4th Saturday, April 25 2009
- Time: 09:00 am
- Location: Browning Armory, South Ogden
- Additional information at <http://ecommutah.com>

# EComm HamFest 2009

SPONSORED BY  
WEBER COUNTY SHERIFF'S COMMUNICATION TEAM  
&  
WEBER COUNTY ARES

---

### KEEP THIS DATE OPEN!!!

Date: April 25, 2009  
Time: 09:00 hrs to 16:00 hrs  
Location: Browning Armory 625 E 5300 S So. Ogden Utah

---

Applied for ARRL Sanctioning to be 2009 ARRL State Convention. There will be a Dinner Speaker from ARRL. More details to come on location and cost. Must pre-sign up for ARRL Dinner

REGULAR ADMISSION \$5.00  
Includes ticket for Raffle

SWAP MEET TABLES AVAILABLE  
(SWAP MEET FROM 0900 TO 1800 HRS)  
\$3.00 FOR HALF TABLE  
\$6.00 FULL TABLE

---

Some of our Class Offerings (completed agenda TBA):  
ERS and State Plans (Bob Craven)  
NIMS 100/200 Class with Certificate (Lance Peterson)  
DStar (Steve Carver)  
National Weather Spotter Refresher  
License Test Session (Mary Hazard and Larry Griffin)  
Communication Exercise (limited class size)  
"HF Everything" (Ray White)  
Hands on ATV / Packet / and much much more  
Emergency Response and Public Safety Displays and Vendors:



---

*Pre-registration information:*

Jeff Kinney: 801-782-7781 or [nokinney@comcast.net](mailto:nokinney@comcast.net)  
Ray White: 801-546-2549 or [crwhite@airmail.net](mailto:crwhite@airmail.net)  
Sal Salizar: 801-791-4023 or [sal84404@netzero.net](mailto:sal84404@netzero.net)

***Save the Date!! Don't miss Utah's premier annual  
Emergency Communications Hamfest for the latest in emergency  
training, networking and swap meeting***

## NEWS ARTICLES



No Interesting News this month - Hi Hi

---



No Interesting News this month - Hi Hi

---



No Interesting News this month - Hi Hi

---

# TECHNICAL TIDBIT

## ARRL Band Plans

**NOTE: Tech & Novice Class privileges marked in red**

HF bands = 160 meter band to 10 meter band

VHF bands = 6 meter band – 1.25 meter band

UHF bands – 70 cm band up

### 160 Meters (1.8-2.0 MHz):

1.800 - 2.000	CW
1.800 - 1.810	Digital Modes
1.810	CW QRP
1.843-2.000	SSB, SSTV and other wideband modes
1.910	SSB QRP
1.995 - 2.000	Experimental
1.999 - 2.000	Beacons

### 80 Meters (3.5-4.0 MHz):

**3525-3600 kHz (CW only)**

3.590	RTTY/Data DX
3.570-3.600	RTTY/Data
3.790-3.800	DX window
3.845	SSTV
3.885	AM calling frequency

### 40 Meters (7.0-7.3 MHz):

**7025-7125 kHz (CW only)**

7.040	RTTY/Data DX
7.080-7.125	RTTY/Data
7.171	SSTV
7.290	AM calling frequency

### 30 Meters (10.1-10.15 MHz):

10.130-10.140	RTTY
10.140-10.150	Packet

### 20 Meters (14.0-14.35 MHz):

14.070-14.095	RTTY
14.095-14.0995	Packet
14.100	NCDXF Beacons
14.1005-14.112	Packet
14.230	SSTV
14.286	AM calling frequency

