

Central Ohio Radio Club Tech Net Presentation I got my license – now what?

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N8RRB



Central Ohio Radio Club Upcoming Potluck Dates

Sunday June 7, 2026

Sunday October 11, 2026

Potlucks held at the Genoa Township Hall
5111 South Old 3C Road, Westerville, OH

Guest speaker suggestions: send to
president@corc.us

CORC Tech Net – Season 15

Date/Time	Location	Topic
Tuesday 3/31 @ 1830	Columbus Metropolitan Library – Whetstone Branch main meeting room	I got my license – now what? Information for new hams, soon-to-be new hams, and seasoned hams getting back into the hobby
Sunday 4/12 @ 1930	146.760 W8AIC/R	Roundtable
Sunday 4/26 @ 1930	146.760 W8AIC/R	Hamfests and the Hamvention at Xenia

CORC Tech Net

Subject Matter Experts Wanted!

You don't need to know everything, you
just need to know enough about YOUR
topic!

technet@corc.us

Outline

- Introduction
- Overview / Objective
- Equipment Considerations
- Operating Procedures
- Repeater Operation
- Activities
- Events and Contests
- Clubs and Organizations
- Upgrading

The “Standard Disclaimers”

- This presentation is one person’s view on the topic based on knowledge gained through past experience
- This is a high-level overview on the topic edited for brevity
- Information gathered has been researched for accuracy and is assumed to be true
- **You are responsible for operating in a legal manner according to your license privileges**

Objectives

Give a better understanding about operating procedures, equipment usage, and what you can do with your license

Give some tips and information to make you a better operator

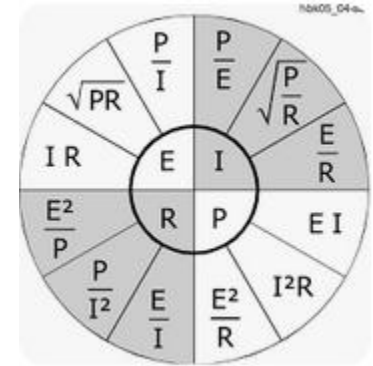
Give an opportunity to ask those questions you were afraid to ask over the air!

Brief Introduction

- Licensed in 1992 as No-Code Tech; currently General
- My “Elmers”: Joe N5USR, Joe W8IEN/SK, Andy AB8ER/SK
- First radio interest: AM long distance listening (DX)
- Shortwave, scanner listening



I Confess...



- I am not a “Techie!”
- I have never built a radio or other piece of radio equipment
- I have never built an antenna (by myself)

$L_T = L_1 + L_2 + L_3$	$\frac{1}{L_T} = \frac{1}{L_1} + \frac{1}{L_2}$	$X_L = 2\pi fL$
$Z = \sqrt{R^2 + X^2}$	$V_T = \sqrt{V_R^2 + V_C^2}$ (or V_L^2)	$X_C = \frac{1}{2\pi fC}$
$f = \frac{1}{2\pi\sqrt{LC}}$	$T = \frac{1}{f}$	$\tau = CR$
$Q = \frac{2\pi fL}{R}$ or $\frac{1}{2\pi fCR}$	$Q = \frac{f_c}{f_U - F_L} = \frac{\text{centre frequency}}{\text{bandwidth}}$	$R_D = \frac{L}{CR}$

BUT...

$$\begin{aligned} \nabla \cdot \mathbf{D} &= \rho \\ \nabla \cdot \mathbf{B} &= 0 \\ \nabla \times \mathbf{E} &= -\frac{\partial \mathbf{B}}{\partial t} \\ \nabla \times \mathbf{H} &= \frac{\partial \mathbf{D}}{\partial t} + \mathbf{J} \end{aligned}$$

- I am always learning, and willing to learn

$\frac{P_{\text{output}}}{P_{\text{input}}}$	$10 \log \frac{P_{\text{output}}}{P_{\text{input}}}$	$\frac{P_{\text{output}}}{P_{\text{input}}}$	$10 \log \frac{P_{\text{output}}}{P_{\text{input}}}$
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Equipment Considerations



Photo Source: <http://www.universal-radio.com>

Building Your First Station

The complete station consists of:

- Radio (transceiver)
- Antenna
- Power Source

These components could be separate or integrated together.

