HF Hamlet Seminar

Northern Colorado Amateur Radio Club (NCARC)

Elmers

Refers to someone who provides personal guidance and assistance to less-experienced hams

elmers@ncarc.net

Join a Club

- Strong indication that club membership (and participation) accelerates learning
- One of the few upsides to COVID was that many clubs added services like Zoom to their meetings
- This allows you to more easily sample clubs to find one that “fits”
- Many clubs have a particular “focus” (like socializing, contesting, experimenting, etc.), so check out more than one!

Most clubs have one or more weekly nets on their repeaters

Area Clubs

- Northern Colorado ARC: https://ncarc.net/
- Weld ARS: https://www.weldamateurradio.org/
- Longmont ARC: https://w0eno.org/
- Boulder ARC: https://barcw0dk.wordpress.com/

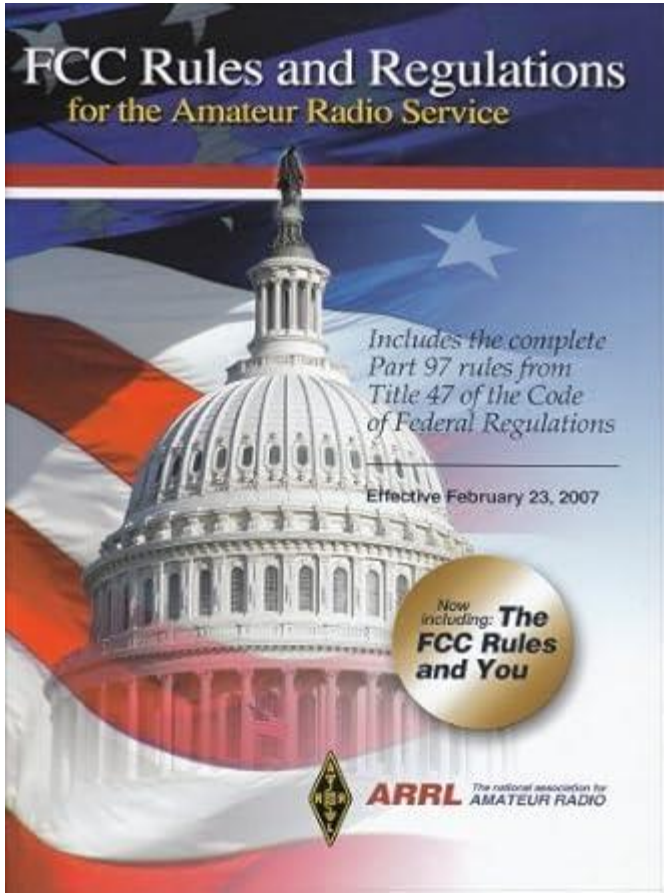
Clubs are always looking for volunteers, presenters, activities, meeting and net topics, etc. See what you can do to help!

Listening is Key

- You have two ears and one mouth – listen more than you speak
- There are many different activities conducted over HF, and things will go smoother if you recognize what is going on before jumping in

Rules vs. Etiquette

- Part 97 specifies the rules governing Amateur Radio
- There are also unwritten rules, gentlemen's agreements, best practices and other generally-behavior that you should strive to adhere to



