WATTS NEWS

The Best of Amateur Radio

OARC e-Magazine

www.OgdenArc.org

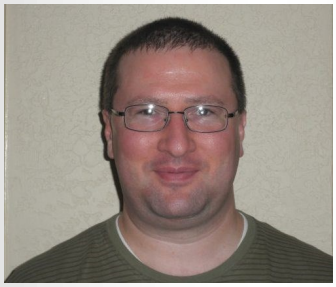
JANUARY 2015

Next Club Meeting/Activity

Meeting: Riverdale Fire Station

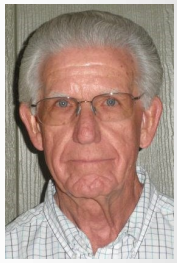
Gil Leonard NG7IL

President



Jason Miles KE7IET

Vice President

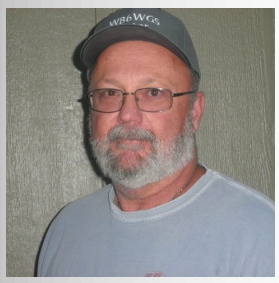


Larry Griffin AD7GL

Secretary

John Shupe K7DJO

Treasurer

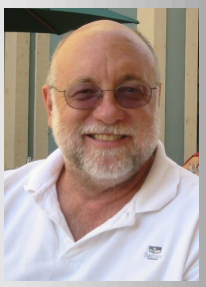


Pete Heisig WB6WGS

Program Director

Mike Taylor KE7NQH

Activity Director



Val Campbell K7HCP

Webmaster/NL Editor

PREVIOUS CLUB MEETINGS

OARC Annual Family Christmas Dinner

3rd Saturday 20 December 2014
6:30 PM
Golden Corral
11th & Washington Blvd, Ogden

NOTE: There were 77 in attendance. Thanks everyone!

NEXT CLUB MEETING/ACTIVITY

Meeting: APRS & Cell Phones
By Jason KE7IET

Riverdale Fire Station
3rd Saturday 17 January 2015
9:00 AM

PREVIOUS MEETINGS PICS

Photos by John K7DJO


Russell Stover
let it snow
BIRDS


EXIT
CHOCOLATES


EXIT


CHOCOLATES

Merry Christmas and Happy New Year!

See you next year.

OARC COMING EVENTS

-Tech Licensing Class -

One day crash course

Saturday 24 January 2015 @ 8:00 AM

Special VE Test Session follows at 3:00 PM

Get Your Ham Radio License

Location:	Weber County Sheriff's Office Training Room 721 West 12th Street, Ogden (Just south of the Business Depot Ogden)
Class Date:	Saturday, January 24th, 2015 from 8 a.m. to 3 p.m.
Class Price:	Free
Exam Date:	Immediately after the class
Exam Price:	$14
Contact:	Jason Miles KE7IET at (801) 896-3702 or jmiles2@gmail.com
Pre-Registration:	Walk-ins are welcome, but pre-registering would be appreciated where possible. Contact Jason Miles (see above) before January 24th, 2015 to pre-register.

Photo from user "Jakor" at Wikimedia Commons

Why get a license?

The hobby encompasses a wide range of interests. Here are just a few.

- Prepare for emergencies and other situations where cell phones may not be available.
- Socialize with people locally, nationally, and internationally.
- Participate in competitions and achievements.
- Build electronics that use radio frequencies.

How do you get a license?

The Federal Communications Commission requires that you take a 35-question, multiple-choice exam to get your first license. That's it. Morse code is NO LONGER required. Passing the exam gets you an entry-level "technician" license.

The Ogden Amateur Radio Club will be conducting a FREE one-day class to teach the concepts from the exam. It will be in a "cram session" format, where the entire study guide is taught in a few hours. The exam will be conducted immediately after the class finishes.

How do you study?

The curriculum for the class will be the free "No Nonsense" study guide written by Daniel Romanchik, KB6NU. It is available at the following address:

http://www.kb6nu.com/wp-content/uploads/2007/09/2014-no-nonsense-tech-study-guide-v1.1.pdf

Even though we will be reviewing the study guide in the class, it is strongly recommended that you study it before the class. You'll have the best chance of passing the exam if you do.

What do you bring?

- A copy of the KB6NU *No-Nonsense Technician-Class License Study Guide*
- Two forms of identification, at least one of which should be photo ID
- $14 for the exam
- Optional: scientific calculator, scratch paper, and pen or pencil

Questions?

The class and exam session are being conducted by the Ogden Amateur Radio Club. You can direct questions to Jason Miles, KE7IET at (801) 896-3702 or jmiles2@gmail.com. Information about the club and its activities can be found at the club's website: ogdenarc.org.

QRM from Gil

Gil Leonard NG7IL

QRM from Gil

The Christmas party went very well. We filled the banquet room to capacity and even had members sitting in the main restaurant. There were a lot of fun gifts given away, congratulations to all who had their names drawn. Jason, KE7IET, walked away with the grand prize. Hope you enjoy your new radio.

This New Year will be an exciting one. Jason, KE7IET, will be showing us how to access and use APRS (automatic packet reporting system) on our cell phones for the January meeting. The following week he will be conducting the annual Technician class. This year will be similar to last year as it will be a one day cram type session. If you know someone looking to get their license, direct them to the Club website for full details and links to materials and help. There is no cost for this class/cram session and a testing session will follow immediately after the class. Also, our regular testing session will be February 4th. Walk-ins are welcome at either session for any test.