### 17 Meters (18.068-18.168 MHz):

18.100-18.105	RTTY
---------------	------

18.105-18.110	Packet
---------------	--------

**15 Meters (21.0-21.45 MHz): 21,025-21,200 kHz (CW only)**

21.070-21.110	RTTY/Data
21.340	SSTV

**12 Meters (24.89-24.99 MHz):**

24.920-24.925	RTTY
24.925-24.930	Packet

**10 Meters (28-29.7 MHz): 28,000-28,300 kHz (CW, RTTY and Data – PSK31, etc) + 28,300-28,500 kHz (CW, SSB-Fone)**

28.000-28.070	CW
28.070-28.150	RTTY
28.150-28.190	CW
28.200-28.300	Beacons
28.300-29.300	Phone
28.680	SSTV
29.000-29.200	AM
29.300-29.510	Satellite Downlinks
29.520-29.590	Repeater Inputs
29.600	FM Simplex
29.610-29.700	Repeater Outputs

**6 Meters (50-54 MHz): Tech Class = all privileges**

50.0-50.1	CW, beacons
50.060-50.080	beacon subband
50.1-50.3	SSB, CW
50.10-50.125	DX window
50.125	SSB calling
50.3-50.6	All modes
50.6-50.8	Nonvoice communications
50.62	Digital (packet) calling
50.8-51.0	Radio remote control (20-kHz channels)
51.0-51.1	Pacific DX window
51.12-51.48	Repeater inputs (19 channels)
51.12-51.18	Digital repeater inputs
51.62-51.98	Repeater outputs (19 channels)
51.62-51.68	Digital repeater outputs
52.0-52.48	Repeater inputs (except as noted; 23 channels)
52.02, 52.04	FM simplex
52.2	TEST PAIR (input)
52.5-52.98	Repeater output (except as noted; 23 channels)
52.525	Primary FM simplex

52.54	Secondary FM simplex
52.7	TEST PAIR (output)
53.0-53.48	Repeater inputs (except as noted; 19 channels)
53.0	Remote base FM simplex
53.02	Simplex
53.1, 53.2, 53.3, 53.4	Radio remote control
53.5-53.98	Repeater outputs (except as noted; 19 channels)
53.5, 53.6, 53.7, 53.8	Radio remote control
53.52, 53.9	Simplex

**2 Meters (144-148 MHz):**

**Tech Class = all privileges**

144.00-144.05	EME (CW)
144.05-144.10	General CW and weak signals
144.10-144.20	EME and weak-signal SSB
144.200	National calling frequency
144.200-144.275	General SSB operation
144.275-144.300	Propagation beacons
144.30-144.50	New OSCAR subband
144.50-144.60	Linear translator inputs
144.60-144.90	FM repeater inputs
144.90-145.10	Weak signal and FM simplex (145.01,03,05,07,09 are widely used for packet)
145.10-145.20	Linear translator outputs
145.20-145.50	FM repeater outputs
145.50-145.80	Miscellaneous and experimental modes
145.80-146.00	OSCAR subband
146.01-146.37	Repeater inputs
146.40-146.58	Simplex
146.52	National Simplex Calling Frequency
146.61-146.97	Repeater outputs
147.00-147.39	Repeater outputs
147.42-147.57	Simplex
147.60-147.99	Repeater inputs

**Notes:** The frequency 146.40 MHz is used in some areas as a repeater input. This band plan has been proposed by the ARRL VHF-UHF Advisory Committee.

**1.25 Meters (222-225 MHz):**

**Tech Class = all privileges**

222.0-222.150	Weak-signal modes
222.0-222.025	EME
222.05-222.06	Propagation beacons
222.1	SSB & CW calling frequency
222.10-222.15	Weak-signal CW & SSB
222.15-222.25	Local coordinator's option; weak signal, ACSB, repeater inputs, control

222.25-223.38	FM repeater inputs only
223.40-223.52	FM simplex
223.52-223.64	Digital, packet
223.64-223.70	Links, control
223.71-223.85	Local coordinator's option; FM simplex, packet, repeater outputs
223.85-224.98	Repeater outputs only

