

# RAINBOW CANYONS AMATEUR RADIO CLUB NEWSLETTER



Club Website: [www.rcarc.info](http://www.rcarc.info) Number 7 – Vol. 3 March 2025

## Club Meeting Information

The RCARC meets at 7:00 p.m. on the 2<sup>nd</sup> Tuesday of each month at the Cedar City Senior Center, 489 E. 200 South. Down Stairs.

## 2025 Club Officer's

### President:

Fred Govedich  
K17TPD

1-435-559-2682

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### Vice President

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K17WEX

1-435-865-1653

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### Treasurer

Linda Shokrian  
KG7PBX

1-435-867-5914

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Dennis L. West  
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CQ, CQ, Happy Saint Patricks Day



## Presidents Message

Dear Fellow Amateur Radio Operators,

The year is off to a busy start! Thank you, Jim, for the presentation/discussion on preparing for emergencies and the Winlink activities. Lots of good information and what I hope will turn into a fun way to use Winlink. We have our next Technician class starting on March 6<sup>th</sup> so let potential students know! This is a great opportunity for people interested in getting their HAM license to become prepared! Start thinking about the club swap meet, the plan is to have it in May so start gathering radio gear that you want to sell and maybe you can find a new rig that you want!

## RCARC Club Nets:

7:00 a.m. Breakfast Net - Monday – Saturday – 146.760.  
12:30 p.m. Daily – Utah Beehive Net On 7.272.  
8:30 p.m. Tuesday's - ORCA Digital Net. Using FLDIGI, FLMSG AND FLAMP – 3.581 +, 1500/MFSK32.  
8:00 p.m. Wednesday – Panguitch Net – 147.160.  
7: pm. Thursday– Morse Code Net- This is a Zoom Meeting.  
8:30 p.m. Thursday's - WDN Digital Net. Using FLDIGI, FLMSG AND FLAMP – 3.581 +, 1500/MFSK32.  
8: p.m. Saturdays – SSTV – 449.925.  
9:00 p.m. Daily – Friendship Net – 146.760.  
11: a.m. Saturdays (Mtn. Time) QCWA – 160 Net, Utah Chapter,  
12: p.m. Freq. 7.272.  
8:00 pm. Sunday's – New Harmony Valley Net – Bumblebee Repeater. – 146.680 with a minus offset – PL 100.

## Local Repeaters:

### Iron Mountain

146.760 MHz – Tone 123.0 Hz  
146.980 MHz – Tone 100.0 Hz  
448.800 MHz – Tone 100.0 Hz  
449.500 MHz – Tone 100.0 Hz  
448.400 MHz -- Tone 100.0/FM & DMR

### Intermountain Intertie:

146.940 MHz – Tone 100.0 Frisco.  
146.800 MHz – Tone 100.0 Blow Hard  
147.200 MHz + Tone 100.0 Tod's/Hatch  
146.820 MHz – Tone 100.0 Utah Hill

### Bumblebee/New Harmony:

146.680 MHz – Tone 100.0 Hz

### Rowberry:

449.925 MHz – Tone 100.0 VHF Remote

### Dutton:

147.160 MHz + Tone 100.0 Hz.

## Save The Date

**March 11, 2025**

### RCARC Club Meeting.

7:00 pm. Cedar City Senior Center,  
489 E. 200 South. [Ron K7HDX](#) will  
present information on evacuation.

**April 8, 2025**

### RCARC Club Meeting.

7:00 pm. Cedar City Senior Center,  
489 E. 200 South. [More info to  
follow](#)

**May 13, 2025**

### RCARC Club Meeting.

7:00 pm. Cedar City Senior Center,  
489 E. 200 South. [More info to  
follow](#)

**June 10, 2025**

### RCARC Club Meeting.

7:00 pm. Cedar City Senior Center,  
489 E. 200 South. [More info to  
follow](#)

## President's Message Continued from page 1.

The bands have been really active so I encourage you all to play, share, and have fun on the radio! Don't forget that we all have strengths and weaknesses but we are all interested in radio communications and can benefit from each other. If you are interested in any aspect of HAM radio please explore the topic, experiment, and share what you have done with the group! That is what makes this such a fun hobby! Don't be shy, we are all friends here!

In service,

Fred Govedich (KI7TPD)

## Notice

RCARC Technician Class  
Scheduled for March 6, 2025  
See Flyer on Page 12



## RCARC Monthly Breakfast

**Please come join us on the first Saturday of each month at 9:00 am. for our club breakfast. We meet at the Golden Corral Buffet & Grill (in the back room), 1379 S. Main Street, Cedar City. Their menu offers an unmatched variety of quality foods from breakfast to dinner. See you there.**



Happy Birthday and  
Anniversary to those  
celebrating in March

**Happy St. Patrick's Day  
Monday March 17th**

# Breakfast & Friendship Net Awards

February 2023

Breakfast Net		Friendship Net		
First Place	Second Place	First Place	Second Place	Third Place
K2MFK - Kevin	KE8OYI - Caleb	K7HDX - Ron	KA7J - Lance	KI7LVB - Tammy
K7ZI - Dick	KK7UBC - Tommy	K7NKH - Lee	KE8OYI - Caleb	KI7LVC - Tim
KE6ZIM - Johnny	<b>Third Place</b>	K7ZI - Dick	KJ7LTQ - Brant	KK7FLL - Maddie
KG7PBX - Linda	KI7SCX - John	KI7LUM - Bruce	KK7UBC - Tommy	
KI7TPD - Fred	N7SIY - Sylvia	KI7TPD - Fred	N7SIY - Sylvia	
KI7WEX - Bonnie	WA7GVL - Paul	KI7WEX - Bonnie	W9YNK - Benjamin	
N7SND - Larry		N7WWB - Darlene	WA7GVL - Paul	
W0KLH - Kevin		W0KLH - Kevin		

## Rainbow Canyons Amateur Radio Club Treasurer Report Feb 11, 2025

Bank balance Jan 1, 2025	<b>\$3,146.95</b>
Membership NL7EL K7NKH, KC7IHE, K7VXV Johnson Family, KB3FXC, KA7J, KC6WFI, KD6HYH	+ 320.00
Expenses	
Rocky mountain Power (98 repeater elec exp)	- 22.80
3 Peaks Field Day reservation 2025	- 70.00
<b>Bank Balance Jan 31, 2025</b>	<b>\$3,374.15</b>
Feb Expenses	
Rocky Mountain Power (due 2/18/2025)	- 21.69
membership KI7LVC, KI7LVB, K7ZI, KK7WNN K8SV, KD7WIX	+70.00
Waiting for Bill for Xmas Meat expense	- ???
<b>Funds Available after 2/18/2025</b>	<b>\$ 3,422.46</b>

Submitted by  
Linda Shokrian KG7PBX  
2023 RCARC Treasurer  
435-867-5914

## RCARC Upcoming Events

**March 6, 2025** RCARC Technician Class at the Cedar City Senior Center 489 E. 200 S at 6:00 PM. Classes will run each Thursday starting a 6:00 PM. through the testing session on April 10, 2025.