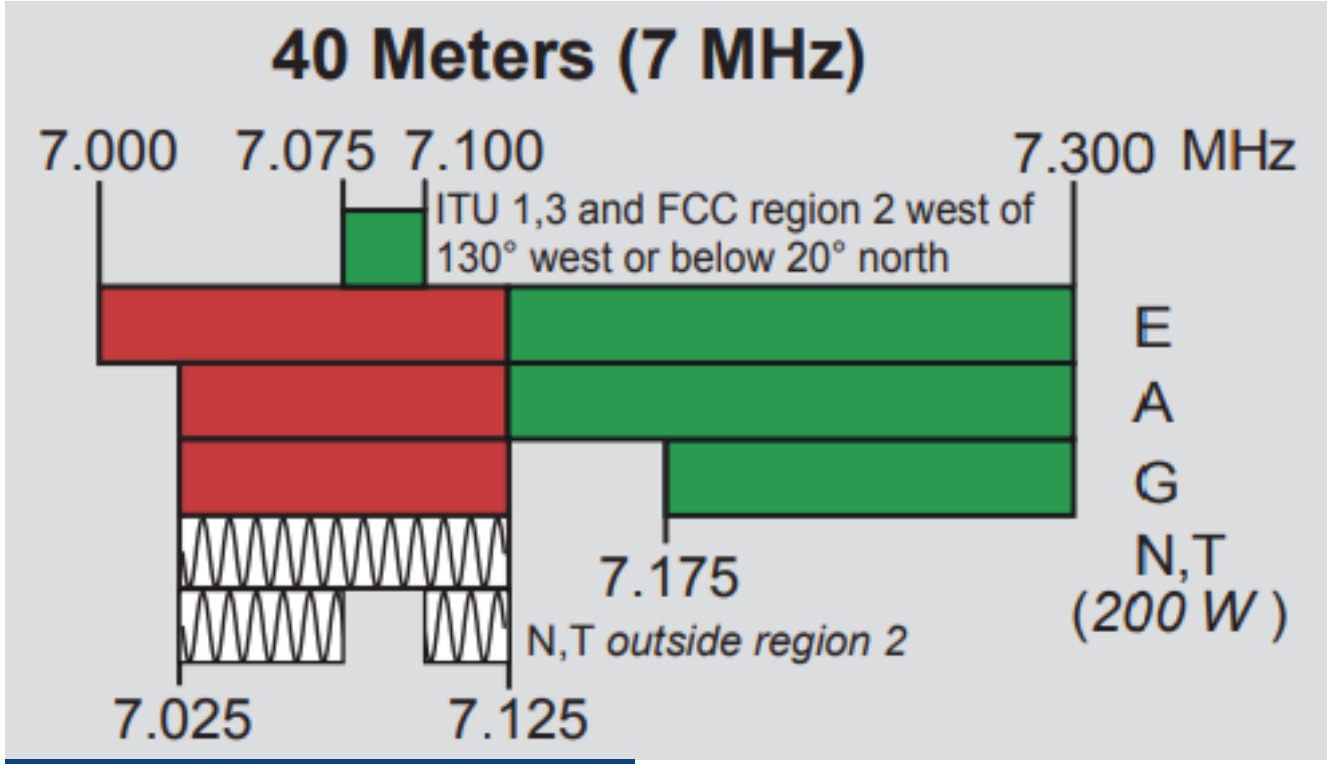
The Radio Amateur’s Code

- The Radio Amateur is:

CONSIDERATE	LOYAL	PROGRESSIVE
FRIENDLY	BALANCED	PATRIOTIC

https://www.arrl.org/amateur-code

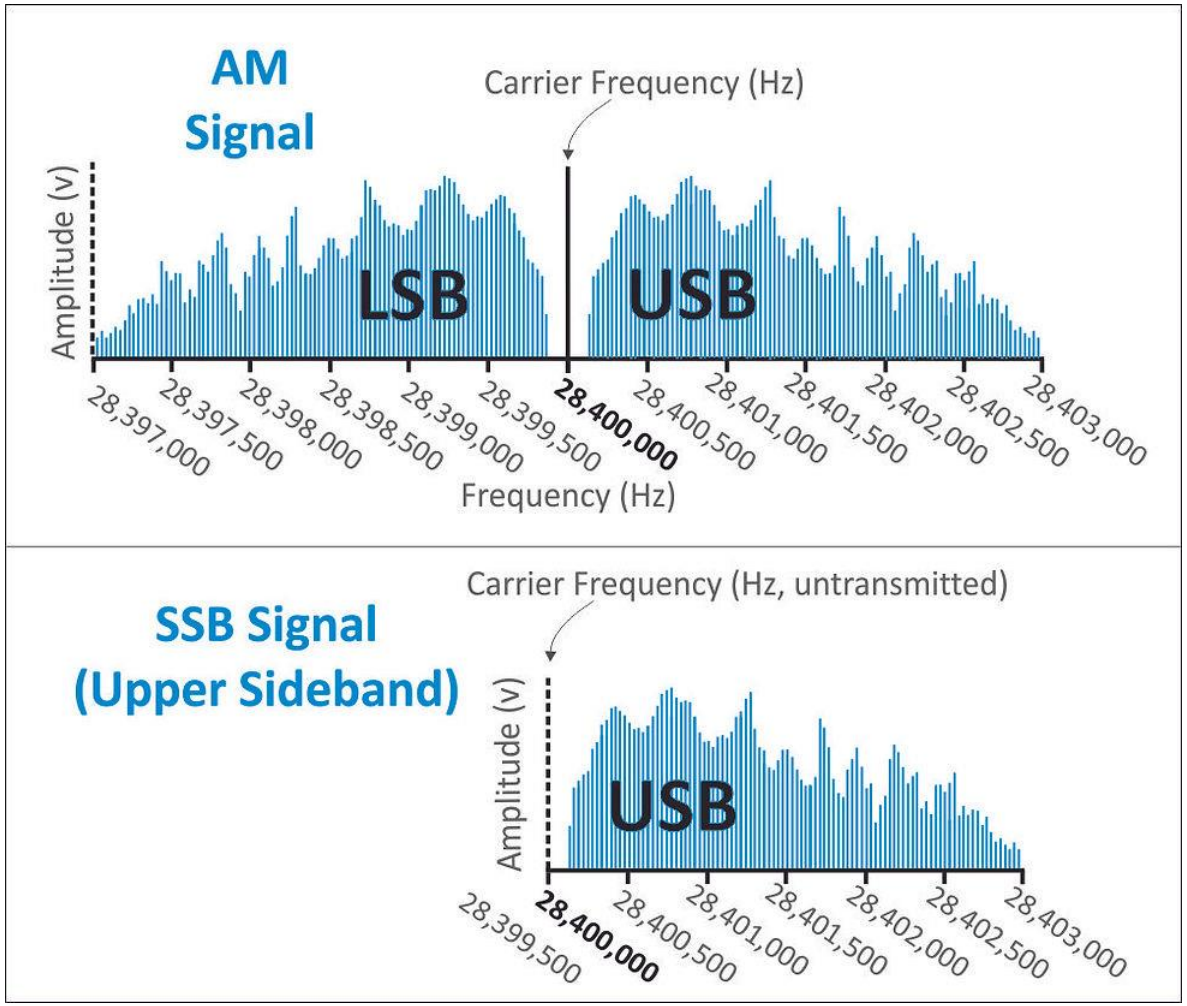
Band Charts / Band Plans



Frequency (MHz)	Use
7.040	RTTY / Data DX
7.080 – 7.125	RTTY / Data
7.171	SSTV
7.290	AM calling frequency

https://www.arrl.org/graphical-frequency-allocations
https://www.arrl.org/band-plan
https://www.arrl.org/files/file/conop.pdf

Band Edges vs. Bandwidth



- SSB signal is approx. 3 kHz wide
- AM is allowed, but is 6 kHz wide
- Make sure your signal does not overstep your privileges!
- SSB transmissions – LSB below 10 MHz, USB above 10 MHz by convention

https://www.hamradioschool.com/post/understanding-single-sideband-

Signal Report (RST)

Readability (1-5) Strength (1-9) Tone (CW only, 1-9)

“You are 59” – Perfectly readable, very strong signal

“I’m reading you as 35” – Readable w/difficulty, fairly good signal

- **During contests, typical reports are “59” no matter how bad the signal**
- **Don’t get upset if you get a bad report**

Which Band?

- Depends on your license class
- Technicians have limited HF privileges
  - 10 meters: 300 kHz CW/RTTY/Data, **200 kHz SSB**, and CW
  - 15 meters: 175 kHz CW
  - 40 meters: 100 kHz CW
  - 80 meters: 75 kHz CW
- Generals have some privileges on all HF bands