Radio Types

HT (Handie-Talkie)

- A complete station in your hand!
- Ruggedness varies by model and maker

Mobile

- More permanent but still portable (vehicle or base station)
- Overall usually very rugged
- Must supply antenna and power source

Base

- Lots of features; can be very complex to operate
- Power ranges: 1 - 200 watts
- Must supply antenna and power source

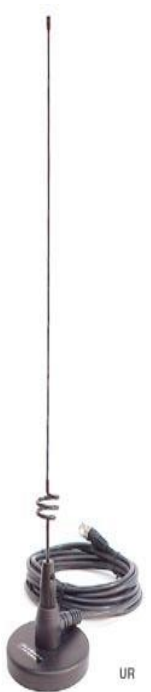
Purchasing a Radio

Select a radio which fits your primary use for it.

- **Just want to get started: VHF/UHF Handie-Talkie (HT)**
- Weather Spotter: VHF/UHF mobile radio
- Public Service: VHF/UHF HT and/or mobile radio
- DX, worked all states, countries, grid squares, satellite tracking: base all-mode radio (VHF/UHF/HF)

Antennas

- Used to radiate radio frequency (RF) power from the radio
- Designs range from the very simple to the very complex
- HTs: Antenna comes with radio (**Tip:** Buy an aftermarket HT antenna to replace what came with the radio)
- Mobile: $1/4 \lambda$ antenna is sufficient
- Base station consideration: longer feedline run + higher frequency = more signal loss
- Buy or build your own!



Antennas – Safety Info

- All hams are required to calculate their station RF exposure
- <https://www.arrl.org/rf-exposure-calculator>
- HT Use: limit the transmit time and the use of high power (levels greater than 3-5 Watts for VHF & UHF)
- Long transmit periods should be avoided (also good operating practice)



Power Source



- Batteries
 - HT: comes with battery, aftermarket options available
 - Mobile: wire directly to car battery if possible
- Power Supplies: mobile/base station
- Alternate Sources: solar, battery backup
- **Tip 1:** Buy extra batteries for your HT (and charge them) to always be “on the air”
- **Tip 2:** Use sealed deep cycle batteries for standby backup power (car batteries are not designed for this application)
- **Tip 3:** Use a battery tender to keep deep cycle backup batteries charged



Operating Procedures

Operating Procedures

A Definition

The standardized, courteous, and legal practices used by amateur radio operators to ensure effective, interference-free, and respectful communication. (Google AI)

Guidelines:

- **Listen first!**
- Familiarize yourself with standard protocols
- Understand that you can be heard by many
- A single thought per transmission

Operating Procedures

Guidelines (Continued):

- Observe all FCC Part 97 rules
- ID at least every 10 minutes
- State callsign clearly; use standard phonetics when needed or if requested
- Leave a few seconds between transmissions to allow for more urgent radio traffic

Operating Procedures

What do we (not) talk about???

The Linus van Pelt Rule:

"There are three things I've learned never to discuss with people, religion, politics, and the Great Pumpkin." - Linus van Pelt

Topics: radios, antennas, computers, the weather, traffic, trains, cars, trucks, airplanes, projects, pets, pet projects, gardening, sports, etc.

Guidelines:

- Follow the Linus van Pelt Rule
- Keep it "G Rated"
- Avoid slang/colloquialisms that may offend or be construed as offensive
- If you are uncomfortable with the content of the conversation, state your callsign and end the conversation

Operating Procedures

Ham “Pet Peeves”

- Not Utilizing “ham speak”