**April 8, 2025** RCARC Membership Meeting at the Senior Center 489 E. 200 S. at 7:00 PM. Lower level. Presentation: **Ron K7HDX) will present information on evacuations.**

**Saturday May 3, 2025** RCARC Annual Radio Swap Meet. 9:00 AM through 12:00 or 1:00 PM. Christ the King Catholic Church 690 S. Cove Drive in the pavilion. In addition, there will be a breakfast and Go Kit Challenge. More info to follow.

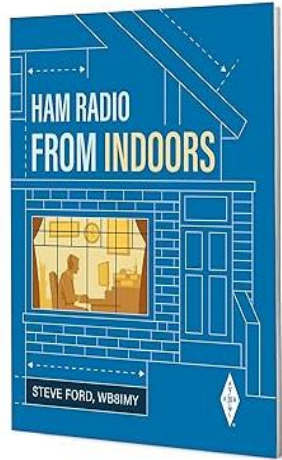
**Saturday & Sunday June 28 and 29, 2025** Summer Field Day (SFD). Mark your calendars.

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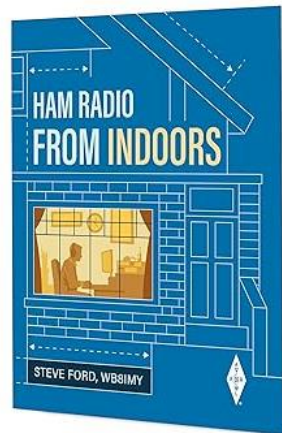
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**RCARC Book Giveaway. Books are donated by Linda Shokrian (KG7PBX)**

**Shown below is the book that will be given away at the March 11, 2025 meeting.**



**The Book below was given away to Terry West At the February 11, 2025 meeting**



**Congratulations**

**Terry  
See Picture on page 10**

## Contact Us.

### Mailing Address:

195 E. Fiddler's Canyon Road #3.  
Cedar City, Utah 84721

### Club E-mail:

[cedarcity.rcarc@gmail.com](mailto:cedarcity.rcarc@gmail.com)

### Newsletter E-mail:

[rcarcnewsletter@gmail.com](mailto:rcarcnewsletter@gmail.com)

### Website

[www.rcarc.info](http://www.rcarc.info)

### Face Book Page:

<https://www.facebook.com/groups/440325486875752/>

### To Join RCARC or Pay Dues:

Go to [www.rcarc.info](http://www.rcarc.info) select "Club Info" and then "Join " RCARC. Follow the instructions on the template.

Make check payable to RCARC.  
Please write call sign on check.

**Thank You**

### RCARC SWAP MEET COMING SOON

Start getting your excess gear ready to sell. RCARC will be hosting a Ham Radio Swap meet on Saturday May 3, 2025 at Christ the King Catholic Church, 690 Cove Drive, Cedar City in the Pavilion behind the church.

9:00 am to 12 or 1 pm.

Further Details to Follow





## Buzz's March Safety Tip(s)



### Are Ham Radio Waves Dangerous?

Ham radio antennas are generally safe, but there are some potential health risks associated with the radiofrequency (RF) energy they emit.

#### Safety

- **Low levels of RF radiation:** Low levels of RF radiation are not considered hazardous.
- **Typical operating conditions:** In typical operating conditions, such as an elevated exterior antenna, RF energy is unlikely to cause significant tissue warming.
- **Safe exposure levels:** The general public is typically exposed to RF energy levels that are far below those that cause significant heating.

#### Health risks

- **High levels of RF energy:** High levels of RF energy can cause serious heat damage to body tissues.
- **Ocular effects:** High levels of RF exposure can cause cataracts, retina damage, and cornea issues.
- **Cardiac pacemakers:** Electromagnetic fields may adversely affect the function of cardiac pacemakers.

#### Safety precautions

- Stay at least six feet away from a single antenna.
- Stay at least 10 feet away from two or more antennas.

Continued next column

### WHAT ARE "RADIOFREQUENCY" AND MICROWAVE RADIATION?

Electromagnetic radiation consists of waves of electric and magnetic energy moving together (*i.e.*, radiating) through space at the speed of light. Taken together, all forms of electromagnetic energy are referred to as the electromagnetic "spectrum." Radio waves and microwaves emitted by transmitting antennas are one form of electromagnetic energy. They are collectively referred to as "radiofrequency" or "RF" energy or radiation. Note that the term "radiation" does not mean "radioactive." Often, the terms "electromagnetic field" or "radiofrequency field" are used to indicate the presence of electromagnetic or RF energy.

The RF waves emanating from an antenna are generated by the movement of electrical charges in the antenna. Electromagnetic waves can be characterized by a wavelength and a frequency. The wavelength is the distance covered by one complete cycle of the electromagnetic wave, while the frequency is the number of electromagnetic waves passing a given point in one second. The frequency of an RF signal is usually expressed in terms of a unit called the "hertz" (abbreviated "Hz"). One Hz equals one cycle per second. One megahertz MHz equals one million cycles per second.

Different forms of electromagnetic energy are categorized by their wavelengths and frequencies. The RF part of the electromagnetic spectrum is generally defined as that part of the spectrum where electromagnetic waves have frequencies in the range of about 3 kilohertz (3 kHz) to 300 gigahertz (300 GHz). Microwaves are a specific category of radio waves that can be loosely defined as radiofrequency energy at frequencies ranging from about 1 GHz to 30 GHz.

Continued on page 6

# Are Ham Radio Waves Dangerous?

Continued from page 5

Amateur Radio is basically a safe activity. In recent years, however, there has been considerable discussion and concern about the possible hazards of electromagnetic radiation, including both RF energy and power-frequency (50-60 Hz) electromagnetic fields. To allay such concerns, the FCC set limits on the amount of RF energy people can be exposed to. Some stations now need to be evaluated to ensure they are in compliance with RF exposure limits.

As detailed in a [May 2023 QST article by Greg Lapin](#), N9GL, the rules which took effect on May 3, 2021 now require amateur radio operators to perform station evaluations. The Amateur Radio Service is no longer categorically excluded from certain aspects of the RF exposure rules, and licensees can no longer avoid performing an exposure assessment simply because they are transmitting below a given power level.

A two-year transition period was implemented to allow existing stations to make any necessary changes, but as of May 3, 2023, the transition period ends and all transmitters operating in the US are expected to comply with the exposure rules. The ARRL has on its website an [RF Exposure Calculator](#) to assist amateurs in performing station assessments.



