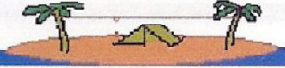




# WATTS NEWS



**The Best of Amateur Radio**

*Welcome to the OARC e-Magazine*

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

**FEBRUARY 2008**

Next Club Meeting

**3rd Saturday February 16, 2008**

**Topic:** HF Digital Communications for beginners  
(psk31, rtty, sstv)



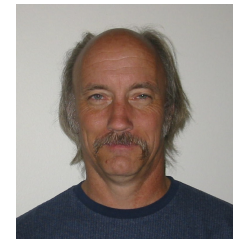
**Kent Gardner WA7AHY**  
President



**Kim Owen KO7U**  
Vice President



**Maggi Campbell N7HCP**  
Secretary



**Jeff Anderson KD7PAW**  
Treasurer



**Mike Webster N9NZ**  
Director #1



**Stan Sjol W0KP**  
Director #2



**Mike Fullmer KZ7O**  
Past Pres/Advisor



**Val Campbell K7HCP**  
Webmaster/Editor

# PREVIOUS CLUB MEETING

3rd Saturday January 19, 2008

## D-Star Communications System

Last month John Hays K7VE presented "D-Star Communications System" at our club meeting. D-Star stands for Digital Smart Technologies for Amateur Radio. It is an approved JARL (Japan Amateur Radio League) standard.

D-Star supports digital voice and digital data communications on the VHF bands, UHF bands and all bands above. D-Star is actually a digital mode of communication that can optionally carry digital voice signals.

This is not an inexpensive mode of operation for amateur radio operators but is definitely a leading edge technology.

For additional details regarding D-Star see our "Feature Article" at the end of this newsletter.

We want to thank John for his presentation and for promoting this very interesting subject. Visit the following D-Star links for additional information.

[DStarUtah.org](http://DStarUtah.org)

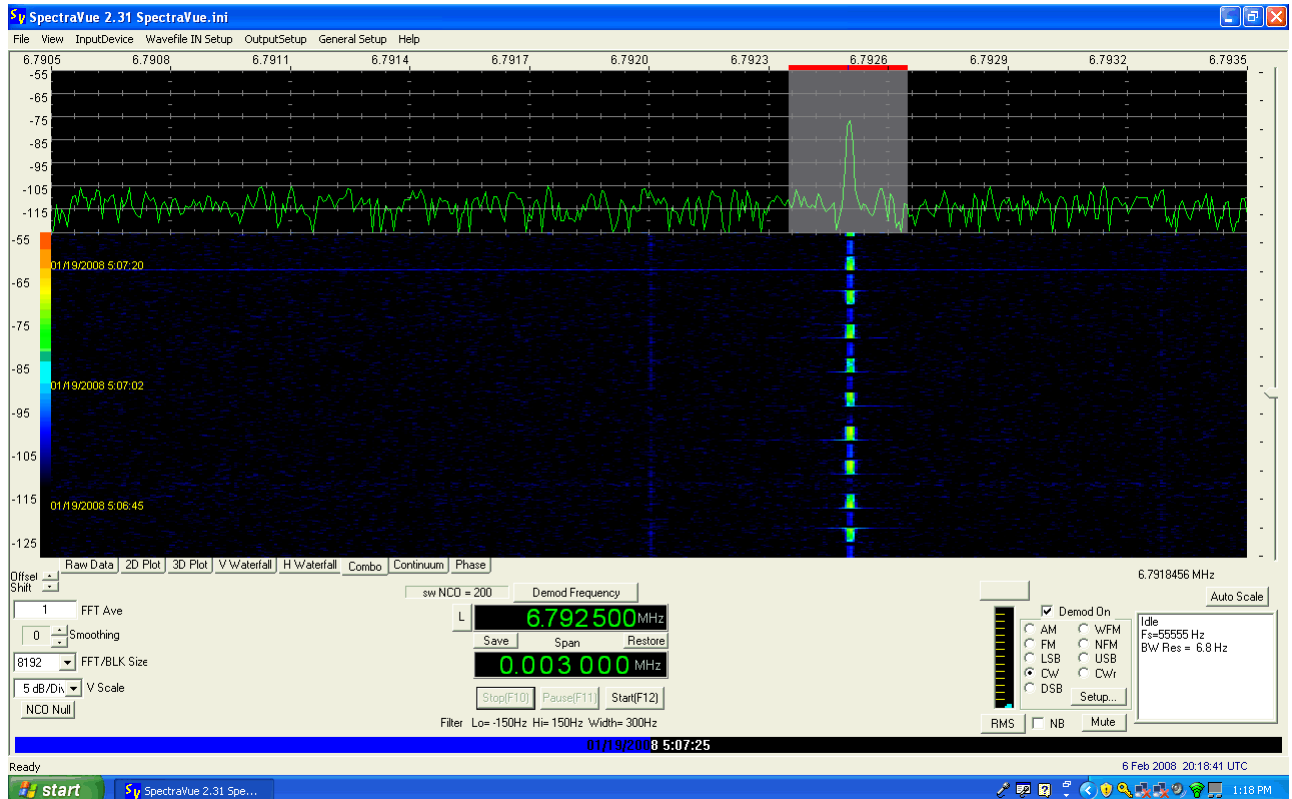
[K7VE.Ampr.org](http://K7VE.Ampr.org)