**Note:** The 222 MHz band plan was adopted by the ARRL Board of Directors in July 1991.

**70 Centimeters (420-450 MHz):** **Tech Class = all privileges**

420.00-426.00	ATV repeater or simplex with 421.25 MHz video carrier control links and experimental
426.00-432.00	ATV simplex with 427.250-MHz video carrier frequency
432.00-432.07	EME (Earth-Moon-Earth)
432.07-432.10	Weak-signal CW
432.10	70-cm calling frequency
432.10-432.30	Mixed-mode and weak-signal work
432.30-432.40	Propagation beacons
432.40-433.00	Mixed-mode and weak-signal work
433.00-435.00	Auxiliary/repeater links
435.00-438.00	Satellite only (internationally)
438.00-444.00	ATV repeater input with 439.250-MHz video carrier frequency and repeater links
442.00-445.00	Repeater inputs and outputs (local option)
445.00-447.00	Shared by auxiliary and control links, repeaters and simplex (local option)
446.00	National simplex frequency
447.00-450.00	Repeater inputs and outputs (local option)

**33 Centimeters (902-928 MHz):** **Tech Class = all privileges**

902.0-903.0	Narrow-bandwidth, weak-signal communications
902.0-902.8	SSTV, FAX, ACSSB, experimental
902.1	Weak-signal calling frequency
902.8-903.0	Reserved for EME, CW expansion
903.1	Alternate calling frequency
903.0-906.0	Digital communications
906-909	FM repeater inputs
909-915	ATV
915-918	Digital communications
918-921	FM repeater outputs
921-927	ATV
927-928	FM simplex and links

**Note:** The 902 MHz band plan was adopted by the ARRL Board of Directors in July 1989

**23 Centimeters (1240-1300 MHz):** **Tech Class = all privileges**

1240-1246	ATV #1
1246-1248	Narrow-bandwidth FM point-to-point links and digital, duplex with 1258-1260.

1248-1258	Digital Communications
1252-1258	ATV #2
1258-1260	Narrow-bandwidth FM point-to-point links digital, duplexed with 1246-1252
1260-1270	Satellite uplinks, reference WARC '79
1260-1270	Wide-bandwidth experimental, simplex ATV
1270-1276	Repeater inputs, FM and linear, paired with 1282-1288, 239 pairs every 25 kHz, e.g. 1270.025, .050, etc.
1271-1283	Non-coordinated test pair
1276-1282	ATV #3
1282-1288	Repeater outputs, paired with 1270-1276
1288-1294	Wide-bandwidth experimental, simplex ATV
1294-1295	Narrow-bandwidth FM simplex services, 25-kHz channels
1294.5	National FM simplex calling frequency
1295-1297	Narrow bandwidth weak-signal communications (no FM)
1295.0-1295.8	SSTV, FAX, ACSSB, experimental
1295.8-1296.0	Reserved for EME, CW expansion
1296.00-1296.05	EME-exclusive
1296.07-1296.08	CW beacons
1296.1	CW, SSB calling frequency
1296.4-1296.6	Crossband linear translator input
1296.6-1296.8	Crossband linear translator output
1296.8-1297.0	Experimental beacons (exclusive)
1297-1300	Digital Communications

**2300-2310 and 2390-2450 MHz: Tech Class = all privileges**

2300.0-2303.0	High-rate data
2303.0-2303.5	Packet
2303.5-2303.8	TTY packet
2303.9-2303.9	Packet, TTY, CW, EME
2303.9-2304.1	CW, EME
2304.1	Calling frequency
2304.1-2304.2	CW, EME, SSB
2304.2-2304.3	SSB, SSTV, FAX, Packet AM, Amtor
2304.30-2304.32	Propagation beacon network
2304.32-2304.40	General propagation beacons
2304.4-2304.5	SSB, SSTV, ACSSB, FAX, Packet AM, Amtor experimental
2304.5-2304.7	Crossband linear translator input
2304.7-2304.9	Crossband linear translator output
2304.9-2305.0	Experimental beacons
2305.0-2305.2	FM simplex (25 kHz spacing)
2305.20	FM simplex calling frequency
2305.2-2306.0	FM simplex (25 kHz spacing)