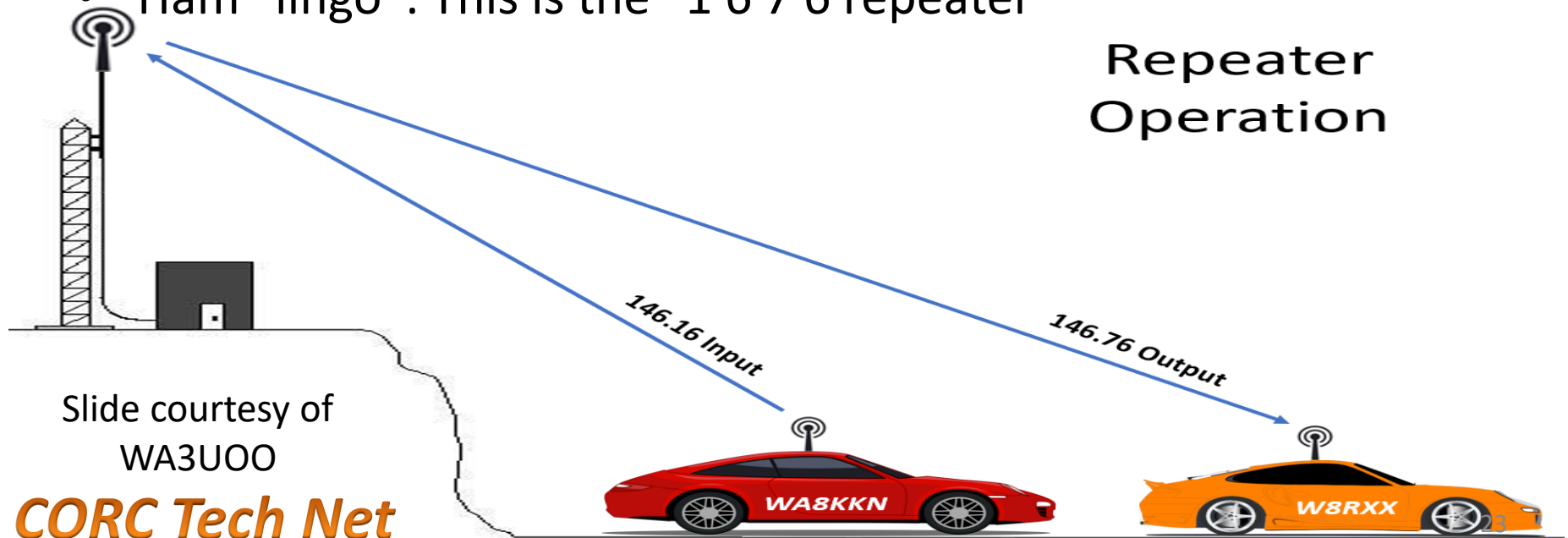
Term	Ham Radio	CB Radio
Name	Name / Handle	Personal
Ending a conversation	73 (not 73s)	10-4, 10-10
Location	QTH	20, 10-20

- Transmitting Extra “Stuff”
 - “Roger beep”
 - Data bursts (Yaesu WIRES-X, Motorola, etc.)

Repeater Operation

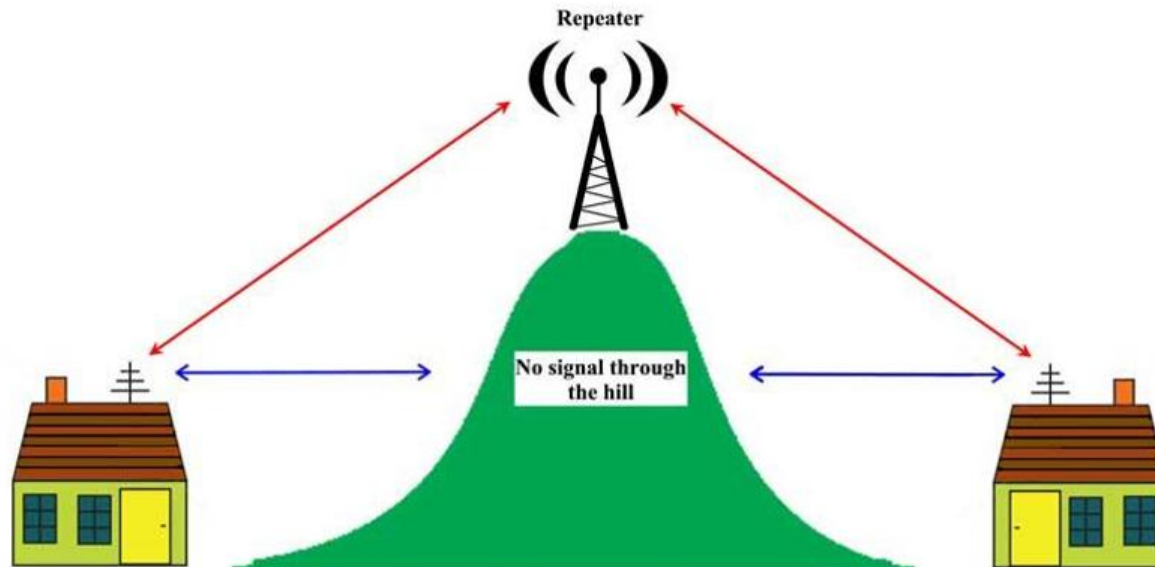
Repeater Operation

- Stations transmit on one frequency and the repeater re-transmits the signal on another frequency (Duplex operation)
- Example: W8AIC Repeater 146.760 MHz
- User transmit frequency: 146.160 MHz
- User receive frequency: 146.760 MHz
- Ham “lingo”: This is the “1 6 7 6 repeater”



