Issue # 5 May, 2014

"News & Views"

Your Taylorsville HAMnet newsletter

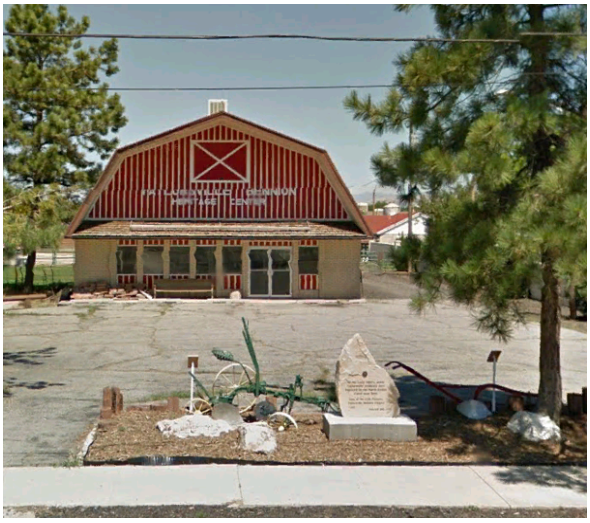
This is your newsletter. We encourage YOU to submit information that will be of benefit to our group members.

In Person Meeting Place

Taylorsville/Bennion Heritage Center

1488 West 4800 South, Taylorsville, Utah 84123

We will meet at this building in the future unless otherwise indicated.



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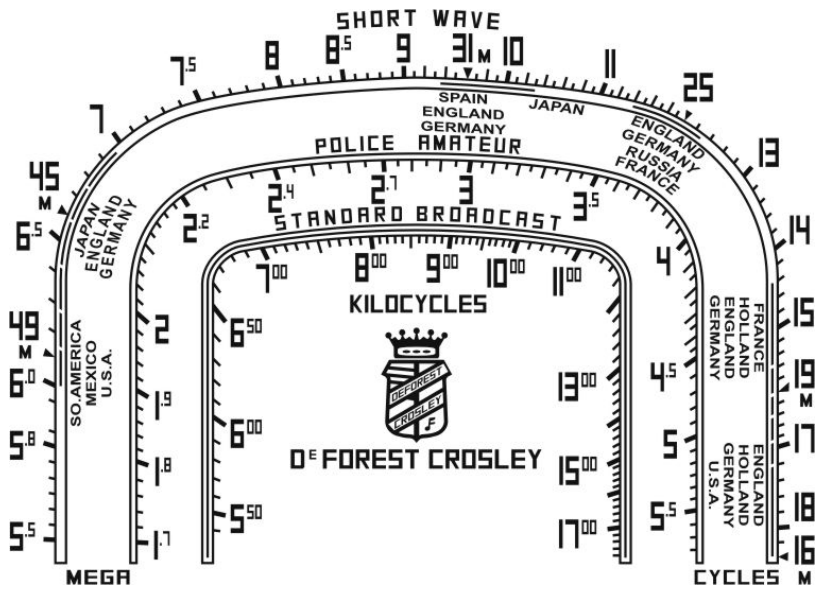
Published by Taylorsville HAMnet

Rulon Swensen, Chief culprit

SHORT WAVE RADIO



What is shortwave radio?

Shortwave (also known technically as "high frequency")

is found just above the medium-wave (or AM) band on the radio spectrum. The AM band in the United States ends at 1,700 kHz (or 1.7 MHz). Shortwave goes roughly from there up to 30,000 kHz (or 30 MHz). The shortwave spectrum is divided into several segments, some of which are used for marine communications, utility stations (i.e. radio-teletype and point-to-point feeds) and amateur radio operators (who talk back and forth to one another with relatively low power). But certain "bands" within the shortwave range are dedicated to regular broadcasting stations, such as the Voice of America, the BBC, the Voice of Russia and many privately-owned stations that are transmitting to a mass audience. When you say “shortwave radio” this is what most people will think of.

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Member Spotlight

Keith Barlow

Keith, KE7UMK has been with our group from the beginning. Keith holds a General license and is active in many facets of the hobby.

As manager of the Food Pantry over the past several years, Keith made the facility available to us for our meetings. He was instrumental in helping to obtain the pantry radio room.

Thanks Keith for your support over the years.

Short Wave Radio (cont)

Broadcasters use shortwave radio to send their program content to people around the globe.

In 1932 The British Broadcasting Corporation (BBC) started transmitting its "Empire Service" by shortwave radio to the world. Today it's known as "BBC World Service" and also transmits television and online programming.