February, March and April will be regular Club meetings at the Fire Station on Parker Drive in Riverdale. There is a map with meeting times and dates on the OARC website. The month of May will be our Golden Spike Special event station at the Golden Spike National Monument at Promontory, Utah. Operating dates will be the 8th and 9th. Everyone is welcome to visit and operate. We will have a control operator present so anyone who wishes to experience the HF bands can try it firsthand. There are many operators across the country that look forward to this event every year. This is a great time to make a day of it and bring the family out to see the trains, they are truly impressive. See photos of previous events on our website. Be sure to mark your calendar for this event.

The 146.820 repeater seems to be seeing more use. I put forth a challenge to the group to see how many contacts they can make and how many different call signs they can work each month. We will be looking for brags at the January meeting.

The Yahoo group has seen periodic spurts of activity also. If you have not signed into the group, please consider doing so. Chris K2CTC got a post started that brought out some really great information from several contributors concerning the 70cm/440MHz band. If you have a personal question or are looking for input on a project, this is a good place to go to get quick answers. The Yahoo group can be an excellent tool for all Hams to get, receive and stay on top of information about our great hobby. We can use it for "skeds" (scheduled time to meet) to test new equipment or make contacts too. Be sure to utilize this great tool.

If you have any ideas for future Club meeting topics, after meeting discussion groups or have a radio related topic you would like to share; please contact any of the Club officers or myself.

I hope everyone enjoyed the holidays. On behalf of the Club Officers and myself, we wish you all a happy, healthy and prosperous New Year.

Hope to hear you on the air, 73 de Gil NG7IL

ng7il@arrl.net

CLUB NEWS

Welcome to the following OARC "New-Comers" that visited our club meeting recently. We welcome you back soon!

There were a lot of new faces at the Family Christmas Dinner but I don't know who they all were. We hope to meet you at our next club meeting coming up in January.

See you there!

New memberships

KF7RKM	T	Mark, Teri
KB7KP	A	Scott, Dave
KG7KFD	T	Diamond, Tony
K7IGU	E	Salisbury, Darwin
KG7PMI	T	Sawyer, Patti
KG7PYF	T	Mamanakis, D
KG7PQW	T	Rupp, Josiah

Welcome Back—renewals

KD7EKO	E	Willis, Scott
KD7MG	E	Groves, Mike
KE7ELF	G	Harrington, Beth
AF7J	E	Harrington, Thomas
AE7IO	E	Mark, Spencer

CLUB NEWS

ARRL Field Day 2014 Results

FIELD DAY 2014							
Call	Score	Category	QSOs	Power Mult	Section	Participants	Club
KF7WGL	220	1B1B	14	5	UT	1	
N7HZB	255	1E	1	5	UT	1	
WA7BME	342	1B1	23	2	UT	1	
AD7YV	368	1E	59	2	UT	4	
WI7J	715	1E	113	5	UT	2	
KB0LQJ	735	2AB	9	5	UT	3	U of UT Amateur Radio
W7SU	1,006	2A	274	2	UT	45	Ogden ARC
W7DRC	1,230	3A	469	2	UT	60	Dixie ARC
NA7UT	1,295	1E	209	5	UT	2	
K7EA	1,354	1E	276	2	UT	1	
K7JEO	1,394	1B1	572	2	UT	1	
W7JEX	1,570	1B1B	152	5	UT	1	
WR7Q	1,756	2B2	580	2	UT	2	
W7BAR	2,082	4A	466	2	UT	41	Borderline ARC
K7UT	2,190	1AB	236	5	UT	3	Wolf Creek Crazies
K9JWV	2,320	1E	217	5	UT	1	
W7IVM	2,354	5A	429	2	UT	55	Bridgerland ARC
K7UM	4,420	3A	1,337	2	UT	19	Utah DX Assoc
W7SP	5,166	3A	1,745	2	UT	87	Utah ARC