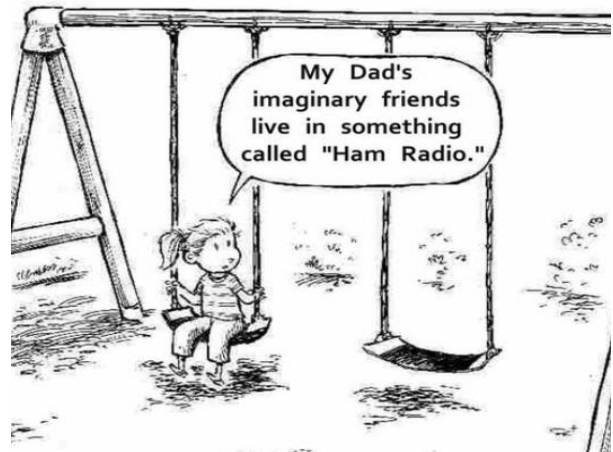
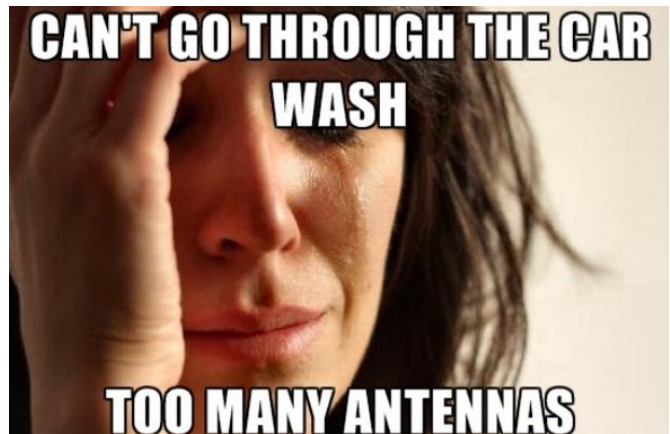
**Mar 9, 2025 - Daylight Saving Time Starts**

Sunday, March 9, 2025, 2:00:00 am clocks are turned forward 1 hour to 3:00.00 am.

**Remember to Spring Forward**



**A Little Ham Humor**





# Radio, the Phonograph and the Theatre

By HUGO GERNSBACK

**T**O THE student of history, the evolution of utilities is well understood and, as a rule, can be charted in advance.

When our only means of transportation was the horse-drawn vehicle, the railroads suddenly appeared. Immediately cries went up that the horse-drawn vehicle was doomed to meet its death. But, decidedly to the contrary, there are more horse-drawn vehicles in use today than there were when no railroads existed. In other words, the railroad has supplemented the older form of transportation and created new uses and new business for it which were not dreamt of before the advent of the steam car.

Not so many years ago, when the telegraph first appeared, it did a great business. Then the telephone came along and at once the cry went up, as usual, that in a few years the telegraph would be obliterated. As people could talk together, they certainly would not waste the necessary time to telegraph and send long messages, when the spoken word was so much cheaper. The prophets, however, were wrong, as usual, and the telegraph business today, despite the telephone, is thousands of times larger and does more business than it did before the advent of the telephone. It is just another case of one utility aiding and enlarging another.

When the bicycle first was invented, everyone hailed it, until the automobile came along. And then again the cry went up that, surely the bicycle—"which is nothing but a fad, anyway"—was doomed. As the people could ride in automobiles they certainly would not ride on bicycles. Again the prophets were wrong. As any statistician can tell you, there are today actually many times more bicycles in use than there were before the automobile. But why go on with a long list? It becomes monotonous in its sameness.

This introduction is given simply because, in 1922, the usual cry went up that people with radio sets in their homes would have no more use for the phonograph, and that the latter would soon disappear from the face of the earth.

Great was the shout that went up, three years ago when broadcasting first appeared, from all phonograph manufacturers and dealers, and their gloom was matched only by their short-sightedness. Many articles appeared in the leading journals, particularly those devoted to the phonograph interests, depicting dark and dismal views upon the future.

It is interesting to note that available statistics now show that there are more phonographs used at present than before the advent of radio, and that more records are being sold than at any time during the history of the phonograph.

**I**N THE June, 1922, issue of RADIO NEWS, the writer made the following predictions, which are interesting now, chiefly because of their fulfillment. In that issue, the writer said as follows:

"It costs money to buy phonograph records once you have the machine. It costs nothing to have all the music in the world which you desire, once you have a radio outfit. But there is no reason in the world why the two should not get along harmoniously, even as conditions are at present.

"You will no doubt find, during the next two years, that every phonograph store will be selling radio appliances. In many cities throughout the east they are already following such a plan, having been driven to it by a slump in business. The leading phonograph trade journal now has a radio section. The logical upshot of it all will be met when the phonograph interests, instead of opposing radio, open their arms and welcome it.

"This is precisely what we are coming to. The machines of the future will serve the double purpose of record-music and radio. Thus the public will be given a new incentive to buy phonographs, which incentive seems to be lacking at the present time. The more the two can be cemented together, the better

the results, not only for radio—which does not need any assistance—but certainly for the phonograph."

The preceding paragraph is interesting, because this very prediction has come true. The largest phonograph manufacturer in the country is actually making a phonograph now that has space for a radio outfit, while another very large phonograph manufacturer is equipping his product with a set made by one of the largest radio manufacturers in the country.

We may, therefore, say that the writer's prediction that the radio and phonograph industry would be welded together has become an accomplished fact.

A few weeks ago, on New Year's Day, there arrived the big event for which the entire radio industry had been waiting, namely, the advent of grand opera stars into the field of radio entertainment. John McCormack, famous concert singer, and Lucrezia Bori of the Metropolitan Opera Company, through the courtesy of the Victor Talking Machine Company, broadcast to an audience that is variously estimated as being composed of from six to eight million listeners. It is also estimated that the broadcasting of these two artists sold no less than 150,000 phonograph records of the selections they sang before the microphone. We do not believe that manufacturers of phonograph records, in their wildest dreams, before the advent of radio, ever imagined that they could sell as many records during one single occasion as they did on this one. And so it goes.

**T**HE latest ravings are from the theatre. The theatre has as yet not learned its lesson from the phonograph manufacturers, and when, during the broadcasting of the stars just mentioned, on January 1st of this year, half of the theatres in New York were empty, the theatrical magnates at once had a bad case of nerves, because they claimed that their theatres stood empty while people stayed at home and enjoyed the free radio concerts.

So far, the theatrical interests have always worked against anything connected with radio. Some of them go so far as to forbid their actors appearing before the microphone. Others, if allowed to broadcast a play, find it necessary to pay their actors double salaries if such a play is broadcast. It is about time that the theatrical interests learned that they cannot fight radio with such prehistoric weapons. The thing to do is to work with the radio interests, as the phonograph interests have found it profitable to do.

The writer has not changed his mind since 1922. In June of that year, in RADIO NEWS, page 1146, he broached the subject and said as follows:

"Of course, any one who thinks about the matter calmly must appreciate the fact that, if anything, radio certainly gives the theatre, the actors and the singers the best possible advertising medium. One surpassing their best imagination. Think of an audience of 300,000 people listening to a singer! What better advertising could there be? And some of these 300,000 people, when they get to town, as they invariably do, will wish to see and hear that singer in person. The radio audience is not always a radio audience; it frequently becomes a theatre audience as well. To think that a radio man is shut in all the year around is ludicrous.