2306.0-2309.0	FM Repeaters (25 kHz) input
2309.0-2310.0	Control and auxiliary links
2390.0-2396.0	Fast-scan TV
2396.0-2399.0	High-rate data
2399.0-2399.5	Packet
2399.5-2400.0	Control and auxiliary links
2400.0-2403.0	Satellite
2403.0-2408.0	Satellite high-rate data
2408.0-2410.0	Satellite
2410.0-2413.0	FM repeaters (25 kHz) output
2413.0-2418.0	High-rate data
2418.0-2430.0	Fast-scan TV
2430.0-2433.0	Satellite
2433.0-2438.0	Satellite high-rate data
2438.0-2450.0	WB FM, FSTV, FMTV, SS experimental

**Note:** The 2300 MHz band plan was adopted by the ARRL Board of Directors in January 1991

**Note:** The following band plans were adopted by the ARRL Board of Directors in July 1988

**3300-3500 MHz: Tech Class = all privileges**

3456.3-3456.4	Propagation beacons
---------------	---------------------

**5650-5925 MHz: Tech Class = all privileges**

5760.3-5760.4	Propagation beacons
---------------	---------------------

**10.00-10.50 GHz: Tech Class = all privileges**

10.368	Narrow band calling frequency 10.3683-10.3684 Propagation beacons
10.3640	Calling frequency

**Above 10.50 GHz:\* Tech Class = all privileges**

\*All modes and licensees (except Novices) are authorized on the following bands:

- 24.0-24.25 GHz
- 47.0-47.2 GHz
- 76-81.0 GHz
- 122.25-123 GHz
- 134-141 GHz
- 241.0-250.0 GHz
- All above 275 GHz

# SPECIAL ARTICLE

## 25 THINGS ABOUT TO BECOME EXTINCT IN AMERICA

Do you believe this?  
Let's prove 'em wrong. Get On The Air!

### **16. Ham Radio**

Amateur radio operators enjoy personal (and often worldwide) wireless communications with each other and are able to support their communities with emergency and disaster communications if necessary, while increasing their personal knowledge of electronics and radio theory. However, proliferation of the Internet and its popularity among youth has caused the decline of amateur radio. In the past five years alone, the number of people holding active ham radio licenses has dropped by 50,000, even though Morse Code is no longer a requirement.

25. U.S. Post Office
24. Yellow Pages
23. Classified Ads
22. Movie Rental Stores
21. Dial-up Internet Access
20. Phone Land Lines
19. Chesapeake Bay Blue Crabs
18. VCRs
17. Ash Trees
- 16. Ham Radio**
15. The Swimming Hole
14. Answering Machines
13. Cameras That Use Film
12. Incandescent Bulbs
11. Stand-Alone Bowling Alleys
10. The Milkman
9. Hand-Written Letters
8. Wild Horses
7. Personal Checks
6. Drive-in Theaters
5. Mumps & Measles
4. Honey Bees
3. News Magazines and TV News
2. Analog TV
1. The Family Farm

# FEATURE ARTICLE

## [Whatever Happened To Heathkit?](#)

[Louis E. Frenzel](#)

ED Online ID #20689

February 18, 2009

Whenever I mention to folks that I used to work at Heathkit, a few people actually ask, "What's Heathkit?" Yes, I suppose that does date me a bit. Others will say, "Oh, yes, my dad used to build Heathkits." Anyway, some of you do remember Heathkit, and fondly in most cases. If not, let me explain.

There once was a time in electronics when you could actually build circuits and equipment yourself. You needed a design that you could create yourself—or if not, get from one of many magazines, including *Electronic Design*. You could buy the resistors, capacitors, transistors, or tubes in the olden days, then put them all together on a metal chassis, a breadboard, or a finished printed-circuit board (PCB). It was quite a project but doable, and many hobbyists like hams built these designs on a regular basis.

In the late 1940s and 1950s, someone invented the kit business. Companies designed a product and sold it as a bundle of parts called a kit. You could buy the kit for a fraction of what a comparable wired unit would cost and then build it yourself. The outcome was quite favorable—a workable electronic product and a great sense of accomplishment you got from the construction.

Heath was one of those companies that help started the kit business. Ed Heath founded the company in 1926 with, of all things, an airplane kit. He died in a test flight in one in 1935, but Howard Anthony kept the company going. Right after World War II, he bought a batch of electronic surplus. Out of that came one of the first successful kits, a small oscilloscope for \$50, which was a real achievement in its time. With that success came many new products.