CLUB NEWS

Club Badges

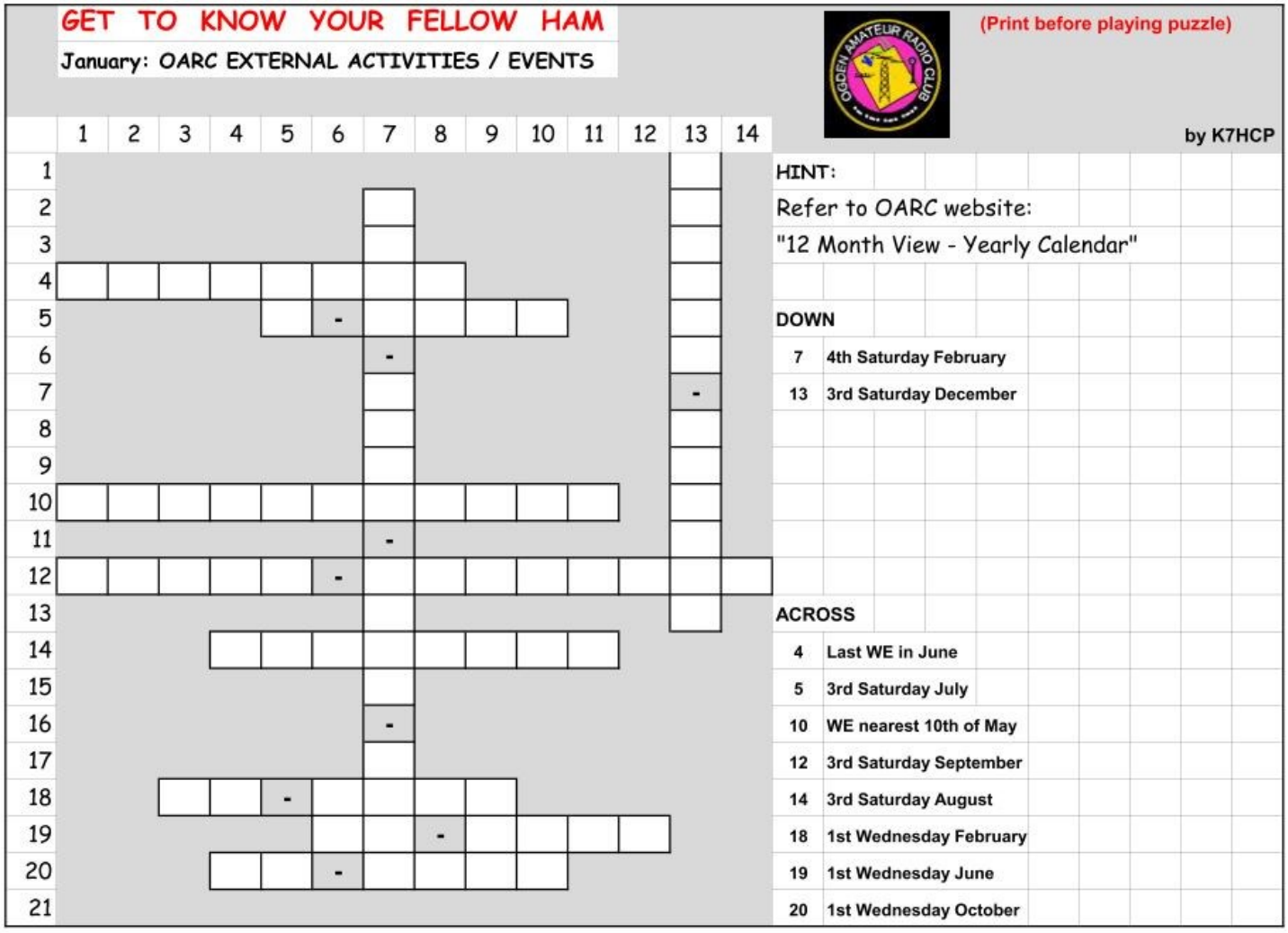
John K7DJO our club treasurer is worried about several of you that have not picked up your new pre-paid OARC club badge. Your badge doesn't look quite like this one because it has your call sign and your name on it but we are quite sure you will enjoy yours just the same. You can claim your badge at any future club function, meeting, activity or event or contact our club badge czar John K7DJO.

• KE7VVT, John • KF7HNU, Ralph • KG7FMY, Ryan • KG7IHA, Tom • KG7LIG, Andrea	• KG7KFD Tony • KG7PMI Patti

CLUB GAMES

GET TO KNOW YOUR FELLOW HAM

This month: Test your knowledge of “OARC external activities and events”. How to play: Go to the OARC website home page and click the link OARC Monthly “Cross Word Puzzle” from the right side panel. Then print the .PDF file.



Club Swapmeet

“SALE” or “WANTED” ITEMS NEEDED

OARC’s O-bay (On-Line Swap-Meet) items needed for the web site...

Visit http://www.ogdenarc.org/ then click on **Obay-Swap.**

Featured Item

ITEM #159

FOR SALE: IC-718 HF Transceiver

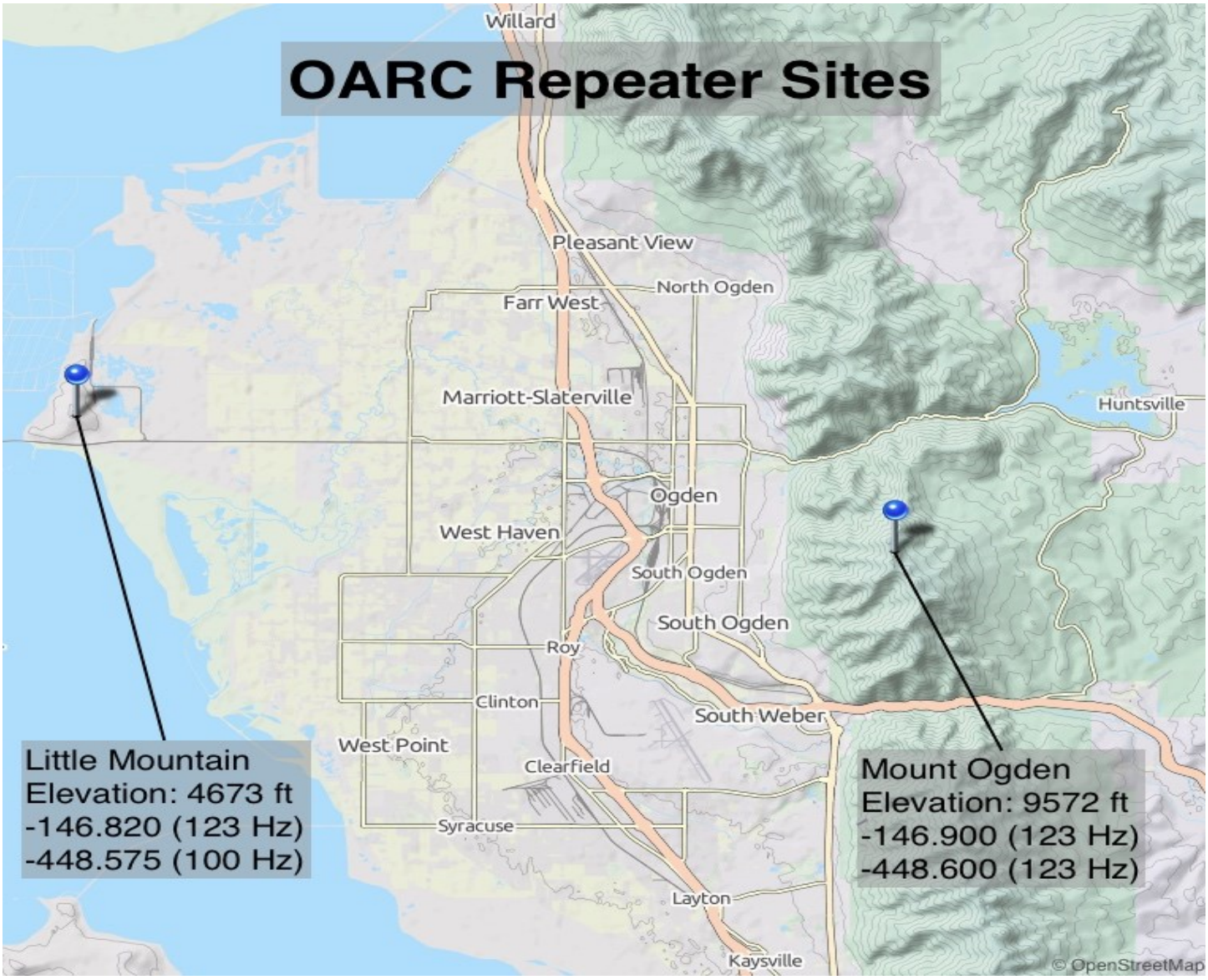
In like new condition in original box with all manuals.