"Even the most ardent radio fan, after listening in for five or six days in the week, will wish to go to a show on the seventh day. One of these days the theatrical interests will wake up to the fact that in radio they have the greatest possible and the very cheapest advertising medium ever available to them."

What was true in 1922 is even truer in 1925.



# RCARC February 11, 2025 Meeting Pictures



Brant (KJ7LTQ) Signing the Sign-In Sheet.



Fred (KI7TPD) leading the Pledge of Allegiance



Members waiting for the meeting to start.



Fred (KI7TPD) conducting meeting business.

## Meeting Presentation

James Moore (KJ7VEI) presented a talk and discussion on being prepared for a disaster.



Fred (KI7TPD) calling the meeting to order.



James Moore (KJ7VEI) presenting food for thought ideas to the attendees in regards to being prepared for a disaster.

Continued next column

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# Word Search

## Essential Tools for Ham Operators

S B X A F S O F T W A R E K Z  
H L S V Z H A I X U P X J X G  
S L R V W O G N K T D K K A I  
D E M R E V I E C S N A R T M  
S B T P Y U Z X Y L A O D S A  
R V L Y L P P U S R E W O P R  
O N I G A E N O H P O R C I M  
T Q F B D R E L X R R O C X A  
C R E K A E P S Z U I A C V T  
E Y M S N X K N S K B S T I S  
N X T I M K I K L L N W I F J  
N A N T E N N A E O A P J K X  
O A Y O U H C S E S D L A E X  
C E Q U I P M E N T J V A H Q  
H X U K H L P K I N W N C B I

EQUIPMENT ANTENNA TRANSCEIVER POWER SUPPLY  
SPEAKER CABLES CONNECTORS FILTERS SOFTWARE

## RCARC February 11, 2025 Meeting Pictures

Continued from page 8

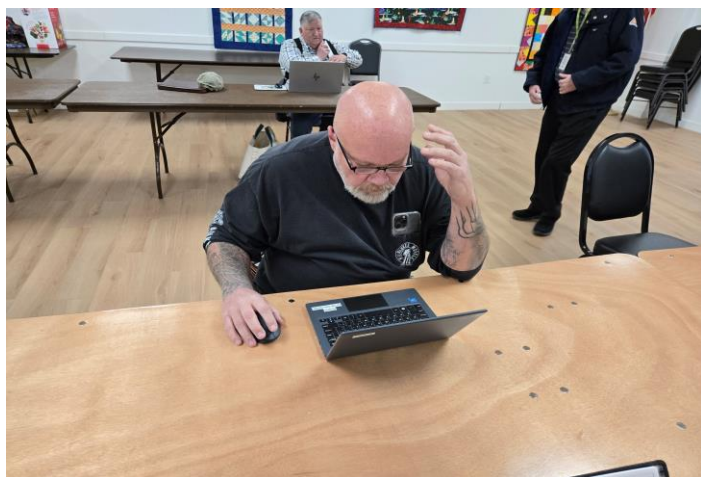


Linda Shokrian (KG7PBX) sitting presented Terry West the book she won during the book giveaway. Ham Radio From Indoors. Congratulations Terry.

### RCARC Ham Radio Testing results



Dana Bugbee looking at the camera while Lance (KA7J) sets up the PC for testing. Dana passed his Technician Class license and his new call sign is KK7ZDN).



Kevin Willion (KK7YCK) Passed his General Class Licenses Exam.

## RCARC EComm Members Meet

On February 20, 2025 Dennis (W6DLW) brought the meeting to order at 5:30 PM.

Members recited the Pledge of Allegiance.

**Meeting Program Presentation:** Gold Cross Ambulance. Jennifer & Kyle (See Pic below) provided a very thorough overview of the Gold Cross Ambulance Organization. Items such as coverage area, ambulance staffing, response times, employee training (Paramedic – EMT etc.) and much more.

### Meeting Information:

#### EComm and Antenna Trailer Update

Dennis gave the group an update on both the EComm and Antenna Trailers. Both trailers over the last year have been inventoried, cleaned with some items being replaced as well as a few new items acquired creating a safer environment when working around the trailers.

A work party has been scheduled for Saturday March 1, 2025 at the Iron County Emergency Operations Center (EOC) at 1302 Kitty Hawk Drive at 10:30 am. to replace the current die pole cord with paracord and install a new end fed antenna on the antenna trailer.

#### Future Meeting Presentations:

At the January 30, 2025 RCARC EComm Board Meeting the group discussed types of presentations for the Bi-monthly membership meetings. Throughout the rest of this year, we hope to schedule Life Flight, Civil Air patrol, Iron County Search and Rescue and the Cedar City Fire Department for presentations.

#### Mesh Network:

Ron (K7HDX) and James (KJ7VEI) are working with several other club members to set up an Arden Network in Iron County. ARDEN is an Amateur Radio Emergency Data Network. ARDEN is a high-speed data network built with Amateur Radio Operators and Emergency Communications Infrastructure in mind.

Continued on page 13



## **Amateur Radio Emergency Preparedness Act Re-Introduced**

U.S. Senators Roger Wicker, R-Miss., and Richard Blumenthal, D-Conn., and Representatives August Pfluger, R-Tex., and Joe Courtney, D-Conn., announced their joint re-introduction of legislation in the Senate and House to restore the right of amateur radio operators to install the antennas necessary to serve their communities.

Homeowner association rules often prevent amateur radio operators from installing antennas at their homes even though amateur radio has proven to be essential in emergencies and natural disasters such as hurricanes when other means of communication fail.

“Mississippians should have access to every possible means of warning for natural disasters, including amateur radio operators. In an emergency, those warnings can mean the difference between life and death,” Senator Wicker said. “The Amateur Radio Emergency Preparedness Act would remove unnecessary roadblocks that could help keep communities safe during emergencies like tornadoes, hurricanes, and fires.”

“When disaster strikes, amateur radio operators provide vital, often life-saving, information, which shouldn’t be hindered by prohibitive rules or confusing approval processes. The Amateur Radio Emergency Preparedness Act eliminates obstacles for ham radio enthusiasts, allowing them to continue their communications and serve their communities in the face of emergencies,” said Senator Blumenthal.

“Natural disasters and other emergency situations that hinder our regular lines of communication are unfortunately unavoidable, which is why we must bolster our emergency preparedness by removing the barriers amateur radio operators often run into when installing antennas.

Amateur radio plays a vital role in public safety by delivering critical information to people at all times. My district is home to dozens of amateur radio operators ready to volunteer in the event of an emergency, and I am proud to lead this legislation,” said Congressman August Pfluger.

“As we know from recent natural disasters, amateur radio operators in Connecticut can be a critical component of disaster response and emergency management. It is in our communities’ best interest that we give them the capabilities to operate at the highest level, and with the re-introduction of this bill, we’ve taken a strong step in that direction,” said Congressman Courtney.