Heathkit probably succeeded more on its ham radio products than anything else. Most of the early kits were shortwave radios, transmitters, accessories like antenna tuners, and the famous Cantenna, a 1-kW non-inductive power resistor in a paint can with mineral oil for the heatsink. Heathkit went on to create an extensive line of small and large transceivers and big power amps, many of which are still operational today.

### The Successful Years

Later in the 1950s and 1960s, Heathkit expanded into audio equipment, TV sets, and lots of other consumer products. The company even had a low-cost line of test equipment with scopes, multimeters, generators, counters, and other items. While Heathkit had competitors like Allied Knight, Lafayette, Eico, and a few other smaller companies, it essentially beat the pants off everyone else because it had a better product.

But Heathkit's good reputation really came from offering a better assembly manual than anyone else. A poorly executed step-by-step manual is a prescription for disaster for any kit company. If the customer can't build the kit successfully without massive telephone and mail support, it would die a quick death, and many did. Heathkit figured this out early and spent as much development time in the manual as it did engineering the product. Its primary marketing message was "We won't let you fail," and the company lived up to it.

I went to Heathkit in the early 1970s to start its education and publishing product line. The idea was to extend the concept that building a kit was an educational endeavor and that we could expand on that idea with more formal learning materials to supplement the kits. We built a line of self-instructional courses on electronic fundamentals and a wide range of other topics. A line of kit

trainers accompanied the instructional materials. The first products emerged in 1974 and were instantly successful. We followed up with microprocessor learning packages, which were hot for their time. And, we developed the Hero robot kit that came out in 1982.

I was also involved with the development of the Heathkit computers. We created the H8 and the H11, not to mention the H9 terminal, and of all things the H10, a paper tape reader/punch. (What was I thinking?) The H11 kit used Digital Equipment Corporation's (DEC) famous LSI-11 board. We packaged that into kit form with some 8-in. hard drives (remember those?) and the RT-11 operating system with Basic—not bad for \$1200 at that time. The all-in-one H89 and others came later.

### The Beginning of the End

The success of the computer line attracted the attention of Zenith Corp., which went on to buy Heathkit in 1979 from the owner Schlumberger, an oil field service company that also owned Fairchild Semiconductor at the time. Zenith carved out the computer product line and started Zenith Data Systems (ZDS), and that company went on to build a several billion dollar business making Zenith computers and PC compatibles. Groupe Bull of France eventually bought that business, and ultimately it succumbed to the market forces driving the PC-compatible business with all its shakeouts, ups, and downs during the late 1980s and early 1990s.

In the meantime, the kit business suffered. Zenith didn't really want that business, but it came with the deal. It was neglected as ZDS grew, and so began its slow decline into oblivion. But a great deal of that decline had little to do with Zenith. It was also the time of great progress in semiconductor manufacturing. More and more equipment was being made of more and smaller ICs and surface-mount components, both of which were always a challenge for kit builders. It became harder to make a kit people could build at home with basic hand tools.

At the same time, wired products became cheaper thanks to Asian engineering and manufacturing. You could buy a great stereo or color TV set for less than what a kit cost, and you didn't have to spend three weekends building it. Everyone was into instant gratification in the 1980s, so nobody wanted to spend time building kits.

Heathkit discovered it could no longer compete in many markets like ham radio, audio, TV, and test equipment as it took as much time and money to create the manual as it did the product. With double the development costs and the technology making assembly more difficult, Heathkit eventually concluded it could not compete. This perfect storm of conditions led to the formal phasing out of the kit business in 1991 and 1992. There was lots of editorial coverage about that being the end of an era.

### But Wait—Heathkit Really Didn't Go Away

Everyone thought that Heathkit was no more. Wrong! The education and publishing business now called Heathkit Educational Systems (HES) was still doing well. While the courses, materials, and trainers were sold to individuals, HES also developed a huge college and university business. HES was soon sold to a private buyer and continued as a successful operation. It still is today.