Covers 160 - 10 Meters with all modes.

Has general coverage receiver from 0.5 through 30 Mhz.

PRICE: $525 CONTACT: Stan Sjol W0KP, 801-985-3651

CLUB REPEATER NEWS



Scott Willis KD7EKO

Mike Fullmer KZ7O

Scott Willis KD7EKO and Mike Fullmer KZ7O are the OARC repeater engineers that keep our club repeaters at Mt Ogden and Little Mountain operational.

More to come ...

following the next 3 pages of commercials.

Please stay tuned.

OARC YAHOO GROUP

Did you know that OARC has a Yahoo Group?

We occasionally communicate with our OARC members via the Yahoo Group. Receive notices regarding upcoming club meetings and all future e-newsletter release notices and much more.

You can also send notices to other group members yourself.

It's easy to sign up…

Just click on the 

icon at the top of the club website home page and then follow the Yahoo Group instructions to create yourself a user ID and password.

Club Badges

OARC Club badges are available for all club members and non-members.

The cost is $10.00 each. The badge comes with a “MAGNETIC” clip. Badge includes your Call Sign in large letters and your First Name in a somewhat smaller font in white lettering on a pitch black background with the club logo. See example below.

Place your order along with $10.00 in advance for each badge ordered and specify Call Sign and First Name. Contact webmaster or any club officer via email or see them at the next club meeting. For additional information see club website left side menu and click “Join” to fill out a club application form to order a club badge.

OARC MEMBERSHIP DRIVE

SUPPORT YOUR RADIO CLUB

Don't forget to signup/renew your OARC membership now ($15) which runs August to August. Consider signing up your spouse as well.

Ham + Spouse = $15 + $10 = $25

THANK YOU FOR YOUR SUPPORT

Join OARC

Renew your membership now!

Membership in the Ogden Amateur Radio Club is open to anyone interested in Amateur Radio. You do not need an amateur license to join us. You do not need to join the club to participate with us. Dues are used to operate the club, field day activities, and repeater equipment maintenance.
Joining is easy. Come to a club meeting or fill out an application form from the club website (click "Join" from the left side main menu). Instructions for mailing on the form.

DUES: Dues are $15.00 per person and runs August - August. (Ham + spouse = $25.) More than one ham in the family? Consider the OARC Family plan for $25.

NOTE: New Hams >>> Membership in OARC is complimentary for remainder of 1st year licensed.

HOBBY NEWS

From: **ARRL Members Only Web site**

Date: Tue, Dec 16, 2014
Subject: **H.R. 4969 Update and Look Ahead**

As we all have experienced, the political process is complex and slow and the wheels of government are even slower. That being said, our efforts with H.R. 4969 ("The Amateur Radio Parity Act of 2014") have had measures of success; we intended to obtain 30 co-sponsors for the Bill and actually ended up with almost 70, and ARRL's advocacy is once again being known and gleaning interest in the halls of Congress.

Although we got a late start on the legislative effort last June due to time needed to line up a minority cosponsor so that a truly bipartisan bill could be introduced, we were able to amass an exceptional and surprising level of support for the Bill, thanks to that very bipartisan co-sponsorship, and thanks especially to your efforts at the grassroots level. As was the risk being so close to the end of the current Congress and this being a distracting election year, the Bill did not progress as far as expected. Nevertheless, the support generated will give us a significant head start in the 114th Congress beginning in January, not to mention the breathing room of at least a full legislative session ahead to pile on more progress. We have in mind reassembling at least 60 of the cosponsors that we had for H.R. 4969 as original cosponsors for the new Bill which should give us momentum to obtain a much larger list of cosponsors, more positive visibility, more buy-in, and ultimately more traction in a usually sticky legislative process. We have also received interest from Senators in sponsoring a Senate version of the Bill. So far, opposition from the one association representing HOAs has been only minimally active in attempts to oppose the Bill and they have been unsuccessful due to their mis-statements of fact and mis-characterization of the actual effect of the legislation.