### **Background**

The Amateur Radio Emergency Preparedness Act of 2025 (H.R. 1094 and S. 459) would require homeowner associations to accommodate the needs of FCC-licensed amateur radio operators by prohibiting the enforcement of private land use restrictions that ban, prevent, or require the approval of the installation or use of amateur radio station antennas. Homeowner associations have often prevented installation and use of such antennas through private land use restrictions. This has hindered voluntary training for emergency situations and blocked access to necessary communications when disaster strikes.

Among other provisions, this legislation would prohibit homeowner association rules that would prevent or ban amateur radio antennas; specify an approval process for installing amateur radio antennas; provide a federal private right of action to amateur radio operators in disputed cases.

On behalf of America’s amateur radio licensees, Rick Roderick, K5UR, the President of The American Radio Relay League, re-confirmed the ARRL’s full support for the passage of the Amateur Radio Emergency Preparedness Act of 2025 and extended his thanks and appreciation to Senators Wicker and Blumenthal and Congressmen Pfluger and Courtney for their unflagging leadership of the bi-partisan effort to support and protect the rights of all amateur radio operators.

**Continued next column**

[Read the text of the House version.](#)

The Rainbow Canyons Amateur Radio Club (RCARC)  
is Sponsoring an Amateur Radio

# Technician Class

Beginner Level for Ham Radio

Dates: Thursdays – March 6, 13, 20, 27 and April 3, 2025  
with the test, Thursday April 10, 2025  
Time: 6:00 pm – 9:00 pm

Where: Cedar City Senior Center  
489 E 200 South, Cedar City, UT 84720

Class Cost: Free\*

Study Manual: Free Download

[www.ad7fo.com/training.html](http://www.ad7fo.com/training.html)

Click on the Technician Syllabus (the green button) to go to the download page.  
**Please bring to class**

This class will be presented live, in person at Cedar City Senior Center.  
You may attend however fits your schedule but must be present in person for testing on April 10<sup>th</sup>. If you can not make the 10<sup>th</sup>, other arrangements can be made.



Contact to register:

Linda Shokrian KG7PBX  
435-867-5914 or  
email: [lgshokriangmail.com](mailto:lgshokriangmail.com)

\*While the class is Free,  
there is a \$15.00 ARRL Test Fee  
and when you pass the exam, the  
FCC requires a \$35.00 to issue a License Fee.



# RCARC EComm Members Meet

Continued from Page 10

Several locations in Iron County have been identified as Arden Backbone sites. 3 peaks, Cedar Mountain, Bumblebee and Red Hills. More to follow as we move forward.

## Winlink:

James Moore (KJ7VEI) provided an update on Winlink training. If you are interested in learning how to use the Winlink software you can join the Winlink Training Group. The training group provides easy Weekly exercises to help you improve your skills. Access the Winlink Training Group at the following URL:

[www.trainingecommtools.org](http://www.trainingecommtools.org) fill out the registration form and you are on your way. If you need help installing the Winlink program on your PC contact James (KJ7VEI) or Ron (K7HDX).

## Radiation Meter Refresher Training:

A refresher training class will be scheduled soon. After the training those in attendance will participate in a meter reading exercise net. More to follow.

## Yearly Exercise:

Either in late Spring or early Summer the EComm Group will be asked to participate in a yearly exercise. The exercise type has yet to be determined. The Board is working with Iron County Emergency Management to identify a scenario.

Next meeting is April 17, 2025 at 5:30 pm. Cedar City Heritage Center upstairs.

See Pic's.



James Moore (KJ7VEI) discussing the Winlink Training group and how to access weekly Winlink training.



Ron (K7HDX) presenting and discussing the ARDEN Mesh Net Work with the meeting attendees.



George Colson (Iron County Emergency Manager) addressing the group.



Jennifer and Kyle Gold Cross Ambulance giving their presentation. **Continued next column**

## Rig Expert's Administrative Office Destroyed in Russian Missile Attack — Production Remains Intact

On February 12, 2025, Rig Expert's administrative office, in Kyiv, Ukraine, was destroyed by a Russian ballistic missile. All employees are reported to be safe.



[Photo from RigExpert.com website]

Rig Expert is a leading manufacturer of antenna and cable analyzers and officials said they are committed to restoring operations as soon as possible.

“Our top priority is the safety of our team and the continuity of our operations,” said Ashot Andeev, Chief Executive Officer. “While our administrative office is in ruins, our production facilities survived, allowing us to continue serving our customers and partners.”

The company is working to minimize delays and fulfill its commitments while maintaining customer support operations. End



## Southern California Fire Responses

As firestorms across Southern California continued to threaten millions of residents, trained amateur radio operators served critical volunteer roles to help officials spot fires before they get out of control. Dry conditions and wind gusts of up to 100 miles per hour have fueled days of devastating wildfires. Entire neighborhoods have been leveled by infernos.

The Eaton fire burned to the top of Mount Wilson, a critical logistical post for broadcast radio and television stations, as well as communications across the Southland. Federal agencies, air traffic control, local emergency responders, radio amateurs, and others all share tower space on the mountain.

While the main fires burned north and northwest of the central section of Los Angeles, just to the south, hams stood watch. [Orange County Fire Watch \(OCFW\)](#) is a program locally organized by the Orange County Parks Department and the Irvine Conservancy.

During severe fire weather, volunteers go to preassigned locations within parks and open spaces to report conditions. Many of them are hams, using the amateur radio bands to fill in mobile network weak zones.

[ARRL National Instructor Gordon West, WB6NOA](#), was among the deployed volunteers. He said hams were stepping up. “We were all over the [ARRL Orange Section](#) on hilltops, reporting the wind and humidity, ash seen coming down, scanning for spot fires, smoke from the LA fires, guest activity at the parks, and being a presence at trailheads with reflective vests and vehicle signs indicating Fire Watch,” he said.

Ray Hutchinson, AE6H, is a retired firefighter who serves as the chief radio officer for Fire Watch. He says local clubs are key to providing the needed RF infrastructure.

**Continued on page 16**



## RCARC February 1, 2025 Breakfast Pictures



John (KI7SCX) and Pat Higley posing for the camera while having breakfast.



Shandra (KK7CTI) and Husband enjoying breakfast.



Bonnie (KI7WEX) posing for the camera.

**Continued next column**



Ron (K7HDX) front and James (KJ7VEI) in conversation.



Sylvia (N7SYI) arriving at breakfast with a friend.



Ron (K7HDX) Paul (WA7GVL) right and Fred (KI7TPD) in conversation.