While its primary customers are educational institutions, you can still buy individual learning programs and even the trainer kits. HES also retained the rights to all those amazing kit manuals. The company still has many in stock. If you're looking for the documentation on an older Heathkit transceiver, scope, or whatever, you can get a copy of the manual. It's a nice little side business.

And despite the surface-mount components, ever smaller ICs, and challenging construction, you can still buy a kit today. Most of these kits are smaller products, but a few larger ones require some skill to build. An example of some of the smaller kits can be found at Ramsey Electronics

([www.ramseykits.com](http://www.ramseykits.com)), which offers a wide range of kits like power supplies and amplifiers that hobbyists love. Ramsey also has many ham radio kits and some commercial radio kits.

Jameco ([www.jameco.com](http://www.jameco.com)), which you might recognize as a mail order parts house, also has a line of small kits for hobbyists and educational institutions. Some of the ham radio companies offer kits as well, like Elecraft ([www.elecraft.com](http://www.elecraft.com)) and TenTec ([www.tentec.com](http://www.tentec.com)). Other sources include Elenco Electronics ([www.elenco.com](http://www.elenco.com)) and Kelvin Electronics ([www.kelviin.com](http://www.kelviin.com)).

Most kits go light on the newer parts and stay with older but still good ICs with the larger through-hole packages. When newer ICs are used, they're often pre-mounted on a PCB or the assembly using them will be pre-wired to prevent damage from poor construction.

It is still fun and satisfying to build a kit—at least to some people. And if you have the patience, you will actually experience that “Eureka” feeling one gets from building a particularly large and difficult kit. It works! It is a rare, satisfying experience that few enjoy any more. Next time you want to encourage one of your kids or relatives to enter the electronics field, give them a kit.

So despite the fact that almost everyone thought Heathkit died, it still exists and is still doing well. Check out its Web site at [www.heathkit.com](http://www.heathkit.com). The company's new address is 2024 Hawthorne Avenue, St. Joseph, Mich. 49085. Call 269-925-6000 or 800-253-0570. Many of the original Heathkit employees are still with the company, and that “we won't let you fail” attitude still prevails.

#### Acknowledgements

My special thanks to Chas Gilmore (W8IAI) of PPM Inc. as well as Doug Bonham and Randy Kaeding (K8TMK), both of Heathkit, for clarifying some of this information.

---

# ANNOUNCEMENTS

## Next Club Meeting:

**3rd Saturday March 21 2009**

- The Ogden Amateur Radio Club meetings are usually held on the **3<sup>rd</sup> Saturday** of each month.
- **Time: 9:00 AM**
- **Location: Riverdale Fire Station**
- **Topic: Emergency Antennas**  
by Ray White K7RFW
- **Talk-in: -146.90 (pl 123.0)**

Check OARC web site for details

[www.ogdenarc.org](http://www.ogdenarc.org)

- Please invite a friend to join you. You do not have to be a member of the club to participate in our club meetings or activities. We invite all to join us.
- If anyone is interested in doing a presentation on something or just have something unique to show at the meetings.
  - Please get a hold of any of the officers and let us know.

## Next Weber Co VE Test Session:

**1st Wednesday June 03, 2009**

- Exam sessions are held in Ogden every few months, *usually* the first Wednesday in February, June, and October.

**Time: 05:00 PM** *Walk-ins allowed*

**Location:**

**WEBER CENTER**  
**2380 Washington Blvd,**  
**Room # 112**  
**OGDEN, UT 84401**

**Contact: VE Liaison:**

**Mary Hazard** [w7ue@arrl.net](mailto:w7ue@arrl.net) (801-430-0306)

**Cost: \$ 15.00**

Two forms of **ID**, one of which must be a **picture ID**.

For "Upgrades" bring current **license** and a **copy** of current license, and any **CSCE's**

Most **calculators** allowed. Calculator memories must be cleared before use.

---

---

## Club Web Site

Be sure to visit our club web site.

- [www.OgdenARC.org](http://www.OgdenARC.org)

Club membership is open to anyone interested in Amateur Radio. You do not need an amateur license to join us. Dues are used to operate the club, field day activities, and repeater equipment maintenance.