Many thanks to all of you who wrote, called, emailed, and personally visited your Congressional Representatives, as we began our travel in the maze of representative government; your efforts have not gone un-noticed and have built a strong foundation for a strong follow-on phase.

Please stay tuned for next steps.

73, Brian Mileshosky N5ZGT, Rocky Mountain Division Director

Straight Key Night: A Return to the Basics

12/30/2014

ARRL Straight Key Night (SKN) returns on January 1, 2015 (0000 to 2359 UTC), offering a chance for many to get back to their Amateur Radio roots. Those operators who began their years in Amateur Radio restricted to CW on the old Novice bands used some sort of manual key to send. Straight Key Night is an opportunity to relive those "brass-pounding" experiences. This 24-hour event is not a contest but a day dedicated to celebrating our CW heritage.

Participants are encouraged to get on the air and simply enjoy conversing in CW, with the use of a straight — or hand — key or bug for sending preferred. Some enhance the fun by using vintage radio gear. No points are scored, and everyone who participates is a winner!

Straight Key Night participants may use all authorized Amateur frequencies, but activity has traditionally been centered on the HF bands.

Call “SKN” instead of “CQ” to solicit contacts, and use SKN instead of RST when transmitting signal reports. These tip off passers-by that you’re taking part in Straight Key Night and may lead to additional contacts. When the event is over, you’re invited to vote for the operator with the “best fist” or sending style (this does not have to be someone you worked) and for “most interesting QSO.” The results will be tabulated and included in the results. Send your information to straightkey@arrl.org.

ARRL Asks FCC to Continue Issuing Hard Copy Licenses to Those Who Want Them

11/06/2014

In **comments** filed November 5, the ARRL has recommended that the FCC continue to provide paper license documents to Amateur Radio licensees who want them. The League's remarks were in response to an FCC ***Public Notice*** (in WT Docket 14-161) that proposed to cease the routine issuance of hard-copy license documents to all Wireless Service licensees, including radio amateurs. While having a paper license document from the FCC to post on the wall of the ham shack has been a tradition, the Commission for several years has considered the "official" Amateur Radio license to be the virtual document residing in its Universal Licensing System (ULS) database.

"The FCC is willing to continue to mail paper licenses to those who request them," ARRL General Counsel Chris Imlay, W3KD, has explained. "However, they are making available to licensees — starting right now — the actual license to print via the FCC ULS, and it is allowing hams now to opt out of receiving paper licenses from the FCC directly." (See ULS menu image.)

Under the FCC-proposed process, once a license application is granted, the ULS will generate an official electronic license but will no longer mail a hard copy license unless notified that the licensee wishes to receive an official paper license document. Until new procedures are final, however, the Commission will continue to print and mail official paper licenses, unless notified to stop.

"Should the Commission proceed with the *Notice* proposals," the League said in its comments, "it is ARRL's strong recommendation that the Commission give serious consideration to continuing a default provision for sending an initial paper license document to new licensees in the Amateur Radio Service, along with detailed, simple instructions for how to make the elections set forth in the notice relative to future modified or renewed licenses."

The ARRL pointed out that not everyone has easy access to, or is comfortable using, the ULS and that Amateur Radio licensees may occasionally need an official license document — for example, when applying for a license upgrade at a VEC exam session or for vehicle call sign license plates.

"If there is not a license printed on distinctive license stock by the Commission, authentication issues arise and the possibility of electronic alteration of a license document is created," the League.

The ARRL also suggested that requiring individuals to go online in order to obtain a license document may prove to be a roadblock to some applicants.

"It is not acceptable to erect barriers to entry for anyone to obtain an Amateur Radio license or to modify a license," the League commented. "ARRL is concerned that there should be, especially for newcomers, an easy, intuitive path to make the election for license delivery method that does not involve ULS access at the outset."

The *Notice* also proposes, alternatively, that the FCC send the official electronic license via e-mail upon grant of an application, if the applicant has provided a valid e-mail address on the application form. Licensees not wanting to provide an e-mail address could obtain an official electronic license document directly from the ULS. The *Notice* further proposes that licensees could notify the Commission that they wish to receive or continue receiving official authorizations on paper.

The ULS License Manager online system now includes a setting that allows licensees to notify the FCC that they want to receive official licenses on paper. Licensees could change the default setting online, so that once an application has been granted, the FCC would mail an official paper license.

The deadline to file comments is November 10.

HOBBY NEWS

Submitted by

Kent WA7AHY

This looks like a legitimate call plate, but it is actually a handi-capped tag where the supposed O is really a zero.

TNX Kent, WA7AHY

HOBBY NEWS

Submitted by

Kent WA7AHY

I made both of the following posters and gave them as gifts at the Christmas dinner party. I got to thinking that others my want them to put on their ham shack wall.

So if you would like you can download them from the club "download" page (lower right corner), print them out on pre-embossed or certificate paper and frame them and hang them on you ham shack walls.

Samples follow below.

Enjoy!

TNX

Kent, WA7AHYY

ACHTUNG!!

Non-technischen peepers!

Das machine is nicht fur gerfingerpoken und mittengrabben. Ist easy schnappen der springen-werk, blowen fusen, und poppencorken mit spitzensparken.