Practical Use of a Repeater

All system equipment is located on the hill



Use repeaters when direct communication (Simplex) is infeasible or unreliable.

Slide courtesy of
WA3UOO

CORC Tech Net

Repeater Operation Protocol

- **Listen** to hear if the repeater is in use before transmitting
- State “Callsign listening”
 - Don’t call CQ on a repeater
- Wait for a response; if no response, give callsign again and wait for a response
- When in a conversation (QSO)
 - Allow the repeater to reset (Courtesy Tone or “reset beep”)
 - ID every 10 minutes
 - ID on your final transmission

Repeater Operation Equipment Tips

- Mobile operation: using HT radio with rubber duck antenna often gives disappointing results
 - Excessive “picket fencing” signal
 - More power = more heat generated by radio
 - HT radios usually not designed for rugged mobile environment
- Invest in better equipment if frequently operating mobile
 - **Good:** HT with external antenna ($1/4 \lambda$ antenna is sufficient)
 - **Better:** mobile radio with external antenna
 - **Best:** mobile radio with permanent mount antenna (drill hole!)

Repeater

Support Your Local Repeater

- Repeaters cost money to operate!
 - Equipment cost
 - Utility cost (electricity, telephone, internet)
 - Insurance
- Repeaters can be technically complex
 - Consider lending your knowledge if you have worked professionally in similar areas (cell phone, utilities, etc.) or have gained knowledge
- Repeaters take time to keep on the air
 - Lend your time to clubs if possible



The World Beyond Repeaters

- Simplex
- Sideband – use for weak signal voice (phone) operation
 - 2m: 144.100 MHz – 144.275 MHz (USB)
 - 6m: 50.100 MHz – 50.300 MHz (USB)
 - 6M band nickname “The Magic Band”
 - 10m: 28.300 MHz – 28.500 MHz (USB)
- Ham Satellites / International Space Station
- APRS / Packet / Other Digital Modes
- HF

Activities

Activities – Public Service



ARES: Amateur Radio Emergency Service

- The Amateur Radio Emergency Service (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. Source: <https://www.arrl.org/ares>
- Operators often must be trained to participate in formal emergency drills (ICS 100, 200, 700, 800 certifications)
- Hams without these certifications can participate in other ARES events (race communications, fundraising walks, other public events, etc.)

Activities – Public Service

ARES: Amateur Radio Emergency Service



- National Link: <https://www.arrl.org/ares>
- Local Link: <https://franklincountyohioares.org/>
- Weekly meeting:
 - Wednesdays 8 p.m.
 - K8DDG repeater 147.060+ MHz (94.8 Hz CTCSS)
- In person meetings:
 - 3rd Wednesday of month at Franklin County EM&HS Headquarters 5300 Strawberry Farms Blvd., Columbus

Activities – Public Service

NTS: National Traffic System



- The National Traffic System (NTS) is a structure that allows for rapid movement of traffic from origin to destination and training amateur operators to handle written traffic and participate in directed Source: https://www.arrl.org/files/file/Public%20Service/NTS_Manual2015.pdf
- During disasters or other emergencies, **Radiograms** are used to communicate information critical to saving lives or property, or to inquire about the health or welfare of a disaster victim.
- NTS works as a communication arm with ARES and other agencies when handling large volumes of messages in and out of an area

Activities – Public Service

NTS: National Traffic System



- National Link: <https://www.arri.org/nts>
- Local Link: <https://www.cotn.us>
- Central Ohio Traffic Net:
 - Daily 7:15 p.m.
 - W8RRJ repeater 146.970- MHz (123.0 Hz CTCSS)
 - Online monthly meetings; check COTN web page for meeting announcements
 - Training net: learn about traffic handling and operations during a formal directed net