In 1950 The U.S. government started Radio Free Europe (RFE) to transmit news, information, and analysis via shortwave to countries in Eastern Europe, Central Asia, and the Middle East.

North Carolina had a key role in propagating American ideals with the Voice of America transmitter site at Greenville the most powerful international broadcaster in the world. The transmitting complex had three sites forming a triangle around the city of Greenville. Two of the sites housed nine transmitters – three of 500,000 watts, three of 250,000 watts, and three of 50,000 watts. The third site was a receiver site and administrative offices. The sites covered 6,193 acres and employed 100 people working around the clock. That doubled the VOA's total transmitter power. The main target areas for the Greenville shortwave broadcasts were Latin America, Cuba, the Caribbean, and Africa.

Once an extraordinarily powerful outreach tool for nations everywhere, shortwave radio is fading. International broadcasters today use satellites and cable TV for direct broadcasting, Web sites with news, entertainment and streaming audio and video, Facebook pages and Twitter tweets to reach distant audiences. At the Voice of America and most other national shortwave stations around the globe, one over-the-air language service after another has been closed down. Like most other mass media, shortwave media are converging onto the Internet. The BBC, VOA, Deutsche Welle, Radio France International, Radio Australia, China Radio International and most other international broadcasters have Web and Facebook pages and Twitter feeds.

Many nations are cutting back on the use of analog technology for shortwave broadcasts over the air so they can deliver digital programming over the Internet. The Voice of America has one remaining transmitter site near Greenville, North Carolina. That last of three original VOA sites near Greenville is Site B, also known as the Edward R. Murrow Transmitting Center. VOA is experimenting with digital transmission modes. The program is called *VOA Radiogram*. Many listeners are receiving and decoding it.

Shortwave radio played a vital roll in years past in bringing the world the news and providing a link to other cultures. We should cherish the value of Short Wave radio as we move forward with new methods of communication

We are an unusual bunch, aren't we?

As I drive around the valley, I find myself constantly looking for signs of the HAM enthusiast. On cars and trucks, it's the dead giveaway when you see the Call Sign license plate. But if they do not advertise by plate, you have to look a little harder to see the obscure and small mag mount antenna.

On homes it may be the simple wire antenna stretched from a tree limb to a pole. And then you have the proud 16 x 10 foot beam mounted high in the air. Or it is the simple antenna mast made from a length of pipe to the Rohn 45G tower with low flying aircraft warning lights mounted on the top.

And, of course there is our way of talking! Someone asks-- How to you spell vacuum and most people say—-V-A-C-U-U-M. But HAM's say—victor-alpha-charlie-uniform-uniform-mike. **Yes, we do things differently!**

We are in good company however. Internationally, you will hear much of the same disciplined responses in communication. The military also uses much of the same language we do over their radios.

At least we don't (or shouldn't) hear such jive as "Hey K7XXX, you got your ear's on? Or calling K7XXX, you out there good buddy? I don't think I have ever heard anyone say "Hey, we got us a HAM radio convoy! I have heard a little bit of crossover from the CB era but for the most part HAM's like to do things properly.

So—Let's keep our unique but proper way of doing things.

OH WOW, look at that big SCREWDRIVER antenna on the back of that car! I hope it doesn't flip the car over…… **Yes-- We are an unusual bunch!**

Soldering Primer

Soldering is defined as "the joining of metals by a fusion of alloys which have relatively low melting points". In other words, you use a metal that has a low melting point to adhere the surfaces to be soldered together. Consider that soldering is more like gluing with molten metal, unlike welding where the base metals are actually melted and combined. Soldering is also a must have skill for all sorts of electrical and electronics work. It is also a skill that must be taught correctly and developed with practice.

The first thing you will need is a soldering iron, which is the heat source used to melt solder. Irons of the 15W to 30W range are good for most electronics/printed circuit board work. **Anything higher in wattage and you risk damaging either the component or the board.** If you intend to solder heavy components and thick wire, then you will want to invest in an iron of higher wattage (40W and above) or one of the large soldering guns. The main difference between an iron and a gun is that an iron is pencil shaped and designed with a pinpoint heat source for precise work, while a gun is in a familiar gun shape with a large high wattage tip heated by flowing electrical current directly through it.
For general electronics use, a soldering iron is generally the tool of choice as its small tip and low heat capacity is suited for printed circuit board work (such as assembling kits). A soldering gun is generally used in heavy duty soldering such as joining heavy gauge wires, or soldering brackets to a chassis.

You should choose a soldering iron with a 3-pronged grounding plug. The ground will help prevent stray voltage from collecting at the soldering tip and potentially damaging sensitive (such as CMOS) components.