**Continued on page 17**



# Southern California Fire Responses

Continued from page 14

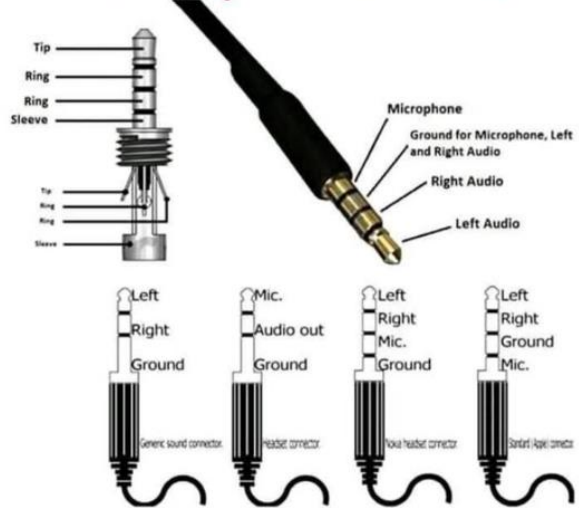
“Our local club, the [South Orange Amateur Radio Association](#) (SOARA), an ARRL Special Service Club, provides linked 2-meter and 70-centimeter repeaters: one high level and one coastal, for use by OCFW hams during deployments. There is a formal OCFW Net Control Station (NCS) for the entirety of these events,” he said. Radio amateurs were also ready and able to serve at evacuation centers, providing support as needed.

Members of ARRL Headquarters staff were in touch with ARRL volunteers and other ham radio groups around the affected area, offering material support for any activations. “It has been a busy start to the year for ham volunteers,” said ARRL Public Relations and Outreach Manager Sierra Harrop, W5DX. “Whether it’s firestorms or ice storms or any other need, ARRL volunteers selflessly serve their communities. We’re mindful that large-scale events like this impact the hams who are actively serving,” she said.

ARRL Director of Emergency Management Josh Johnston, KE5MHV, was on calls with the Federal Emergency Management Agency (FEMA) and other served agencies, offering ARRL resources. Efforts are being coordinated locally by [Emergency Network Los Angeles \(ENLA\)](#), the Voluntary Organizations Active in Disaster (VOAD) group in Southern California.

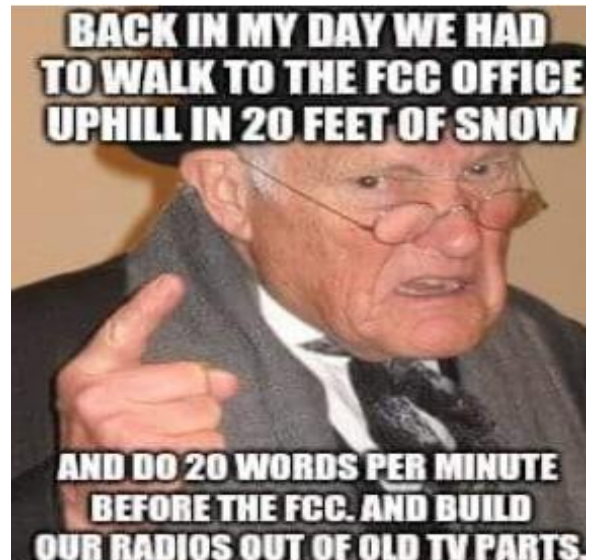
Johnston urged hams in the affected regions to be ready to take care of themselves and their families before needing to deploy. He pointed to resources shared by ARES during National Preparedness Month. “These are stressful events for everyone, and being a ham volunteer is really second to keeping yourself and your family safe,” said Johnston. End

## Microphone Jack



FYI, just in case you wanted to know.

## More Ham Humor





# Training the Next Generation of Net Controllers

02/07/2025

Amateur radio operators are known for their desire and unique ability to provide public service through communications. Whether activated for a severe weather event or a local event such as a marathon or bike ride, the utility value and versatility of the Amateur Radio Service is enjoyed by communities around the country. One critical aspect of coordinating the communications is the role of net controller. These key volunteers bring order to chaos and flow to information. It is a specialized skill that requires development, practice, and training.

On February 1, [Connecticut volunteers](#) in the [Amateur Radio Emergency Service® \(ARES®\)](#) held a training session. The session drew dozens of radio amateurs from around the state to a packed room inside the Newington Volunteer Fire Department. The half-day course, led by ARRL Connecticut Section Manager Douglas Sharafanowich, WA1SFH, was dynamic and participatory.

Georg Papp, K1YBO, is a controller and Assistant Net Manager for the Western Connecticut (WESCONN) Traffic Net, a part of the [ARRL® National Traffic System® \(NTS®\)](#). It serves to flow messages into, out of, and throughout the state and to serve as a training net. He was excited to see the high number of attendees. “We always encourage new people to step up to volunteer for the net, and this helps provide a pathway for them,” he said.

In the training, Sharafanowich highlighted examples of needing a robust group of trained Net Control Station (NCS) operators. “When a ‘Black Sky’ event takes place, it is rarely limited to an 8-hour shift. We will need trained NCS operators not only to provide for initial shift coverage, but also, we will need relief NCS operators to cover following shifts,” he said.

If you’d like to get involved as a net control station, talk with your local ARRL Emergency Coordinator or District Emergency Coordinator to express interest. You may also find NTS net resources in your area at [nts2.arrl.org](https://nts2.arrl.org).



# RCARC February 1, 2025 Breakfast Pictures

Continued from page 15



In forefront is Dick (K7ZI) and Wife Susan. To rear is Larry (N7SND) and Anita is Wife. To left is Brody (K7VXV) and Kevin (W0KLH).



George (AL7BX) and Linda (KG7PBX) with Brody (K7VXV) looking over shoulder.



R to L Tim (K17LVC), Tammy (K17LVC)

# HAM RADIO FOR NON-TECHIES

<https://hamradiofornon-techies.com>

## CHEAT SHEET

### US HAM Radio Frequencies

160M - 1.8 - 2 MHz	17M - 18.068 - 18.168 MHz
80M - 3.5 - 4 MHz	15M - 21 - 21.45 MHz
60M - 5MHz region	12M - 24.89 - 24.99 MHz
40M - 7.0 - 7.3MHz	10M - 28 - 29.7 MHz
30M - 10.1 - 10.15 MHz	2M - 144 - 148 MHz
20M - 14.0 - 14.35 MHz	70CM - 420 - 450 MHz

### Frequency Formula

$$\lambda = 3.28 (300 / f)$$

$\lambda$  = Wavelength in Feet  
f = Frequency in MHz

### Antenna Length

$$l = 468 / f$$

l = Length of Antenna in Feet  
f = Frequency in MHz  
Formula for 1/2 Wave Dipole

### Digital Mobile Radio (DMR)

#### Common Talkgroups

TGroup ID	Name
1	Worldwide
3	North America
113	English 1 (NW Conversations)
123	English 2 (NW Conversations)
310	TACS0 (US Conversations)
311	TACS1 (US Conversations)
3100	DCI Bridge
3100-3177	Regional Talkgroups (See Map)

**DMR Simplex Frequencies**  
441.000 MHz / 446.500 MHz  
433.450 MHz / 438.700 MHz  
146.510 MHz



**DMR Simplex Settings**  
TG 99 / CallCode 1 / Admit Always  
InCall Criteria: TX or Always

### United States Callsign Areas



### Automatic Packet Reporting System (APRS)

#### APRS Frequency Guide (VHF/UHF)

Name	Frequency	Voice Alert
United States, North America	144.3900	100.0
Argentina	144.3900	
Australia	145.1750	91.5
	439.8000	91.5
Europe, Finland, Ireland, Spain	144.8000	138.5
Japan	144.8400	
New Zealand	144.5750	
Norway	144.8000	121.0
Russia	144.8000	
France	144.8000	138.5
	432.5000	138.5
	439.7000	138.5
Netherlands	430.9125	
New Zealand	432.5750	
USA - Puget Sound, WA	441.1750	
USA - Kansas, Missouri	446.1750	
USA Nationwide Proposed	445.9250	

#### General Information

Default speed for APRS in VHF or UHF is 1200 baud except for Russia which is 9600 baud.