You do not need to join the club to participate with us.

## Club Call Sign

Listen to the club repeaters for this very familiar CW ID. You do know Morse Code don't you?

- **W7SU**

ARRL Field Day is held on the last full weekend of June every year.

Location may vary each year so watch this notice for details as time draws near.

See you there.

OARC REPEATERS			
FREQ	CLUB	TONE	LOCATION
146.820-	OARC	123.0	Mt Ogden
448.600-	OARC	123.0	Mt Ogden
146.900-	OARC "Talk-in"	123.0	Little Mtn (w/auto patch)
448.575-	OARC	100.0	Little Mtn (w/auto patch)

OTHER AREA REPEATERS			
FREQ	CLUB	TONE	LOCATION
146.620-	UARC	none	Farnsworth Pk
147.120+	UARC	100.0	Farnsworth Pk
449.100-	UARC	146.2	Farnsworth Pk
449.500-	UARC	100.0	Farnsworth Pk
ATV	UARC	Ch-58	Farnsworth Pk
147.040+	DCARC	123.0	Antelope Isl
447.200-	DCARC	127.3	Antelope Isl
449.925-	DCARC	100.0	No Salt Lake
145.290-	UBET	123.0	Brigham City
145.430-	UBET	123.0	Thiokol
448.300-	UBET	123.0	Thiokol
146.640-	BARC	none	Logan
146.720-	BARC	103.5	Mt Logan
147.260+	BARC	103.5	Promontory Pt
449.625-	BARC	103.5	Mt Logan
145.250-	WSU	123.0	* coming soon
449.250-	WSU	123.0	* coming soon
145.490-	K7HEN	123.0	Promontory Pt
146.920-	N7TOP	123.0	Promontory Pt
449.775-	N7TOP	123.0	Promontory Pt
448.825-	IRLP/Echo	123.0	Clearfield City
449.950-	IRLP	123.0	Clearfield City
449.425-	IRLP	100.0	Nelson Peak
147.360+	Summit County	100.0	Lewis Peak

**AREA CLUB MEETINGS & WEB SITES**

CLUB	WEB SITE	DATE/TIME	LOCATION
Ogden ARC	<a href="http://ogdenarc.org">ogdenarc.org</a>	3 <sup>rd</sup> Saturday 09:00 am	Check OARC web site ...
WC ARES	<a href="http://ogdenarc.org/join.html#ares">ogdenarc.org/join.html#ares</a>	2 <sup>nd</sup> Thursday 06:30 pm	Weber Co. Library Ogden Utah
WC Sheriff Comm-O		1 <sup>st</sup> Saturday 09:00 am	Weber Co. Sheriff Complex West 12 <sup>th</sup> Street Ogden Utah
Barc	<a href="http://barconline.org">barconline.org</a>	2 <sup>nd</sup> Saturday 10:00 am	Cache Co. Sheriffs Complex 200 North 1400 West Logan Ut
CSERG	<a href="http://dcarc.net/ares.htm/">dcarc.net/ares.htm/</a>	Last Wednesday 8:30pm	Clearfield City Hall Clearfield Utah
Dcarc	<a href="http://dcarc.net">dcarc.net</a>	2 <sup>nd</sup> Saturday 10:00 am	Davis Co. Sheriff Complex Farmington Utah
NU Ares	<a href="http://home.comcast.net/~noutares/">home.comcast.net/~noutares/</a>	3 <sup>rd</sup> Wednesday 7:00 pm	Cache Co. Sheriff Office Logan Utah
Uarc	<a href="http://xmission.com/~uarc/">xmission.com/~uarc/</a>	1 <sup>st</sup> Thursday 7:30 pm	UofU EMC Bldg Room 101 Salt Lake City Utah
Ubet	<a href="http://27meg.com/~k7ub/">27meg.com/~k7ub/</a>	4th Thursday 6:30 pm	BE-Thiokol: 24 East 100 South Brigham City Utah
Utah DX Association	<a href="http://udxa.org">udxa.org</a>	3 <sup>rd</sup> Wednesday check web page for details	check web page for details Salt Lake City area
UvhfS	<a href="http://ussc.com/~uvhfs/">ussc.com/~uvhfs/</a>	Each Tuesday 8:00 pm (refer to web site)	Weekly 2 meter net (no eye ball meetings)
WD Arc	<a href="http://westdesertarc.org/">westdesertarc.org/</a>	1 <sup>st</sup> Tuesday 7:00 pm	Tooele County Courthouse Tooele Utah
WsuArc	<a href="http://arcweber.edu">arcweber.edu</a>	3 <sup>rd</sup> Thursday 5:30 pm	WSU Blding #4 Room ? Ogden Utah