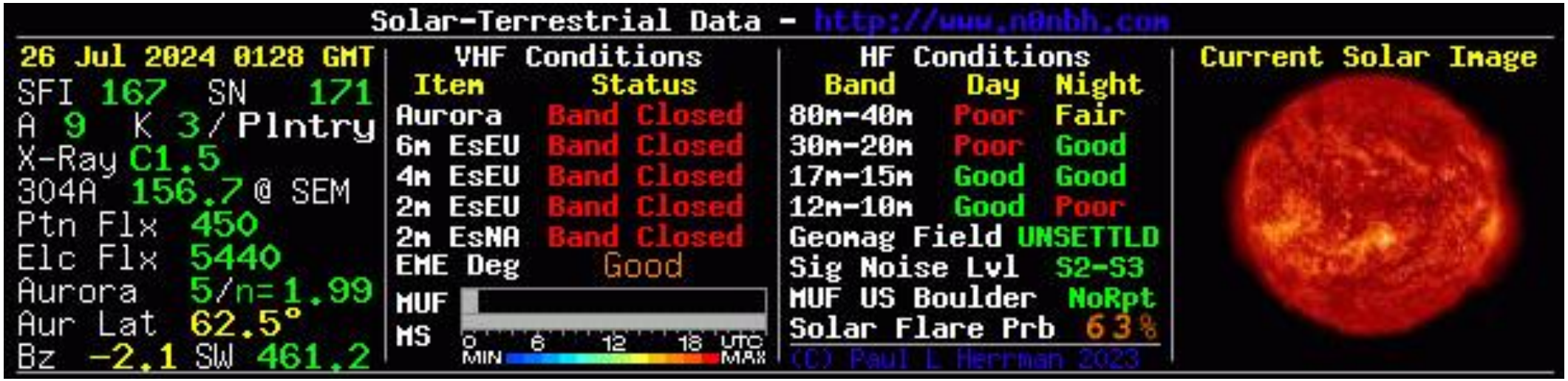
Which Band?

- Bands have different propagation characteristics
  - 80 meters – Best at night
  - 40 meters – Best near dawn / dusk
  - 20 and 10 meters – Best during day during higher part of sunspot cycle
- If you have to choose one band (for an antenna), 40 meters would be a good one - it is always open to somewhere

An “open band” means conditions are there for skywave propagation off the ionosphere

Which Band?

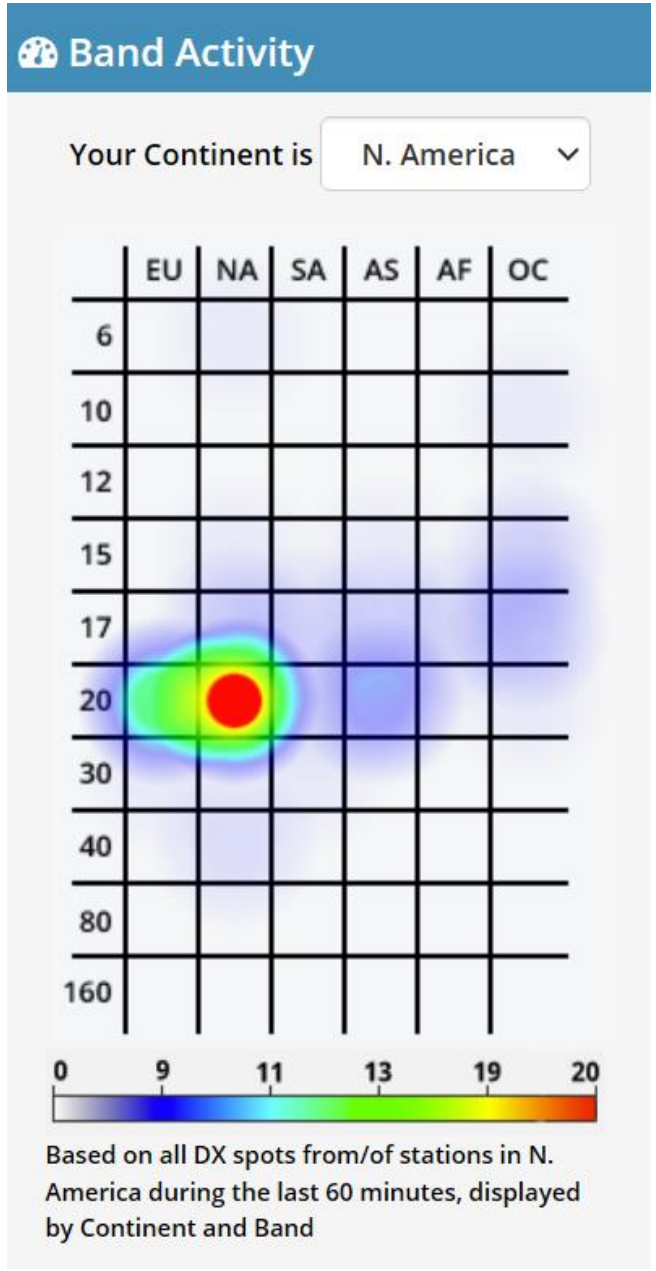
- https://www.qrz.com/ displays band conditions



- Info is from https://www.hamqsl.com/solar.html

Which Band?