A given antenna installation and transmitter power will produce about 1/2 to 1/3 the RELIABLE range an APRS packet that it produces on FM voice.

#### APRS on HF

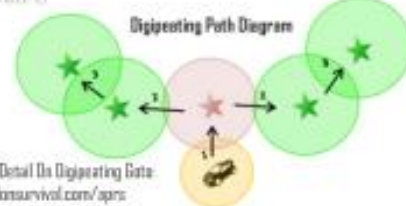
HF APRS uses Frequency Shift Keying (FSK) with a shift of 200Hz at 300 bits per second. Due to the differences in audio tones used by various TNCs, the HF carrier frequency depends on the TNC.

Band	Mark Frequency	Space Frequency
40 Meters	7.034,400 kHz	7.034,200 kHz
30 Meters	10.149,400 kHz	10.149,200 kHz

#### Digipeeting Paths and Operation

This example uses a path setting with three digipeater hops (WIDE-1-WIDE-2).

- 1) Mobile APRS Unit transmits APRS packet to his Home FH-in Repeater (red star). At this point the WIDE-1 has been used (WIDE-1-WIDE-2).
- 2) The APRS packet is digipeated by the FH-in and is received by two of the wide high-level dig's (green star). At this point one of the WIDE-2 hops is used (WIDE-1-WIDE-2-0).
- 3) The APRS packet is digipeated again by the wide digpeaters, it is heard by another group of wide dig's. They will transmit the packet again. At this point the last WIDE-2 hop is used. Any other WIDE dig's who receive this packet will no longer repeat it (WIDE-1-WIDE-2).



For More Detail On Digipeating Data  
<http://talonsurvival.com/aprs>

### Simplex and Duplex Operation

#### USA Calling Channel Frequencies (FM)

Band	Frequency	Tone
2 Meter	146.520 MHz	None
70 Centimeter	446.000 MHz	None
8 Meter	52.525 MHz	None
33 Centimeter	909.500 MHz	None
23 Centimeter	1294.500 MHz	None

#### Calling Channel Etiquette

Calling frequencies are for making initial contact. Once you make contact with another operator, move off of the channel to another frequency to keep it open for others.

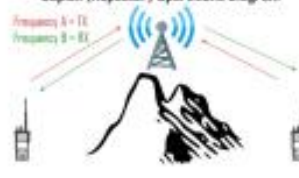
#### Standard Repeater Offsets

Use to program a radio to talk on a repeater when you only know the receive frequency.

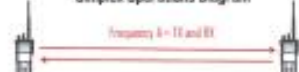
Frequency	Offset
144-147 MHz	-0.600 MHz
147-148 MHz	+0.600 MHz
440-445 MHz	-5 MHz
447-450 MHz	-5 MHz

Example: A repeater with 146.540 MHz output (the receive frequency) would have a -0.600 MHz standard offset. Moving the transmit frequency to talk into the repeater is 146.940 MHz.

#### Duplex (Repeater) Operations Diagram



#### Simplex Operations Diagram







**Attention all  
RCARC Club  
Members.  
Check out the  
RCARC Calendar**

To access the calendar for nets, meetings, training classes and other information ref. dates, times and location please see the calendar.

### **To access the calendar:**

1. Go to your favorite browser and type in **rcarc.info**.
2. When the home page comes up select **club info** from the menu on the left side of screen.
3. This will take you to the club info menu. Select **calendar**. The calendar page will then open.
4. As you browse through the calendar and there is something that you would like more info on place your cursor on the time listed for that event and left click just once. This will then bring up a second small window that will give you more detailed information if available.

If you have something you would like added to the calendar, please let me know. Editor.



## **A Littler Humor**

**Two elderly hams had been friends for many decades. Over the years they had shared all kinds of activities and adventures on the ham bands.**

**Lately, their activitiers have been limited to meeting a few times a week to play cards.**

**One day they were playing cards when one looked at the other and said, "Now don't get mad at me, I know we've been friends for a long time, but I just can't think of your name and your call.! I've thought and thought, but I can't remember them. Please tell me what they are"**

**His friend glared at him. For at least three minutes he just stared and glared at the gray haired old man. Finally he said, How soon do you need to know?**



**A ham is driving up a steep, narrow mountain road, his antennas flopping in the breeze and flopping into the other lane. A YL is driving down the same road.**

**As they pass each other, the YL narrowly missed the antennas and leans out of the window and yells...PIG! The ham immediately leans out of his window and replies, "! #\*%#!!"**

**They each continue on their way, and as the man rounds the next corner, he crashes into a pig in the middle of the road.**

**If hams would only listen!**

# US Amateur Radio Bands

Operator license classes: E = Amateur Extra A = Advanced G = General T = Technician N = Novice  
 CW operation is permitted throughout all amateur bands. Except as noted, all frequencies are in megahertz (MHz).

■ = RTTY, data, phone, image   
 ■ = USB phone, RTTY, data and CW   
 ■ = RTTY and data   
 ■ = phone and image  
■ = SSB phone   
 ☰ = CW only

## LF – Low Frequency band

**2200 Meters (135 kHz) E,A,G**  
**1 W EIRP maximum**



Amateurs wishing to operate on 2200 or 630 meters must first register with the Utilities Technology Council online at <https://utc.org/pic-database-amateur-notification-process/>. You need only register once for each band.