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## The High Frequency Active Auroral Research Program (HAARP)

Kent Gardner WA7AHY shared with the club, the results of his efforts to participate in the HAARP moon bounce experiment.

Below is a spectra-gram display that clearly shows the original HAARP transmission and the resulting moon bounce echo as received back here on earth. The HF earth station captures the signals at 6792.5 KHz as displayed on the vertical waterfall display below. The original transmitted signal is displayed in green and the moon bounce echoes display as dark blue.



*Screen Capture by Jeff Anderson KD7PAW*

Jeff Anderson KD7PAW and Jim Southwick N7JS also report to have captured recordings of those mysterious echoes from afar, each from his own earth station.

Jeff's capture can be viewed above in the spectra-gram screen display.

Jim has provided a sound clip of the event that he recorded while tuned to 7407.5 KHz. To hear the sounds for yourself, set your browser to the following URL:

<http://www.n7js.com>

Kent has promised to author a "Feature Article" on this subject to be published right here in a future club newsletter.

Many thanks to Kent, Jeff and Jim.

# NEXT CLUB MEETING

**When:** 3rd Saturday February 16, 2008  
**Time:** 9:00 AM  
**Location:** Riverdale Fire Station (see web site for map)  
**Talk-in:** -146.90 (pl=123)

**Topic:** HF Digital Communications for beginners (psk31, rtty, sstv)  
by Val Campbell K7HCP & Jeff Anderson KD7PAW

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## CONGRATULATIONS:

The following attendees successfully tested at the recent Weber Co VE test session

- Glen D. Doxey K7GDD - Upgraded to Extra
- Christopher D. Smith K7CDS - Upgraded to Extra
- Samuel N. Brooks KC7KYY - Upgraded to General
- Harlan M. Brewer Tech. & General
- John E. Sahl - Tech.
- Sheri B Trobrich - Tech.
- Jody E. Cope - Tech.
- Andrew Neal - Tech.
- Danny J. Earl - Tech.
- Justin R Doxford - Tech.
- Jarin R Taft - Tech.
- Tonya G. Wood - Tech.
- Maria E. Bauer - Tech.
- Darin R. Anderson - Tech.
- Cary C. Zarkou - Tech.

**Check the club website, next week at this time, for the posting of their new call signs**

## FROM THE PRESIDENTS SHACK



Kent Gardner WA7AHY

A strange thing happened on the way to D-Star.