- https://www.dxheat.com/dxc/ displays band activity over the past hour
- Based on spotting information provided by hams
- Diagram at right shows:
  - 20 meters has a lot of activity within North America as well as some to Europe
  - 20 meters also has a little activity to Asia
  - 17 meters may also be open to Oceana (central and south Pacific ocean islands including Australia)



Common “Q” Signals and Codes

CQ	Calling any station
QRM	Interference from other stations / man-made
QRN	Interference from natural causes
QRZ	Who is calling me?
QSL	Confirmation of QSO (card) also of receipt of information
QSO	A conversation / contact via ham radio
QSY	Changing frequency to _____ (ex. 28.350)
QTH	What is your location? My location is _____
73	Best regards
88	Love and kisses

Getting Started

There are two main ways to operate during a contest, but they apply to most areas of amateur operation:

- Search and Pounce
  - Tune across the band and listen for stations calling CQ (or stations in a QSO with other stations), and then contact them when they are free
- Running
  - Find an open frequency and call “CQ” and listen for stations to call back to you

Search and Pounce

CQ CQ CQ. This is kilo delta zero tango yankee uniform calling CQ on 20 meters and standing by
Alfa foxtrot zero whiskey
Alfa foxtrot zero whiskey, you’re coming in 59 into San Diego
Thanks – you’re 57 into Colorado
73 and thanks for the contact! QRZ

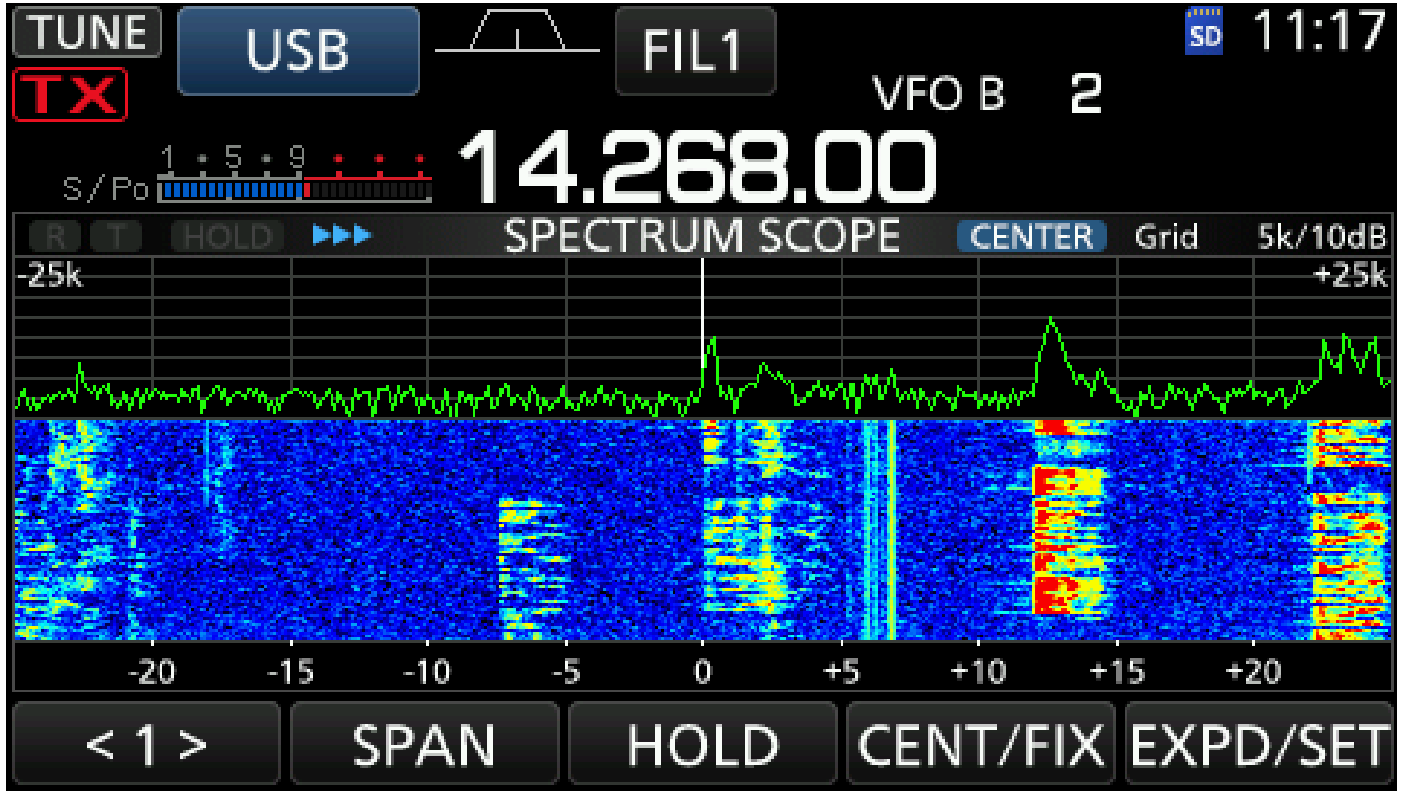
- The other op was not looking for a rag chew!

