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An IMPORTANT

LINE of COMMUNICATION



By MARTHA DUNCAN OVERBY

HERE IN WHITE COUNTY, *we have people of such diverse skills and interests.* We go through our everyday lives living in contact with just those in our circle of influence. We are most likely unaware of others with amazing interests, skills, and expertise living maybe right next door or down the street. For this article I'm talking about Amateur Radio Operators of which White County has a very active group. Another term used for this group is Ham Radio Operators. The word "ham" denotes someone with basic skill, maybe new to their craft. This just does not apply to the two gentlemen I spoke with about this pastime. Their hobby allows them to reach around the world to communicate with others, assist others to do the same, and provide much needed communications when disaster strikes. Do we realize how much we need these hobbyists?

Here's some info I found from online searches about Amateur Radio licensing:

The Federal Communication Commission (FCC) requires all amateur operators in the U.S. be licensed. There are currently 3 classes of amateur radio licenses:

1. **Technician** – all amateur privileges above 50 MHz
2. **General** – Technician privileges plus most amateur
3. **Amateur Extra** – All amateur privileges plus small exclusive sub-bands

Licensing requires passing a 35 question multi-choice exam, taken from a question study pool of approximately 400 questions. It is administered by VEC amateur volunteers for the FCC, at a fee of about \$14.00. A passing grade of 74% is required to pass.

ARRL, the national association for amateur radio, offers various license manuals in order to pass the FCC test. These study materials range from \$7.95 up to \$39.95. There is a \$15.00 fee for local Volunteer Examiner testing and \$35.00 for licensing.

Upon passing the Technician test the FCC will issue a license and a Call Sign, which is valid for 10 years and renewed without further testing.

The frequency bands that radio amateurs use are allocated by the International Telecommunications Union, which regulates all frequencies for user services.

The FCC states as of January 2021, there are 772,422 active licenses held by individuals in the United States. This hobby is enjoyed by people across all demographics, backgrounds, professions and income levels. Celebrity amateur operators have included Tim Allen, Arthur Godfrey, Barry Goldwater, Chet Atkins, Garry Shandling, Herbert Hoover Jr., Marlin Brando, Ronnie Milsap, Steve Jobs, Walter Cronkite, Joe Walsh (of the Eagles), and Jordan's King Hussein.

COMMUNICATION TECHNOLOGY has changed considerably over the last few decades. Did we ever think we would carry the capabilities of a smart phone in our pocket? In the light of current cell phone technology, one may view amateur radio as old technology. This myth could not be farther from fact. While amateur radio operators uphold technological traditions, they quickly embrace new technologies. The radio equipment available today is software defined. One of the most popular communication modes is a digital mode developed by radio amateur Dr. Joe Taylor, the 1993 recipient of the Nobel Prize in Physics. This mode allows reception of extremely weak signals, some undetectable by ear. Dr. Taylor became licensed as a teenager and his amateur radio activity created a strong interest in physics and how radio signals propagate. This led to his career and eventual discovery of the first orbiting pulsar, the basis for his Nobel Prize. He later became Dean of the Faculty at Princeton University. To grasp current amateur radio technology, think worldwide cell phone capability.

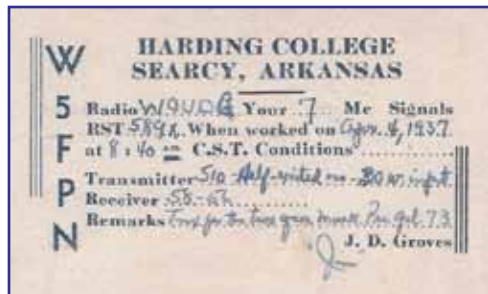
The fact is, in a disaster, all our communications services we rely on each day will be useless if the service towers and infrastructure go down. But the original technology from which our current technologies sprang will still be operable. The amateur radio operator can set up a temporary station in a vehicle or portable location without commercial power, literally anywhere, and create a much needed line of communication.

America's amateur radio operators have been there to provide service to the Red Cross and FEMA during disasters like hurricane Katrina when all other communication towers and services were out of commission.



DID YOU KNOW?

Our local Harding University has had its' own Amateur Radio club station for over 80 years, partly to communicate with missionaries.



In the aftermath of an earthquake that occurred in Haiti in January of 2010, Amateur Radio Operators provided much needed communication with the outside world when phone and internet towers were damaged.

These days those who serve in the military can stay in contact with family and friends by email and skype. Long ago and far away, we did not have the internet. When I was still in high school, I received a phone call "radio patch" from a boyfriend stationed in Korea. A radio patch is accomplished when a group of radio operators work together to relay a communication to a distance that they alone could not reach. Each operator passes the communication within the range of their radio to the next operator. An Amateur Radio patch signal goes only one way. The conversation goes like this: You speak, then you say "over." The Amateur Radio operators involved with this patch all flip their switch, and the other person can then speak.