Activities – Public Service

SKYWARN®



- SKYWARN® is a volunteer program with between 350,000 and 400,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Source: <https://www.weather.gov/skywarn/>
- Operators become the “eyes and ears” of the NWS and provide detailed information to verify or enhance what is showing on radar
- NWS weather spotter training is strongly encouraged for all SKYWARN® operators

Activities – Public Service

SKYWARN[®]



- National Link: <https://www.weather.gov/skywarn/>
- Local Link: <https://coswn.org/>
- Central Ohio Severe Weather Network:
 - Activated as needed
 - W8AIC repeater 146.760- MHz (123.0 Hz CTCSS)
 - Weekly readiness checks (March-October) every Tuesday at 7:30 p.m.

Events and Contests

Events and Contests

- **Events** are held to promote amateur radio to the general public or a specific group; often are also used to test operating in an “emergency” environment (i.e. without commercial power and/or improvised antennas)
- **Contests** are competitions where hams attempt to contact as many stations as possible within the parameters of the contest rules to earn points; scores for ARRL contests are published in *QST Magazine*

Selected Events

Field Day



- **Field Day is ham radio's open house.** Always the 4th Saturday in June, hams set up temporary transmitting stations in public places to demonstrate ham radio's science, skill and service to our communities and our nation. It combines public service, emergency preparedness, community outreach, and technical skills all in a single event.
 - Source: <https://www.arrl.org/field-day>

Selected Events

SET – Simulated Emergency Test

- **Objectives**

- To find out the strengths and weaknesses of ARES, NTS, RACES and other groups in providing emergency communications.
- To provide a demonstration--to served and partner agencies such as the American Red Cross, the emergency management agency and through the news media--of the value to the public that Amateur Radio provides, particularly in time of need.
- To help radio amateurs gain experience in communications using standard procedures and a variety of modes under simulated-emergency conditions.

Source: <https://www.arrl.org/simulated-emergency-test>

Selected Events

<fill in the blank> on the Air

- Events tied to a group, special event, or other special interest; these are not contests but points can be earned and reported
 - **IOTA – Islands on the Air:** established in 1964, encourages radio contacts with stations located on islands worldwide source: <https://www.iota-world.org/>
 - **JOTA – Jamboree on the Air:** Jamboree-on-the-Air provides the opportunity for millions of Scouts around the world to meet on the air via Amateur Radio. Source: <https://www.arrl.org/jamboree-on-the-air-jota>
 - **POTA – Parks on the Air:** operators set up portable radio stations in public parks, national forests, and state game lands to make radio contacts
 - **SOTA – Summits on the Air:** program that encourages operators to combine hiking or climbing with radio communication

Selected Events

Hamfests

- **Hamfests and Conventions:** A hamfest is a meeting of people interested in Amateur Radio. Hamfests offer exhibits, forums, and flea markets...“
 - Source: <https://www.arrl.org/hamfests-and-conventions-calendar>

- **Notable Local Hamfests**
 - Dayton Hamvention in Xenia: May 15-17, 2026
 - Columbus Hamfest: August 1, 2026

- List of hamfests and conventions:
<https://www.arrl.org/hamfests-and-conventions-calendar>



Picture source: Dayton Daily News

Contests

- Source: <https://www.arrl.org/contest-calendar>

Contest Corral

April 2026

Check for updates and a downloadable PDF version online at www.arrl.org/contest-calendar. Check <https://contests.arrl.org> for recent results. Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