Running

CQ CQ CQ. This is alfa foxtrot zero whiskey calling CQ, CQ, CQ
Kilo delta zero tango yankee uniform
Kilo delta zero tango yankee uniform from AFØW, great signal into Colorado. I'd say you're a 59.
I've got a lot of QRM on my end – you're about a 34 here.
What sort of antenna are you using?

Continue going back and forth until both sides run out of things to say!

Find a Frequency



- Tune to allowed frequency
- Listen for a minute
- Ask if frequency in use
  "This is AFØW – is this frequency in use?"
- Wait about 30 seconds, repeat
- If no one answers after another 30 seconds, use it!

No one "owns" any frequencies, but if asked to move, easier to do so than to argue

Find a Frequency

- Make sure you stay at least 3 kHz from other voice QSOs and band edges!
- Propagation and noise conditions change continuously – even if you start calling CQ on an unused frequency, you may find that someone suddenly jumps in and tells you to get off their frequency.
- You can argue about who was there first, or you can spin the VFO

Spinning the VFO will get you back to making QSOs quicker!

QSOs (Conversations)

- A typical QSO will consist of an exchange of call signs and signal reports
- It may be followed by “rag chewing” or discussion
- Contest QSOs are usually very quick and involve an exchange of contest information and no further discussion

Remember to LISTEN! You will hear how the other operator is working – if he’s rag chewing or just making rapid-fire contest QSOs

Conversations

- You already know other party has an interest in amateur radio!
- If you hear someone working a contest, don’t try to chat with them
- Avoid controversial topics – even if it’s with like-minded individuals
- Avoid CB jargon (10-4, good buddy, my personal is)
- Keep personal conflicts off the air – settle them via phone or email
- You never know who might be listening – kids, prospective hams, etc.!

Don’t say anything you wouldn’t repeat in front of your mother!

Ending Conversations

- Some people have difficulty ending a conversation (or QSO)
- “I’ll be clear on your final”
  - This means they want to end the conversation, and you should just reply with a closing statement
- All you need to say is something like
  - “It’s been great talking with you – thanks for coming back to my CQ. 73 and have a good day!” (if you called CQ)
  - “Good talking to you – I’ll let you get on to someone else” (if you answered someone’s CQ)

Phonetics

- Always start with proper phonetics
- If you can’t get through, alternates are OK (“DX Phonetics”)

  America France Zero Washington
- English may not be other operator’s first language

https://www.hamradioschool.com/post/phonetic-alphabets

Partial Call Signs

- Never give a partial call sign (“ØW”) – always give your full call sign
- Use phonetics the first time in a QSO
- A partial call sign may be given if other station cannot understand your full call sign

    “Station ending in “ØW” what is your call sign”

When to Keep Quiet

- Do not respond if your call sign does not meet the other station's requirements
  - "CQ DX" – Looking for stations outside my DX area
  - "CQ area 4 stations" – looking for stations with "4" in their call sign
  - "CQ Colorado" – looking for stations in Colorado

If you are one calling CQ and someone with an inappropriate call sign responds, you can berate them or give them a quick contact.

Which one is more inline with being a good amateur operator?

Logging

- Unlike VHF / UHF FM contacts, many hams log their HF QSOs
- There are LOTS of logging applications available
- Some hams prefer to use paper logs (no batteries to die!)
- Dates and times are always logged in UTC to make comparisons easier
- Log entries usually include at least date, time, band or frequency, both signal reports, other station call sign
  - Can also include radio, antenna, power, name, etc.