I was impressed with John Hays' presentation on D-Star last month. In talking with him later, I found he was going to speak at the Utah Box Elder Thiokol Club ([UBET](#)) that following Thursday in Tremonton. I have a nephew living in Tremonton who has been interested in CB and ham radio over the years so I invited him to go with me. It also gave me a chance, as president of our club, to visit a nearby club to get acquainted.

I have yet to visit the Sheriff's group here in Ogden or the Davis or Salt Lake clubs, so the chance to visit the UBET group was too good to pass up and I would also get to listen to the D-Star presentation again.

My wife, Lauralee, and I set out on that cold and snowy night. We ran into several snow squalls and I had to wonder if John Hays, who had to drive all the way from South Jordan, would want to make the trip in that kind of weather. It turned out that he did, in fact, cancel and agreed to speak at a later date, but this gave me a chance to talk with the Box Elder club a little more and get better acquainted. They had a vote and changed the club's name to the Golden Spike Amateur Radio Club. There were about 20 in attendance.

I had taken my laptop with me to show my nephew my moon echo results and I ended up playing back a segment of the echoes to their club members. The club president, Bob Anderson, AA7TR, knowing that there was no speaker, brought his Buddy Pole antenna that he had gotten as a Christmas present. The remainder of the time was filled with an excellent presentation on how it was put together and how it was tuned. They had an antenna analyzer to provide technical proof of its tune-ability. It was a nice program for such short notice.

I also learned that they have a half hour before the official meeting to just go around the room and discuss anything and everything that the early arrivers wanted to talk about. It was very informal and was even interesting. The club is officially sponsored by ATK (formerly Thiokol) and is well supported monetarily by a special ATK activity fund. The by-laws stipulate that the Club's president and treasurer have to be ATK employees. Instead of having a vice-president or directors they have a Facilitator who ramrods the special activities such as the election dinners, field days, etc. It was turning out to be quite a load for one person so they enacted some rules that allowed the person to assign and receive help from committees. The facilitator did not need to be an ATK employee.

They also are closing in on the final steps to putting in another repeater. I brought up something I learned from our Ogden presentation, that some repeaters do not support D-Star digital because of any audio processing that may occur. They are going to find out if their new repeater will handle D-Star while awaiting the arrival on the last piece of gear.

I am going to propose to the board and bring it up to the general membership that we stage an exchange with the now Golden Spike Amateur Radio Club. We would invite them to one of our meetings and they would invite us to one of theirs. Hopefully, it would be in the same month, but not necessarily. I think they meet on the Thursday after our meeting. I think they alternate meetings between Brigham City and Tremonton. We could carpool to save gas.

I will see you at our next meeting on Saturday 16 Feb 08 at 9:00 AM at the Riverdale Fire Station as usual. We are in for another digital treat. Val and Jeff will give us an interesting and hands on demo of some other digital modes like PSK-31 now that we have gotten our feet all snowy with D-Star.

TNX,  
Kent, WA7AHY

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## CLUB OFFICER BIO



UTAH  
WEBER COUNTY • DN41ah  
**K7HCP**

CONFIRMING QSO WITH	DATE			UTC	MHz	RST	MODE 2-WAY	OSL
	DAY	MONTH	YEAR					
								PSE TNX



**VAL M. CAMPBELL**  
1265 East 3100 North  
North Ogden, UT 84414  
U.S.A.  
Email: k7hcp@arrl.net

THE OSC MAN® W4MPV

### Club Webmaster & Newsletter Editor

I was first licensed in 1958 at age 14 as Novice class (Kn7HCP) and then later that same year upgraded to General class (K7HCP). Sadly, I have not upgraded since.

I was very radio-active for the first 10 years and then became mostly inactive while raising my family and earning a living.

I recently retired from IBM Corporation after 33 years as a hardware field service engineer in the Salt Lake City Utah area and then as a hardware/software development engineer for IBM (Point of Sale) Store Systems in Raleigh North Carolina (Research Triangle Park).

I now enjoy ham radio on the HF bands CW, SSB, RTTY and PSK31. I also enjoy talking with friends on the local VHF/UHF FM repeaters.