	Start - Finish		Bands	Contest Name	Mode	Exchange	Sponsor's Website
	Date-Time	Date-Time					
2	0000	3 0300	7	Walk for the Bacon QRP Contest	CW	Max 13 WPM; RST, SPC, name, mbr or pwr	qrptest.com/pigwalk40
4	0000	5 2359	1.8-28	YBDXPI SSB Contest	Ph	RS, serial	contest.ybdxpi.net
4	1200	5 1200	3.5-28	EA RTTY Contest	Dig	RSQ, province or serial	concursos.ure.es
4	1400	5 0200	1.8-28,50,144	Louisiana QSO Party	CW Ph Dig	RS(T), LA parish or SPC	laqp.louisianacontestclub.org
4	1400	5 0200	1.8-28,50,144	Mississippi QSO Party	CW Ph Dig	RS(T), MS county or SPC or 4-char grid	www.arrlmiss.org
4	1500	5 1500	1.8-28	SP DX Contest	CW Ph	RS(T), SP province or serial	spdxcontest.pzk.org.pl
11	0000	11 0600	1.8-28	QRP ARCI Spring QSO Party	CW	RS, SPC, mbr or pwr	qrparci.org
11	0700	12 1300	1.8-28	JIDX CW Contest	CW	RST, JA prefecture or CQ zone	www.jidx.org
11	1200	12 1100	3.5-28	DIG QSO Party, CW	CW	RST, mbr (if member)	dig-contest.de/rules
11	1200	12 1159	1.8-28_sat	Yuri Gagarin International DX Contest	CW Ph	RST, ITU zone	gcontest.ru
11	1200	12 1159	1.8-28	OK/OM DX Contest, SSB	Ph	RS, OK/OM county code or serial	okomdx.crk.cz
11	1200	12 1200	1.8-28	RSGB FT4 International Activity Day	Dig	Signal report	www.rsgbcc.org
11	1200	12 1800	3.5-28	IG-RY World Wide RTTY Contest	Dig	RST, 4-dig yr first licensed	www.ig-ry.de
11	1200	12 2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "NONE"	www.skccgroup.com
11	1400	12 0200	1.8-28,50,144	New Mexico QSO Party	CW Ph Dig	RS(T), NM county or SPC	www.newmexicoqsoparty.org
11	1400	12 2000	1.8-28,VHF/UHF	Missouri QSO Party	CW Ph Dig	RS(T), MO county or SPC or "DX"	www.w0ma.org
11	1800	12 1800	1.8-28,50,144	North Dakota QSO Party	CW Ph Dig	RS(T), ND county or SPC	ndarrlsection.com
11	1800	12 2359	1.8-28,50	Georgia QSO Party	CW Ph	RST, GA county or SPC or "DX"	gaqsoparty.com
13	0000	13 0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or pwr	www.4sqrp.com
13	2300	14 0600	144	144 MHz Spring Sprint	CW Ph Dig	4-char grid	sites.google.com/site/springvhfupsprints
15	0030	15 0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	naqcc.info

Awards – a “by-product” of Events and Contests

- Official recognition for contacting stations in a specific area, band, mode, or combination thereof
- Worked all states, grid squares, counties, countries, continents, etc.
- Worked all states on all bands, etc.

Band	States	Grid Squares	Continents
6M	✓	✓	
10M	✓		
20M			✓

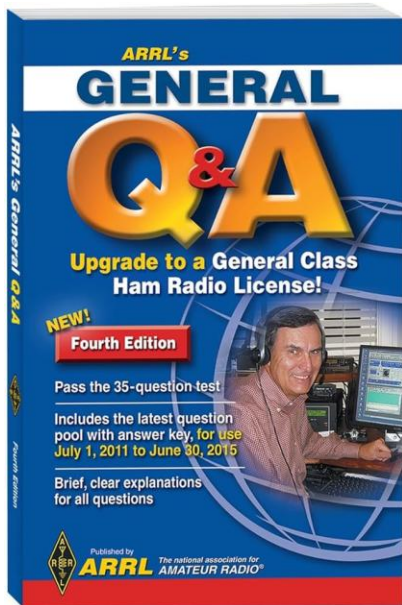
- <http://www.arrl.org/AWARDS>

Clubs and Organizations

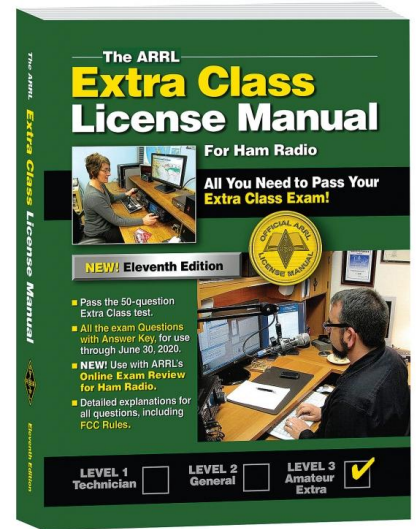
Group Types

- General interest
- Repeater clubs (CORC, etc.)
- Emergency focused
- Weather focused
- Specific area of ham radio (contesting, digital modes, etc.)
- Social
- <http://www.arrl.org/find-a-club>





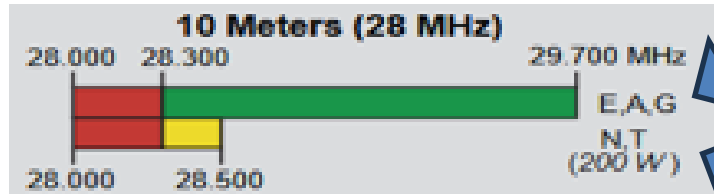
Next Level UPGRADING!