As with any electronic data, make sure you back it up!

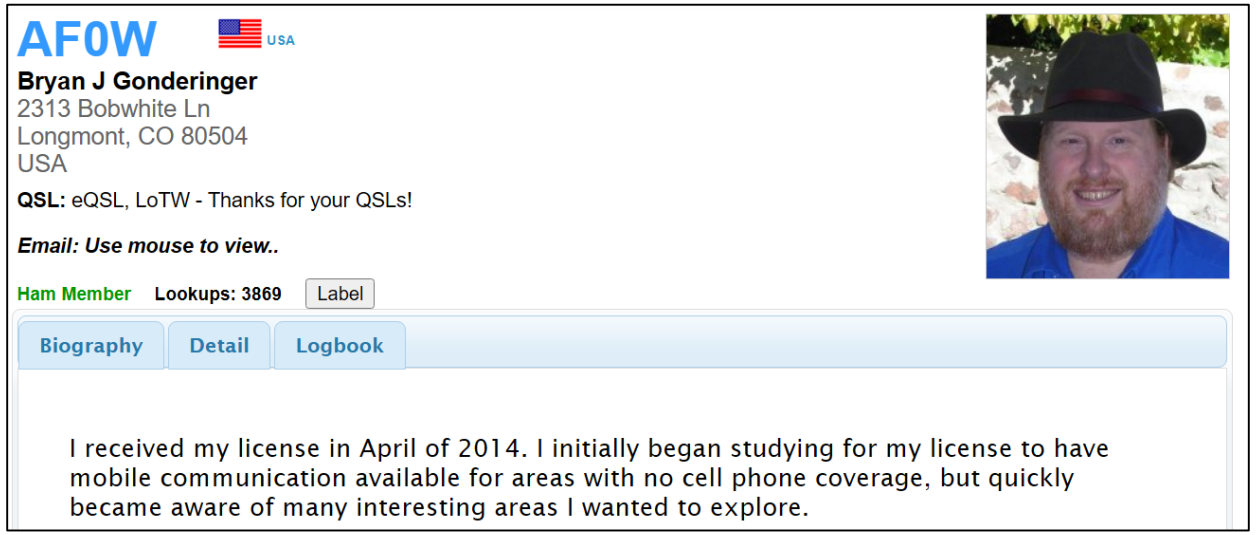
QSL Cards

- Prior to the Internet, hams exchanged QSL cards to commemorate their contacts
- Hams still do this, but there are also web sites where you can enter QSO information like https://www.qrz.com/, https://www.eqsl.cc/, and https://clublog.org/
- ARRL's Logbook of the World is used for many contests (https://www.arrl.org/logbook-of-the-world)