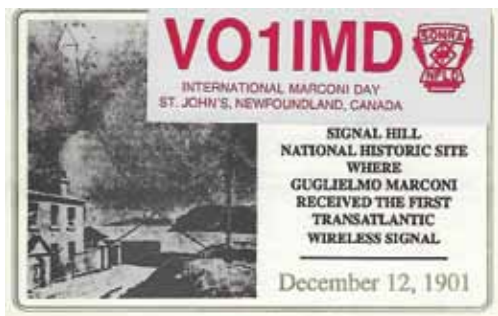
The aspects of a radio patch may sound archaic compared to the advanced internet capabilities we operate each day from our cell phone and laptops. But in some areas of the world, the radio patch or Amateur Radio signal may still be the only form of electronic communication available and is still very needed today.

Did you know our local Harding University has had its' own Amateur Radio club station for over 80 years, partly to communicate with missionaries? There are Amateur Radio Operators in 340+ countries and political entities around the world, with 12 to 15% being woman operators.

More info from www.history.com:

Italian inventor and engineer Guglielmo Marconi (1874-1937) developed, demonstrated, and marketed the first successful long-distance wireless telegraph and in 1901 broadcast the first transatlantic radio signal. He was dubbed the "Father of Radio". His company's Marconi radios ended the isolation of ocean travel and saved hundreds of lives, including all of the surviving passengers from the sinking Titanic. In 1909 he shared the Nobel Prize in Physics for his radio work with the German physicist Karl F. Braun, the inventor of the cathode ray tube.

That first TransAtlantic Wireless Signal occurring December 12, 1901 was broadcast from Poldhu, Cornwall, England, and was as powerful as Marconi's team could make it. At full power, the equipment sent out sparks a foot long. Some 2,100 miles away, atop Signal Hill in St. John's, Marconi attached an antenna first to a balloon, which blew away, and then to a kite on a 500-foot tether. On that day, December 12, 1901, in St. John's, Newfoundland, Canada, he picked up a faint three-dot sequence—the Morse Code letter "s."



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JOEL HARRISON

Joel Harrison *was raised here in White County on his family farm north of Judsonia, where he still lives today.* In the 1960s, Bald Knob was known as the strawberry capital of the world. During the strawberry harvest there would be much activity in Bald Knob with U.S. government inspectors and buyers from around the country, specifically from the north. Local schools in White County would let out in April to allow the school age kids to help with the strawberry harvest. Joel's family had sixteen acres of strawberries. When he was about thirteen his father gave him and his brothers the job of managing a few acres each of strawberries. With the money the boys made that summer, Joel's mom suggested he look into the hobby of amateur radio. Joel shared, "She had no idea she was pushing me off a cliff toward an interest that would consume my life." Amateur Radio has been Joel's hobby for all of his life.

When Joel obtained his license for amateur radio transmission, the testing was conducted by a representative of the FCC at the Federal Building in Little Rock. It sounds like it was a very intimidating process. Today any accredited club can provide testing.

All that Joel learned about electronics from his hobby lead him into a career in electronic components. He attended Foothills Technical School studying electronics and was employed by Independent Testing Laboratories here in Searcy. Joel repaired and calibrated test equipment.

In 1982 his place of employment was sold to a larger company with connections and clients that needed ultrasound imaging for piping systems. Ultrasound imaging, to put it simply, is bouncing sound off something and creating an image from the result. Soon Joel was performing ultrasound imaging on systems in nuclear power plants. He worked in this field, becoming a subject matter expert in commercial and industrial ultrasound, for forty years. When he got tired of flying around the country to service his employer's clients, he attempted to retire two years ago. Before long he was approached by the Pacific Northwest National Lab asking him to do ultrasound research in applied physics for the Nuclear Regulatory Commission. He took that position, as he can work part time from home. Joel is convinced his career was definitely steered by the ability and knowledge gained from his hobby in amateur radio.

"Joel is convinced his career was definitely steered by the ability and knowledge gained from his hobby in amateur radio."

Joel says he has made many interesting contacts over the years. Some of his most memorable have been the result of his attraction to investigating low frequency radio propagation. One of the frequency bands assigned to the amateur radio service is just above the AM broadcast band at 1800 KHz. Those familiar with AM radio know during the daytime signals don't travel very far, however at night the range will increase slightly, but still within localized limits. Listening for weak signals at low frequencies around 1800 KHz has become one of his passions. His farthest low frequency contact has been at a distance of 10,263 miles to Diego Garcia Island of the Chagos Archipelago in the Indian Ocean.