Upgrading

- Gives you access to more frequencies and greater capabilities to make RF contacts around the world

– 10M example:



Extra, Advanced,
General

Novice, Technician

- General Class
- Extra Class
- Morse Code Proficiency (CW = Continuous Wave)

License Study Guides

Choose a study method that works best for you.

- Books: ARRL, Gordon West, etc.
- Online: web search provides lots of options
- In Person Classes - <http://www.arrl.org/find-an-amateur-radio-license-class>

Important: make sure the content of your study guide is for the current pool of exam questions

Check: <http://www.arrl.org/question-pools>

Ham Radio License Test Sessions

- VE Test Sessions (Volunteer Examiner)
 - Hamfests: <https://arrl-ohio.org/hamfests.html>
 - Club Meetings
 - Special Events (Hamfests, etc.)
- CORC Sponsored Exam Sessions: <https://www.ae8fp.net/>
 - **Next test session: 4/18/2026 (World Amateur Radio Day!)**
- Test session search: <http://www.arrl.org/find-an-amateur-radio-license-exam-session>

Final Thoughts

- There is something for everyone in ham radio
- You get out of it what you put into it
- Be “Radio-active”
- Get involved!

Questions?

technet@corc.us

Thank you!

Appendix

CORC System of Repeaters

Callsign	Output Freq / Offset	CTCSS Tone	Notes
W8AIC	52.70 MHz	123.0 Hz	Analog / Inputs: 51.70, 52.94, 53.70
W8AIC	146.760 MHz -	123.0 Hz	Analog / COSWN
W8RRJ	146.970 MHz -	123.0 Hz	Analog / COTN
W8NBA	147.330 MHz -	123.0 Hz	Analog IRLP node 8094
K8NIO	442.800 MHz +	151.4 Hz	Analog
W8AIC	444.200 MHz +	151.4 Hz	Analog / COSWN
W8CMH	145.490 MHz -	None	Digital (D-STAR)
W8CMH	444.000 MHz +	None	Digital (D-STAR)



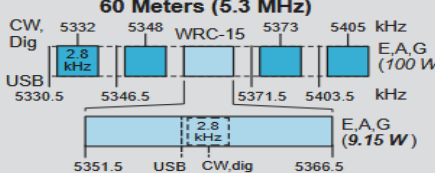
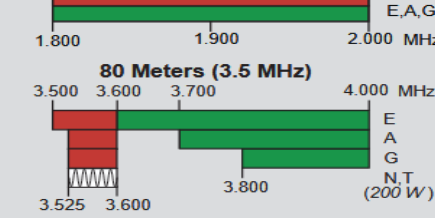
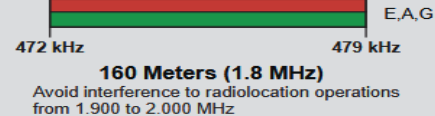
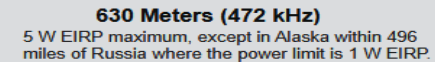
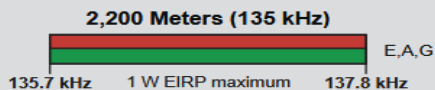
US Amateur Radio Bands