I am the webmaster and newsletter editor for the Ogden Amateur Radio Club ([OARC](#)).

**73, K7HCP**  
**Val Campbell**

# CLUB NEWS

## OARC Technician Licensing Class

- OARC's spring 2008 "Technician" licensing class will be taught by Kim Owen KO7U
  - DATE: Thursdays - March 6th thru April 24
  - TIME: 06:30 PM - 09:00 PM
  - LOCATION: Riverdale Fire Station [MAP](#) (same location as club meetings)
  - VE TEST SESSION: A special test session will be held following the final class session

If you have an interest to attend a "Marathon" Technician crash course just prior to the next VE test session please contact us at [webmaster@ogdenarc.org](mailto:webmaster@ogdenarc.org)

If you have an interest for a "General" level licensing class please contact us at [webmaster@ogdenarc.org](mailto:webmaster@ogdenarc.org)

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## What's Happening?

- [Utah VHF Society Annual Meeting & Swapmeet](#) (Fair Park - Salt Lake City Utah)  
February 23 (4th Saturday)
- [7QP - 7th Area QSP Party](#)  
May 3 & 4  
Contact=Darryl Hazelgren, K7UT, (801)580-9636, Utah DX Association  
[UDXA.org](http://UDXA.org)
- [Utah Hamfest 2008](#) (Brice Canyon - Ruby Inn)  
July 11-13 (even numbered years only)
- **No WIMU 2008** (odd numbered year only)  
"Wyoming-Idaho-Montana-Utah" Hamfest (Jackson Hole Wyoming)



## AR HOBBY NEWS

# *2008 Utah VHF Society Swapmeet*

**4th Saturday, February 23, 2008, beginning at 8:00 AM**



At the Utah State Fairpark. This is located along the north side of North Temple at about 10th West. The festivities will be in the Zion building - the same building as last year. The Zion building is located next to Gate in building 34. The main entrance to the Zion building is on the West side. If you have any doubt, just follow the crowd.

There is ample parking to the north of the building after you go through the gate. Parking and access near the building itself is limited, so please leave that parking for *those who need to unload/load their stuff, as well as those who need special access.*

For details point your browser to the following address: <http://utahvhfs.org/fairpark.html>

# NEWS ARTICLES



## RADIO RESEARCH: CELLPHONES VS. SLEEP

According to a new scientific study into the impact of mobile phones impact on human rest, the phones disrupt sleep patterns

The latest research funded by the Mobile Manufacturers Association used 884 MHz GSM phones. It purports to show that participants took longer to reach stage 3 deep sleep and had shorter stage 4 deep sleep after actual exposure to mobile signals. This, compared to when they had no exposure.

These stages of sleep are believed to be important for helping to recover from daily wear and tear on the human body.

## RADIO LAW: CALIFORNIA TO ELIMINATE UNWANTED SPACE ON HAM LICENSE PLATES

Some good news for California hams regarding those call letter license plates with an unwanted space in them. Cliff Cheng, WW6CC, says he has received word from California state Assemblyman Mike Feuer's office that the Department of Motor Vehicles is supposed to reverse its policy of inserting an unwanted space into ham radio call letter plates.

In an e-mail to Newsline Cheng says that its his understanding that those of who ordered and paid for callsign license plates from the D-M-V and instead received plates which have a space in the callsign may exchange them at no charge. He also suggests checking the California Department of Motor Vehicles website to make certain that the change has actually taken place before applying sine no firm date for the change was known. (WW6CC)



## Interference on 902-928MHz

Radio Amateurs of Canada has become aware of increasing levels of interference to Amateur Radio operations on the 902-928MHz (33cm) band from wireless power meters and is calling on Radio Amateurs who use that band to provide any information to help identify the extent and nature of the problem.

In a number of cities, electrical power utilities are installing wireless meters that operate in the 33cm band. Amateur Radio has access to that band on a Secondary basis, meaning we may not cause interference to, nor be protected from interference by licensed Primary users of that spectrum, which are stations in the Fixed and Radiolocation Services.