One of Joel's greatest privileges was to be elected to serve as President and Chairman of the Board of ARRL, The National Association for Amateur Radio (a voluntary position) from 2006 to 2010.

Joel tells me he can "ping" a signal off the moon, and he has communicated with the astronauts on the International Space Station. Several astronauts are licensed and amateur radio operators

Joel with his radio towers



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► *Continued on next page*

can actually make arrangements and set up equipment at a school for students to communicate with the space station astronauts. They get all ready, and have the students prepare questions for a time when the station passes overhead. On one pass, there usually is time for about four questions before the station moves out of range.

There are competitions in Radio Sport. Annually there are four major international events you can enter individually or as a club or team. The goal is to contact as many stations and countries as possible within a time frame, usually 24 to 48 hours. The scores are calculated by multiplying contacts by countries. Every four years there is an international event call the World Radio Team Championship, commonly known as the “Olympics” of amateur radio. You must qualify to participate. The top 30 people who have shown well at Radio Sport compete. Thirty similar radio stations are set up in a specific area, all with the same type of antennas and power limits so the challenge is the same for each team. Each person competing may designate a partner to help, and again they compete to see who can make the most radio contacts from the most countries and vie for a Gold, Silver or Bronze medal. Two years ago, the competition was in Germany, the next will be held in Italy. Joel held two world records in VHF radio sport competition from 1996 until 2004 and still holds one regional HF record.



“Presented to Joel Harrison, W5ZN, in appreciation for your contribution to International Space Station Program and Amateur Radio on the International Space Station (ARISS).”

LANNY ALDRICH



Lanny Aldrich, (call sign K1LEC), amateur radio operator for over 61 years.

Another active amateur radio hobbyist in White County is Lanny Aldrich of Searcy. At age fourteen Lanny joined the Civil Air Patrol where he was raised in Springfield, Vermont. His goal was to become a pilot, which required that he be licensed in amateur radio. From there he was hooked and began to focus on the Patrol’s communications radio instead. At 15 he earned his Novice license, and General Class the next year.

Having an amateur license can look good on a resume and help you get jobs in some cases. A lot of medical personnel learn amateur radio skills so that they can always have some method of communication during a major emergency situation. Lanny tells me his license helped him get a position as a ground radio operator in the Vermont Air National Guard during his last year in college. He went to Amarillo AFB, Texas, for training and spent six years with the Guard at that position.

Lanny has been a licensed amateur radio operator for 61 years and has made friends around the world. He has communicated with over 326 countries over the years and has a large binder album with QSL cards (confirmation post cards) from 318 countries.

THE COMMON ASPECT of Lanny and Joel’s stories is that their experience with Amateur Radio spurred them on to occupations involving electronics. It strikes me that this hobby is such a great opportunity to have fun learning about electronics and sound. Joel told me about Bob Heil who started as an amateur radio operator. This interest prompted him to create bigger and better speakers that had a unique sound and led him to work and travel with music groups, The Grateful Dead and The Who. Jerry Garcia of The Grateful Dead dubbed it “The Heil Sound.” Bob also invented the Heil Talk Box

which was frequently used by musicians such as Peter Frampton and Joe Walsh. Bob was the first non-musician to be inducted into the Rock and Roll Hall of Fame for his work with sound amplification, and his career all started with amateur radio.

Today, one of the most popular interests among young radio amateurs is designing computer-based microcontroller devices and circuits built around Arduino, an open-source electronics platform based on easy-to-use hardware and software. These devices are used for remote and robotic control of many current consumer electronic devices.

The local group of Amateur operators in White County (of which Joel and Lanny are both members), is the North Central Arkansas Amateur Radio Service (www.ncaars.org). They have a Facebook page under the same name. They provide communications for events like the 65 Roses bike race and this year furnished a crew to the Sycamore Trail 50K-25K Run at Allison, AR on February 13th.

In normal years before Covid, the club hosted an emergency preparedness Field Day, open to the public, in conjunction with the ARRL on the last weekend in June at Gum Springs Fire Station, which is their monthly meeting place. Usually license testing is offered at the same location. Contact Roger Gray at n5qs@ncaars.org for information on testing. Members of the club are available to mentor new amateurs.

There are many YouTube videos offering beginner info. Joel tells me the cost for a beginner amateur radio can be about \$50.00. By the way, you do not have to be licensed to listen, only to transmit. There is plenty of information available online, plus local and Facebook groups to assist in your education of this hobby. So, if you desire to reach the world from your abode here in White County, or you desire to have fun while learning some important skills, consider whether Amateur Radio should be the next leisure pursuit for you and/or your children. ♦

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