<https://www.arrl.org/graphical-frequency-allocations>

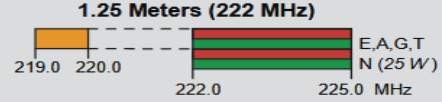
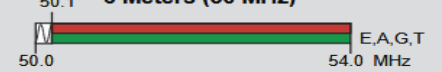
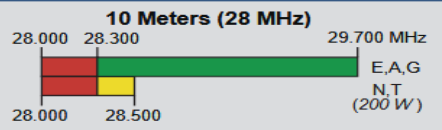
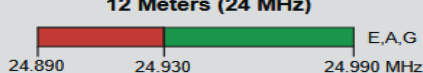
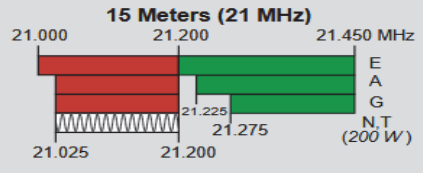
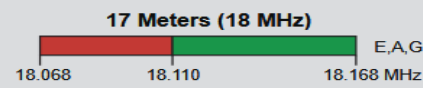
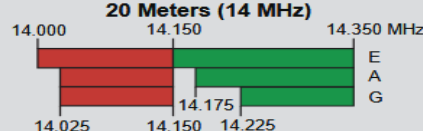
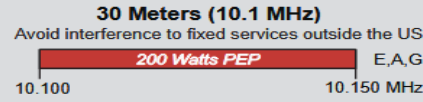
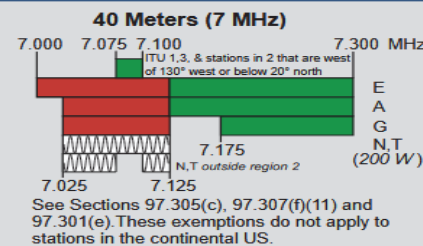
US Amateur Radio Bands

US AMATEUR POWER LIMITS — FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

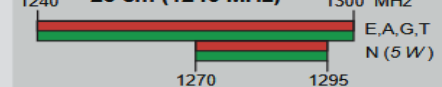
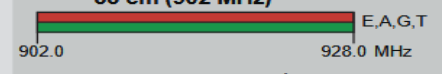
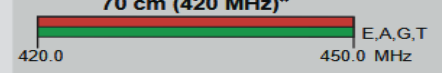
Amateurs wishing to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online at <https://utc.org/plc-database-amateur-notification-process/>. You need only register once for each band.



General, Advanced, and Extra licensees may operate on a secondary basis with an operating bandwidth of 2.8 kHz, maximum ERP of 100 W (relative to a half-wave dipole antenna) on individual channels. As February 13, 2026 the WRC-15 band 5351.5 to 5366.5 kHz is available with a max. ERP of 9.15 W.



*Geographical and power restrictions may apply to all bands above 420 MHz. For information about your area, See FCC 97.303 Frequency sharing requirements.



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

2300-2310 MHz	10.0-10.5 GHz ±	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3450 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

± No pulse emissions



KEY

Note: CW operation is permitted throughout all amateur bands.

MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz. Test transmissions are authorized above 51 MHz, except for 219-220 MHz

- = RTTY and data
- = phone and image
- = CW only
- = SSB phone
- = USB phone, CW, RTTY, and data
- = Fixed digital message forwarding systems only

E = Amateur Extra
A = Advanced
G = General
T = Technician
N = Novice

See www.arrl.org/band-plan for detailed band plans.

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The Amateur Radio Operator's Code

Source: International Amateur Radio Union Ethics and Operating Procedures for the Radio Amateur

The Radio Amateur is:

- **Considerate**
They never knowingly operates in such a way as to lessen the pleasure of others.
- **Loyal**
They offer loyalty, encouragement and support to other amateurs, local clubs, the IARU Radio Society in their country, through which Amateur Radio in their country is represented nationally and internationally.
- **Progressive**
They keeps their station up to date. It is well-built and efficient. Their operating practice is above reproach.
- **Friendly**
They operate slowly and patiently when requested; offer friendly advice and counsel to the beginner; kind assistance, cooperation and consideration for the interests of others. These are the marks of the amateur spirit.
- **Balanced**
Radio is a hobby, never interfering with duties owed to family, job, school or community.
- **Patriotic**
Their station and skills are always ready for service to country and community.

Links

- <http://www.corc.us/>
- <https://arrrl-ohio.org/>
- <http://www.arrrl.org/home>
- <https://www.arrrl.org/newly-licensed-learn-more>
- <http://www.arrrl.org/on-the-air-magazine>
- <https://www.arrrl.org/files/file/conop.pdf> - the considerate operator's frequency guide (for HF)
- <https://noji.com/hamradio/newham.php>
- <https://hamradiofornontechies.com/>
- <https://www.iaru-r1.org/on-the-air/code-of-conduct/versions/> - The International Amateur Radio Union Code of Conduct
- <https://www.w6nbc.com/> - Track 4 has lots of articles for building your own antennas