However, these wireless power meters are operating legally, but as unlicensed devices and are therefore legally subordinate to Amateur Radio. Amateur Radio operations may claim protection from these devices.

RAC intends to raise this issue with Industry Canada, but requires more information on the effect these meters are having on our operations.



## ARRL Enforcement Actions

FEDERAL COMMUNICATIONS COMMISSION  
Enforcement Bureau  
Spectrum Enforcement Division  
1270 Fairfield Road  
Gettysburg, Pennsylvania 17325-7245

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VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 9, 2008  
David O. Castle  
4900 Stringtown Road  
Evansville, IN 47711

SUBJECT: WARNING NOTICE -- UNLICENSED RADIO OPERATION - Case #EB-2007-SE-464

Dear Mr. Castle:

Monitoring information before the Commission indicates that you have been operating portable radio transmitting equipment on Two Meters in order to interfere with a local linked repeater system on 146.835/146.250, and that you have provided a portable unit for others to use in the same manner.

You have no authority to operate Amateur radio transmitting equipment on any frequency. Such operation is a violation of Section 301 of the Communications Act of 1934, as amended, 47 U.S.C. Section 301, and carries criminal penalties including monetary forfeiture (fine) and prison. Monetary forfeitures normally range from \$7,500 to \$10,000.

Sincerely,  
W. Riley Hollingsworth - Special Counsel

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VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 29, 2008  
Joseph Goldberg, MD  
153 Ocean Drive  
Tavernier, FL 33070

SUBJECT: WARNING NOTICE - UNLICENSED RADIO OPERATION - Case #EB-2007-402

Dear Dr. Goldberg:

Pursuant to our recent telephone conversation concerning radio transmissions you made on the 20 Meter Amateur band, this is a Warning Notice that operation of such radio transmitting equipment without a license is a violation of Section 301 of the Communications Act of 1934, as amended, 47 U.S.C. Section 301, and carries criminal penalties including monetary forfeiture (fine) and imprisonment. Monetary forfeitures normally range from \$7,500 to \$10,000.

This is the last warning you will receive regarding such operation.

Sincerely,  
W. Riley Hollingsworth - Special Counsel

# FEATURE ARTICLE

## What is D-STAR?

ICOM 1D-1 (1200MHz Digital Transceiver)



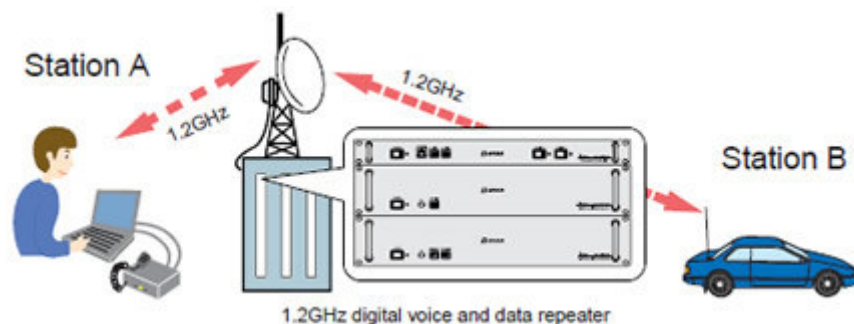
D-STAR is a new ham radio system which offers digital voice and data communication. It connects repeater sites over microwave links and the Internet and forms a wide area ham radio network. The DSTAR system provides a new capability and functionality to the ham radio world and increases the efficiency of emergency communications.

### D-STAR repeater system

The D-STAR repeater is composed of a repeater controller, 1.2GHz digital voice repeater, digital data repeater, 10GHz microwave relay and the Internet gateway PC. For the signal is digital data, no information is lost due to conversion and multiple repeater relays are possible in this system. The D-STAR system repeater can perform 3 relay functions as shown in the following figures.