Is nicht fur gewerken by das dummkopfen. Das rubbernecken sightseerern keepen das hands in das pockets.

Relaxen und watchen das blinkenlights.

Tune For Maximum Smoke

GUEST ARTICLE

by KB6NU

How do we promote better operating practices?

A lament that I often hear is that many amateur radio operators either don't seem to understand the importance of good operating practices or just don't care about them. Just this morning, a reader sent me an e-mail saying, "I think there are too many hams out there that don't how to call a station on split frequency. It's amazing that we have so many dummies out there."

I wrote back, saying, "Maybe we need another type of Official Observer, called the Operating Observer. This group would note when operators aren't following good operating procedures and send people gentle reminders." Of course, as soon as I hit Send, I knew this wasn't a very good idea. As my reader noted, this would be a thankless job, and chances are the poor operators would simply ignore the notices, anyway.

Even so, there must be some way to encourage good operating procedures. One effort to promote better operating procedures is the DX Code of Conduct (http://www.dx-code.org/). **Editors Note: See attachment below.** This is a list of 13 suggestions to make DX operation, particularly pileups, less chaotic. The website includes a small image that you're supposed to post to your website to show that you support the Code. While this is certainly a step in the right direction, I wish there was something that we could do to be more proactive in improving operating practices.

There is, of course, the ARRL Operating Manual. This publication is now is in its tenth edition and is a valuable source of information about how to operate properly. The problem is only a fraction of the amateur radio operators on the air have a copy, much less read it.

Another attempt at promoting good operating practice is the ARRL's A-1 Operator's Club (http://www.arrl.org/a-1-op). While a noble effort, I think that this program really requires more promotion. In addition to being more aggressive about finding A-1 operators and bringing them into this "club," the ARRL should use it to promote better operation. Perhaps a series of videos with the A-1 Ops logo showing how to operate split or how to properly call CQ would help improve operating practices overall.

Talking about videos, I'd be surprised if there weren't already some YouTube videos that illustrate good operating practices. If you know of any, please e-mail me. It would be great to have a list of really good ones that I can send to people who want information on how to operate better.

What do you think? Do we need to be more proactive about encouraging hams to use good operating practices? If so, how do we go about it? What do you do to encourage better operating practices?

==========

When not worrying about the state of amateur radio operating practices, you'll find KB6NU working on updates to his "No Nonsense" study guides, teaching one-day Tech classes, or blogging about amateur radio at www.kb6nu.com.

DX Code Of Conduct

- I will listen, and listen, and then listen again before calling.
- I will only call if I can copy the DX station properly.
- I will not trust the DX cluster and will be sure of the DX station's call sign before calling.
- I will not interfere with the DX station nor anyone calling and will never tune up on the DX frequency or in the QSX slot.
- I will wait for the DX station to end a contact before I call.
- I will always send my full call sign.
- I will call and then listen for a reasonable interval. I will not call continuously.
- I will not transmit when the DX operator calls another call sign, not mine.
- I will not transmit when the DX operator queries a call sign not like mine.
- I will not transmit when the DX station requests geographic areas other than mine.
- When the DX operator calls me, I will not repeat my call sign unless I think he has copied it incorrectly.
- I will be thankful if and when I do make a contact.
- I will respect my fellow hams and conduct myself so as to earn their respect.

FEATURE ARTICLE

The Battery Powered Mobile Station (Part 1)

by K2CTC (Chris)

A local ham recently asked for my opinion on what capacity (amp-hour) 12V battery would be adequate for powering his mobile rig. I provided a brief recommendation but began thinking about the topic of powering a mobile station via battery in the broader sense. While there is no "one size fits all" solution, there are a few guidelines and calculations that may prove helpful when selecting a battery (or batteries) for this application. I am not an expert, but do have some related experience that I feel qualifies me to provide an opinion and some technical information on the topic. If I do get something wrong, please let me know so that I can revise my own understanding. Perhaps we could start a new discussion in the OARC Yahoo! group?

A few years ago, before re-entering the world of ham radio, I built a small scale solar generator from scratch as both a learning exercise and as a source of clean, noise-free emergency power. I put a lot of research into selecting the proper components for the system to yield something that would meet my application needs and stay within a fixed budget. One critical component in particular, the battery, consumed a disproportionate amount of research time since there is just so much information to take in. What I wound up with is a 100 watt 12 volt system with 125 amp-hours total storage capacity that effectively runs a 300 watt pure sine-wave DC to AC inverter and powers and assortment of other 12V loads. Though I had not planned it in advance, it also currently runs my mobile/base station.

Since there is so much material to cover, I have decided to break this article into two parts. In the first part, we are going to look into the electrical operating environment and examine the power requirements of a “typical” mobile station. In the second part, I will discuss battery amp-hour ratings as well as battery types and applications. We will narrow down the battery selection and touch on the charging system. Perhaps equally important, I will talk about the proper care and feeding of the battery to keep it healthy and maximize longevity.

First let's take a look at a mobile rig in it’s native habitat, the automobile. In the interest of not leaving out self-evident details, throughout this entire article we are discussing a typical 12 volt direct current electrical system (13.8V nominally), as that is the universal requirement for mobile rigs and is typically provided in an automobile. In this scenario, your vehicle has a starting battery which is automatically charged by the alternator while the engine is running. The mobile rig, intended for this environment, is powered by the vehicle charging system while the engine is running and feeds off the battery when it is not. The system is designed to provide high amounts of current (amps) for starting the engine (with the battery as the source) as well as recharging the battery and running various DC loads while the engine is running (with the alternator/battery as a combined source). So, it can generally handle the demands of a mobile VHF/UHF rig with no complaints. So long as you operate the radio while the engine is running, and limit the time spent on this activity while it is not, you shouldn’t run into any power problems.