## LOCAL AREA NETS

DATE	CLUB	FREQ
Daily @ 12:30 PM mt	Utah Beehive net HF	7.272 Mhz <b>HF LSB</b>
Daily @ 07:30 PM mt	Utah Code net HF	3.570 Mhz <b>HF CW</b>
Daily @ 02:00 UTC	Utah Farm net HF	3.937 Mhz <b>HF LSB</b>
Sunday @ 8:45 AM	Ogden Old Timers HF net	7.193 Mhz <b>HF LSB</b>
Sunday @ 7:30 PM	UBET ARC	145.430 - 123.0 (training net)
Sunday @ 8:30 PM	SATERN Net	145.900 - 123.0
Sunday @ 9:00 PM	Morgan Co Net	147.060 = simplex
Sunday @ 9:00 PM	UARC Info net	146.620- no PL tone required
Monday @ 9:00 PM	2-meter SSB net	144.250 Mhz <b>2-meter USB</b>
<b>Tuesday @ 8:00 PM</b>	<b>Weber ARES</b>	<b>448.600 - 123.0</b>
Tuesday @ 8:00 PM	VHF Society Swap	147.120 + 100.0
Tuesday @ 9:00 PM	Bridgerland ARC	147.260 + 103.5
Wednesday @ 8:00 PM	UBET ARC	145.290-, 145.430-, 448.300- (all 123.0)
Wednesday @ 8:30 PM	CSERG	145.770 simplex
Wednesday @ 9:00 PM	No. Utah 10m HF net	28.313 Mhz <b>HF USB</b>
Wednesday @ 9:00 PM	6-meter SSB net	50.125 Mhz <b>6-meter USB</b>
Thursday @ 6:30 PM	Davis Co Elmers Net	147.040 + 123.0 <b>New Hams</b>
Thursday @ 8:00 PM	Weber State ARC	146.820 - 123.0 (coming soon)
Thursday @ 8:00PM	State RACES VHF/IRLP	145.490 - 123.0, 146.680 - 123.0 3 <sup>rd</sup> Thursday - even months only
Thursday @ 8:30 PM	Davis ARES	147.420 = simplex
Thursday @ 9:00PM	Wasatch Back Net	147.360 + 100.0
Saturday @ 8:00AM mst	RACES State HF	3.920 Mhz <b>HF LSB</b> 3 <sup>rd</sup> Saturday – odd months only
Saturday @ 11:00AM mst	QCWA net HF	7.272 Mhz <b>HF LSB</b>

---

*OARC OFFICERS*

President: Kent Gardner WA7AHY  
Vice Pres: Justin Doxford KE7ROQ  
Secretary: Maggi Campbell N7HCP  
Treasurer: Jeff Anderson KD7PAW

Director #1: Mike Webster N9NZ  
Director #2: Beth Harrington  
KE7ELF

*"WATTS NEWS" e-Magazine*

NL Editor: Val Campbell K7HCP

*OTHER CLUB FUNCTIONS*

Webmaster: Val Campbell K7HCP  
Board Advisor: Stan Sjol W0KP  
Board Advisor: Mike Fullmer KZ7O  
Repeater Engr: Mike Fullmer KZ7O  
VE Liaison: Mary Hazard W7UE

---

**73 es cul de W7SU**

[www.OgdenArc.org](http://www.OgdenArc.org)