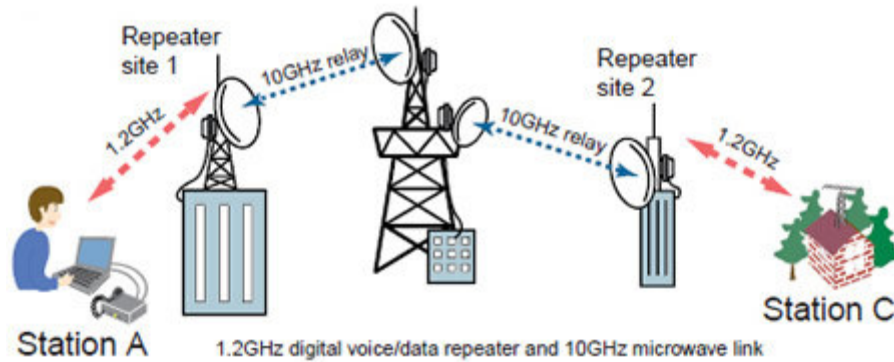
### Single repeater

The D-STAR repeater operates similar to existing analog repeater. That is a simple relay of transmit and receive communication in 1.2GHz band.



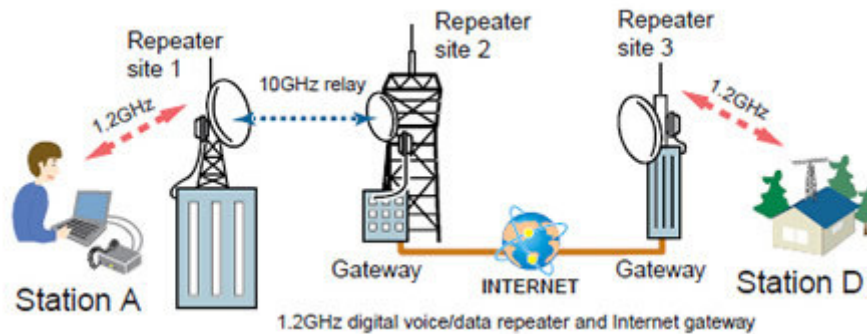
### Microwave link

When D-STAR repeaters are connected via 10GHz microwave, the D-STAR system transfers a received data to another repeater site. You can also make a CQ call to a specified repeater area.



### Internet gateway relay

When D-STAR repeaters are connected with the Internet gateway, the D-STAR system relays the received data over the Internet. Microwave links and Internet gateways can be combined even during one contact. So your message will get through virtually to anywhere in the D-STAR system.



<http://www.icomamerica.com/en/products/amateur/dstar/id1/default.aspx>

# ANNOUNCEMENTS

## Next Club Meeting:

**3rd Saturday February 16, 2008**

- 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: HF Digital Communications for beginners (psk31, rtty, sstv)**  
by Val Campbell K7HCP  
& Jeff Anderson KD7PAW
- **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 Wed June 04, 2008**

- 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: \$14.00**

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.

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## 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 @ 7:00 PM	Davis ARES	147.420 = simplex
Thursday @ 8:00 PM	Weber State ARC	146.820 - 123.0 (coming soon)
Thursday @ 8:00PM	RACES State VHF	145.490 - 123.0, 146.680 - 123.0 3 <sup>rd</sup> Thursday - even months only
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>

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*OARC OFFICERS*

President: Kent Gardner WA7AHY  
Vice Pres: Kim Owen KO7U  
Secretary: Maggi Campbell N7HCP  
Treasurer: Jeff Anderson KD7PAW

Director #1: Mike Webster N9NZ  
Director #2: Stan Sjol WOKP

*"WATTS NEWS" e-Magazine*

Editor: Val Campbell K7HCP

*OTHER CLUB FUNCTIONS*

Webmaster: Val Campbell K7HCP  
VE Liaison: Mary Hazard W7UE  
Repeater Engr: Mike Fullmer KZ7O  
Past President - Advisor:  
Mike Fullmer KZ7O

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**73 es cul de W7SU**

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