Running a mobile rig separate from a vehicle is a matter of replicating, to an extent, the automotive electrical environment. For the purpose of this article, this requires two primary components, a battery and a way to keep it charged. In order to make a more informed decision on which battery to use, it is first necessary to define your power requirements. How many volts, amps, and what is the expected operating duration (amp-hours) between charge cycles? We have already established the need for 12V DC. It is the current draw (amperage) that we are more interested in. Time to break out the manual and look at the specifications section. Here you will find different current values for each operating mode. Let's assume our example rig consumes less than 1A while not transmitting, less than 8A while transmitting on low power and less than 14A while transmitting on high power. Those specs are borrowed from the Kenwood TM-281A and will vary from rig to rig but can be loosely considered "typical" for a VHF/UHF mobile rig. Your power requirement should be based on the highest possible current draw with a bit of added wiggle room. In this case, I would establish a power requirement of 20A. If you are unsure of the maximum current draw of your rig, it may prove helpful to reference the rating of the fuse that came with it, go to the next higher fuse rating and base your requirement off that. So if your rig has a 15 amp fuse, assume a power requirement of 20A to be safe.

So we have established a power requirement of 12V DC and approximately 20A. The important thing to keep in mind, especially when running on battery power, is that the radio always expects 12V (with a bit of wiggle room) but requires anywhere from less than 1A to around 14A depending on what the radio is doing at any given time. All of these values are approximate, even in receive mode, the current draw will vary depending on if a received signal is coming through the speaker and how high your volume is set. With our example rig, we can see that transmitting in low power uses approximately 8 times more electrical current than receiving. Therefore, the ratio of time spent transmitting to the time spent receiving (otherwise known as duty-cycle) has a tremendous impact on expected battery life.

This leads us into the last requirement, time. How much time (what duration) do you expect to operate your radio on a fully charged battery before it is considered discharged? Batteries are rated in amp-hours (Ah) which are units of electrical charge equal to a steady current draw of one amp over a duration of one hour. In our example, the amps consumed by the radio are anything but steady. So to make better sense of the "time" requirement lets switch gears for a moment and perform a thought exercise with something that is a bit more static… Utility power and a light bulb.

I find it easiest to first think of how your utility power is billed, per kilowatt-hour (kWh), which is the equivalent of 1000 watt-hours. A kilowatt-hour is a measurement of energy consumed (or work performed) over time, similar to an amp-hour for a battery. For this example, let's suppose we have a 100 watt light bulb. How do we figure out how much "energy" it uses if we run it continuously for, let's say, 10 hours? Assuming a steady consumption of 100W, we multiply the energy consumed by the duration of said consumption (watts * hours = watt-hours). 100W*10H=1000WH or 1kWh (kilowatt-hour).

One difference between utility power and battery power is that the electric company can supply an indefinite and constant supply of electricity, whereas a battery holds a limited supply and the capability to deliver it deminishes over time. Simply put, the amp-hour rating of a battery is the total "energy" provided between a fully charged and fully discharged state. However, the amp-hour rating can be deceiving to the uninformed. All things being equal, one would think that a 100Ah battery would supply 100 amp-hours of juice no matter what. This is simply not the case. I will reserve a more detailed explanation of amp-hour ratings for part two.

Outside of some generalities, how many amp-hours you require is going to to be personal and depend heavily on two factors. How long do you wish to power your station between charge cycles? And of that time, what is the anticipated transmitter duty-cycle? Are you planning on primarily monitoring, or do you intend on acting as a net control station? These are important considerations, especially in an emergency situation, when you may find yourself transmitting more often or needing to monitor for an extended period of time. Based on what we have covered so far, with some basic calculations you can estimate your personal amp-hour requirement. Unfortunately the math isn't as straight-forward when measuring a device that, unlike a lightbulb, has a fluctuating power requirement.

Using our example rig, let's suppose that for each hour the device is powered on, 45 minutes (.75 hours) will be spent receiving (at 1 amp) and the remaining 15 minutes (.25 hours) will be spent transmitting in low power (at 8 amps). This would work out like so: 1A*.75h=.75Ah and 8A*.25h=2Ah for a total of 2.75Ah of energy consumed per hour of operation. If we were to flip the numbers and transmit for 45 minutes instead of 15, it would work out like this: 8A*.75h=6Ah and 1A*.25h=.25Ah for a total of 6.25Ah of energy consumed per hour of operation. That is a difference of 3.5Ah over the same one hour period.

So how many amp-hours do you need in a battery? The short answer, as many as is practical given the constraints of your situation. You must balance capacity (amp-hours) with size, weight, and cost. Ask yourself how much money you are willing to spend and if you plan on making your station portable. I have a 125Ah battery. At 75 pounds it isn't very portable. At nearly $300 I considered it a long term investment.

As a side note, I will point out that you can use a DC inline watt meter and power analyzer rather than guesstimating with a calculator. These handy gadgets work like your electric utility meter, except for DC applications, giving you amps, volts, amp-hours and watts on a digital display.

http://www.powerwerx.com/digital-meters/dc-inline-watt-meter-power-analyzer-powerpoles.html

That about wraps up part one. Please feel free to post a message in the OARC Yahoo! group if you have any questions and/or comments. Please check back next month for part two.