For a beginner, a 15W to 30W range is the best but be aware that at the 15W end of that range, you may not have enough power to join wires or larger components. As your skill increases, a 40W iron is an excellent choice as it has the capacity for slightly larger jobs and makes joints very quickly. Be aware that it is often best to use a more powerful iron so that you don't need to spend a lot of time heating the joint, which can damage components.

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A variation of the basic gun or iron is the soldering station, where the soldering instrument is attached to a variable power supply. A soldering station can precisely control the temperature of the soldering tip unlike a standard gun or iron where the tip temperature will increase when idle and decrease when applying heat to a joint. However, the price of a soldering station is often ten to one hundred times the cost of a basic iron and thus really isn't an option for the hobby market. But if you plan to do very precise work, such as surface mount, or spend 8 hours a day behind a soldering iron, then you should consider a soldering station.

Solder

The choice of solder is also important. There several kinds of solder available but only a few are suitable for electronics work. Most importantly, you will only use *rosin core solder*. *Acid* core solder is common in hardware stores and home improvement stores, but meant for soldering copper plumbing pipes and not **electronic circuits**. If acid core solder is used on electronics, the acid will destroy the traces on the printed circuit board and erode the component leads. It can also form a conductive layer leading to shorts.

For most printed circuit board work, a solder with a diameter of 0.75MM to 1.0MM is desirable. Thicker solder may be used and will allow you to solder larger joints more quickly, but will make soldering small joints difficult and increase the likelihood of creating solder bridges between closely spaced PCB pads. An alloy of 60/40 (60% tin, 40% lead) is used for most electronics work. These days, several lead-free solders are available as well. **Kester "44" Rosin Core** solder has been a staple of electronics for many years and continues to be available. It is available in several diameters and has a non-corrosive flux.

Large joints, such as soldering a bracket to a chassis using a high wattage soldering gun, will require a separate application of brush on flux and a thick diameter solder of several millimeters. Remember that when soldering, the flux in the solder will release fumes as it is heated. These fumes are harmful to your eyes and lungs. Therefore, always work in a well-ventilated area and avoid breathing the smoke created. Hot solder is also dangerous. It is surprisingly easy to splash hot solder onto yourself, which is a thoroughly unpleasant experience. Eye protection is also advised.

Calendar Events - May, 2014

May 5 - Weekly Net, 8:30 p.m. 146.94 repeater

May 12 - Weekly Net 8:30 p.m. 146.94 repeater

May 19 - Weekly Net 8:30 p.m. 146.94 repeater

May 26 - Weekly Net 8:30 p.m. 146.94 repeater

May 30 - **In person meeting, Ham's in the park activity. Taylorsville Park-Valley Regional Park-Millrace Park**

Calendar Events - June 2014

June 2 - Weekly Net, 8:30 p.m. 146.94 repeater

June 9 - Weekly Net, 8:30 p.m. 146.94 repeater

June 16 - Weekly Net, 8:30 p.m. 146.94 repeater

June 23 - Weekly Net, 8:30 p.m. 146.94 repeater

June 28 - **In person meeting, Taylorsville Dayzz activity**

June 30 - Weekly Net, 8:30 p.m. 146.94 repeater

Calendar Events - July 2014

July 7 - Weekly Net, 8:30 p.m. 146.94 repeater

July 14 - Weekly Net, 8:30 p.m. 146.94 repeater

July 21 - Weekly Net, 8:30 p.m. 146.94 repeater

July 26 - **In person meeting, SHOW AND TELL / SWAP MEET – Bring your projects and share ideas**

July 28 - Weekly Net, 8:30 p.m. 146.94 repeater

Who's calling the net?

May 5th	Dick	W7SAE
May 12th	Open	Please volunteer
May 19th	Rulon	KE7OJX
May 26th	Doug	AD7LO
June 2nd	Keith	KE7UMK
June 9th	Open	Please volunteer
June 16th	Open	Please volunteer
June 23rd	Rulon	KE7OJX
June 30th	Doug	AD7LO
July 7th	Open	Please volunteer
July 14th	Open	Please volunteer
July 21st	Rulon	KE7OJX
July 28th	Doug	AD7LO

Please volunteer to take your turn in calling the net. Each member should call the net as part of their readiness training. Thanks to those who have volunteered to help.

To get your name on the list, send an email to tville.hamnet@gmail.com and indicate the day or days you can be net control. You can call the net from your home or if you want to call it from the pantry radio room, let us know and we will make sure you can get in.