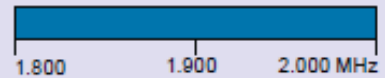
## MF – Medium Frequency bands

**630 Meters (472 kHz) E,A,G**

5 W EIRP max, except in Alaska within 496 miles of Russia where the limit is 1 W EIRP

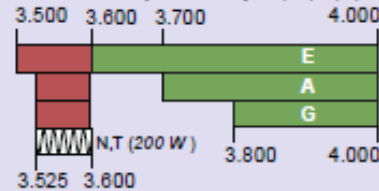


**160 Meters (1.8 MHz) E,A,G**

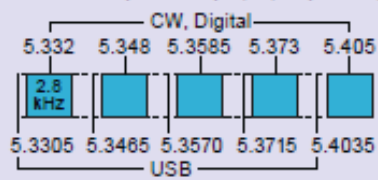


## HF – High Frequency bands

**80 Meters (3.5 MHz) E,A,G,T,N**

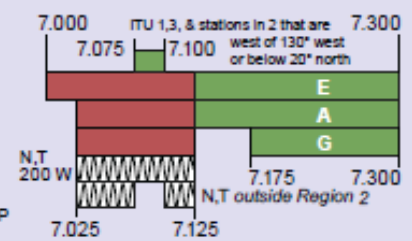


**60 Meters (5.3 MHz) E, A, G (100 W)**

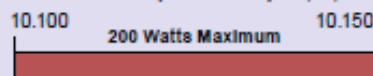


General, Advanced, and Extra licensees may operate on a secondary basis with a maximum ERP of 100 W (relative to a half-wave dipole antenna).

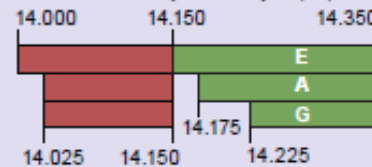
**40 Meters (7 MHz) E,A,G,T,N**



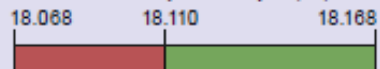
**30 Meters (10.1 MHz) E,A,G**



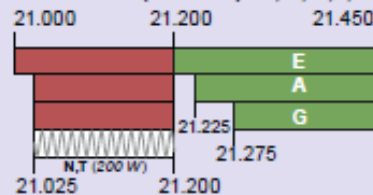
**20 Meters (14 MHz) E,A,G**



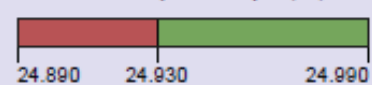
**17 Meters (18 MHz) E,A,G**



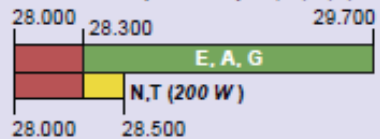
**15 Meters (21 MHz) E,A,G,T,N**



**12 Meters (24 MHz) E,A,G**

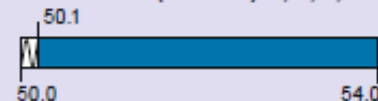


**10 Meters (28 MHz) E,A,G,T,N**

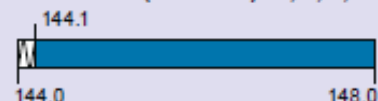


## VHF – Very High Frequency bands

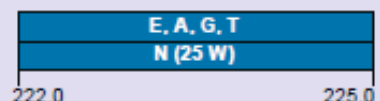
**6 Meters (50 MHz) E,A,G,T**



**2 Meters (144 MHz) E,A,G,T**



**1.25 Meters (222 MHz) E,A,G,T,N**



## UHF – Ultra High Frequency bands

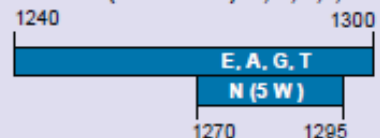
**70 cm (420 MHz) E,A,G,T**



**33 cm (902 MHz) E,A,G,T**



**23 cm (1240 MHz) E,A,G,T,N**



## SHF&EHF – Super and Extremely High Frequency bands

All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	3400-3450 MHz	10.0-10.5 GHz	47.0-47.2 GHz	122.25-123.0 GHz	241-250 GHz
2390-2450 MHz	5650-5925 MHz	24.0-24.25 GHz	76.0-81.0 GHz	134-141 GHz	All above 275 GHz

See [www.arrl.org/band-plan](http://www.arrl.org/band-plan) for detailed band plans.

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 OTAbands rev. 07/25/2024



# DIY 2 Meter Tape Measure Yagi Antenna

## Instructions 2 meter Tape Measure Yagi Antenna

### What you will need

#### Parts List

1 25 foot 1 inch wide steel tape measure (to make into the antenna elements)  
1 10 foot piece of 3/4 inch Schedule 40 PVC Tube  
2 3/4 inch PVC Cross connectors  
2 3/4 inch PVC T connector  
6 3/4 to 1 1/2 inch stainless Hose Clamps  
1 5 inch piece of 14 ga wire  
1 length of coax (RG-58, RG-8X, etc.), approx 6-8 foot  
1 connector to connect to your radio (N, BNC, SMA, PL-259, etc. depending on your radio)  
Solder and Flux  
Electrical Tape

#### Tools

Soldering Iron  
Tin Snips  
Wire Cutter  
Screw driver or nut driver  
PVC cutter or fine tooth saw  
Sand paper or Dremel tool with sanding disk  
Ruler or tape measure (not to cut up)  
Antenna analyzer/SWR meter

### Construction of antenna

**Step 1:** Cut three pieces of PVC tubing. Two will be for the support boom of the antenna with the first 11 1/4 inches long and the second 6 7/8 inches long. The third will be the handle and you can cut this long or short and you can add a handle grip if you wish.

**Step 2:** Once you have cut your pieces you will fit the pieces together with the cross and T connectors. You can dry fit or use PVC cement to fix your pieces together. The distance between the first cross and the middle cross must be 8 inches and the distance between the middle cross and the T has to be 12 1/2 inches. Measurements are taken from the center points of the connectors.

**Step 3:** Cut the tape measure into four pieces. The reflector piece will be 41 3/8 inches, the director will be 35 1/8 inches. The driven element is made up of two pieces, so cut two 17 3/4 inches long pieces.

**Step 4:** For the two driven element pieces, sand or grind away the paint from one end. This is point where the coax and hairpin match will be soldered. Apply flux and use your soldering iron to tin this area. It's easier to tin this area now before attaching the elements to the support boom.

**Step 5:** Assemble the director (shorter element at front) and reflector (longer element at the back) elements. Making sure the elements are centered and then use hose clamps to attach the elements to the Cross and T connectors.

**Step 6:** Assemble the driven elements (middle element). Using the hose clamps, attach each half of the driven elements to the Cross connector. Leave a one inch gap between the two pieces.

Continued on page 22

# DIY 2 Meter Tape Measure Yagi Antenna

Continued from page 21

**Step 7:** Attach the hairpin match using a 5 inch piece of wire with 1/4 inch stripped off each end. Bend the wire so it is in a U shape with a 3/4 inch gap. Solder this to the tinned ends of the driven element.

**Step 8:** Attach your coax. Remove the insulation and shielding so that you have each end separated so that you can attach them to the ends of the driven element. You will solder these two ends to the driven element of the antenna. If you want your coax to run down the PVC you can drill a hole in your boom and thread the coax inside the pipe or you can attach your coax to the outside of the boom using cable ties or electrical tape.

**Tuning:** The antenna should be resonant at around 146.5 Mhz. You can use your antenna as a receive only antenna (fox hunting) without any further tuning. If you plan on using your antenna for transmitting you will need to tune it by adjusting the gap between two parts of the driven element. You will need an antenna analyzer/SWR meter to do this.