73, K2CTC (Chris

ANNOUNCEMENTS

Next Club Meeting:

3rd Saturday of each Month

The Ogden Amateur Radio Club meetings are usually held on the **3rd Saturday** of each month.

Meeting/Activity:

See notices above

Talk-in: -146.82 (pl 123.0)

Check OARC web site for details

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 Feb, Jun & Oct

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

Time: 06:00 PM *Walk-ins allowed*

Location: Permanent location

Weber County Sheriff Office
Training Room
712 W 12th Street Ogden Utah

Contact: VE Liaison:

Rick Morrison W7RIK (Liaison)

morrisonri@msn.com (801-791-9364)

Jason Miles KE7IET (IT)

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.

Club Web Site

Be sure to visit our club web site.

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.

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
146.900-	OARC	123.0	Mt Ogden
448.600-	OARC	123.0	Mt Ogden
146.820-	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
147.040+	DCARC	123.0	Antelope Isl
447.200-	DCARC	127.3	Antelope Isl
449.925-	DCARC	100.0	No Salt Lake
145.290-	GSARC	123.0	Brigham City
145.430-	GSARC	123.0	Brigham City
147.220+	GSARC	123.0	Brigham City
448.300-	GSARC	123.0	Brigham City
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
147.100+	Morgan	123.0	Morgan Co
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 Co	100.0	Lewis Peak

AREA CLUB MEETINGS & WEB SITES

CLUB	WEB SITE	DATE/TIME	LOCATION
OgdenARC	ogdenarc.org	3rd Saturday 09:00 am	Check OARC web site …
WC ARES	ogdenarc.org/ join.html#ares	2nd Thursday 06:30 pm	Weber Co. Library Ogden Utah
WC Sheriff Comm-O		1st Saturday 10:00 am	Weber Co. Sheriff Complex West 12th Street Ogden Utah
Barc	barconline.org	2nd Saturday 10:00 am	Cache Co. Sheriffs Complex 200 North 1400 West Logan Ut
CSERG	dcarc.net /ares.htm/	Last Wednesday 8:30pm	Clearfield City Hall Clearfield Utah
DCarc	dcarc.net	2nd Saturday 10:00 am	Davis Co. Sheriff Complex Farmington Utah
NU Ares	home.comcast.net/ ~noutares/	3rd Wednesday 7:00 pm	Cache Co. Sheriff Office Logan Utah
Uarc	xmission.com /~uarc/	1st Thursday 7:30 pm	UofU EMC Bldg Room 101 Salt Lake City Utah
GSarc	Ubetarc.org	Check Website	Check Website
Utah DX Association	udxa.org	3rd Wednesday check web page for details	check web page for details Salt Lake City area
UvhfS	ussc.com /~uvhfs/	Each Tuesday 8:00 pm (refer to web site)	Weekly 2 meter net (no eye ball meetings)
WDArc	westdesertarc.org/	1st Tuesday 7:00 pm	Tooele County Courthouse Tooele Utah
WsuArc	https:groups.google.com/forum/#!forum/wsuarc	3rd 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 HF LSB
Daily @ 07:30 PM mt	Utah Code net HF	3.570 Mhz HF CW
Daily @ 02:00 UTC	Utah Farm net HF	3.937 Mhz HF LSB
Sunday @ 8:45 AM	Ogden Old Timers HF net	7.193 Mhz HF LSB
Sunday @ 7:30 PM	GS ARC	145.430 - 123.0 (training net)
Sunday @ 8:30 PM	SATERN Net	145.900 - 123.0
Sunday @ 9:00 PM	Morgan Co Net	147.100 +123.0
Sunday @ 9:00 PM	UARC Info net	146.620- no PL tone required
Monday @ 9:00 PM	2-meter SSB net	144.250 Mhz 2-meter USB
Tuesday @ 8:00 PM	Weber ARES	448.600 - 123.0
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	GS 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 HF USB
Wednesday @ 9:00 PM	6-meter SSB net	50.125 Mhz 6-meter USB
Thursday @ 6:30 PM	Davis Co Elmers Net	147.040 + 123.0 New Hams
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 3rd 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 HF LSB 3rd Saturday – odd months only
Saturday @ 11:00AM mst	QCWA net HF	7.272 Mhz HF LSB

OARC OFFICERS

President: Gil Leonard NG7IL

Vice Pres: Jason Miles KE7IET

Secretary: Larry Griffin AD7GL

Treasurer: John Shupe K7DJO

Program Director:
Pete Heisig WB6WGS

Activity Director:
Mike Taylor KE7NQH

"WATTS NEWS" e-Magazine

NL Editor: Val Campbell K7HCP

"OARC" web site

Webmaster: Val Campbell K7HCP

OTHER CLUB APPOINTMENTS

VE Liaison: Richard Morrison W7RIK
Jason Miles KE7IET (IT)

Repeater Engineers: Mike Fullmer KZ7O
Scott Willis KD7EKO

Photographer: John Shupe K7DJO

QSL Manager: John Shupe K7DJO

Historian/Librarian: Kent Gardner WA7AHY

Equipment Manager: Val Campbell K7HCP

Club Call Sign Trustee: Larry Griffin AD7GL

Advisors: Stan Sjol W0KP
Mike Fullmer KZ7O
Kent Gardner WA7AHY
Kim Owen KO7U
Larry Griffin AD7GL

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73 es cul de W7SU

www.OgdenArc.org