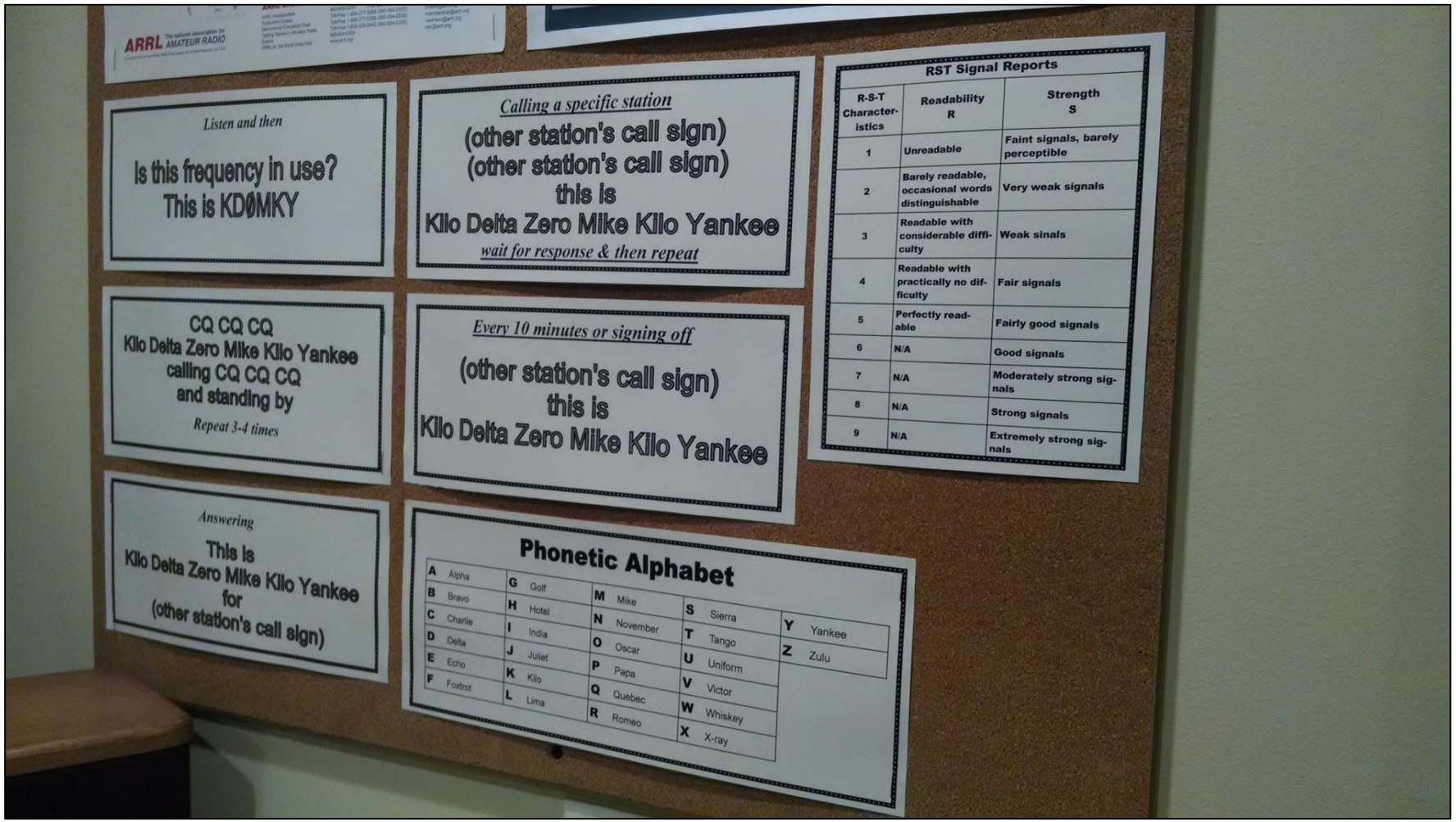
Update QRZ

- Create a free account on https://www.qrz.com/ and update your license record
- Many HF operators will check out your page when they hear your call sign

You can check theirs out to help with conversation topics!



QSO Aids



- If you are nervous, print out relevant information for use during a QSO

More Tips

- If using VOX, make sure your transmitter doesn't activate inadvertently (breathing, fans, pets)
- Never tune up on the same frequency as a net or QSO
- You have two ears and one mouth – listen before talking!
- You will hear opinions given as facts, wrong information, bad suggestions, and rude operators – you cannot control other people, but you can control your own reactions

Remember - YOU are in control – spin the dial, or turn the radio off and go do something else for a while

Getting on the Air

Radio Opportunities

OMISS

POTA PARKS ON THE AIR

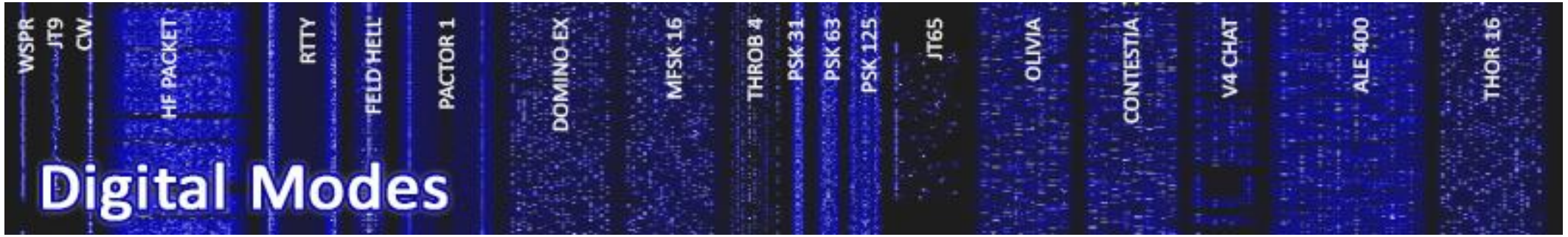
SOTA

WA7BNM Contest Calendar

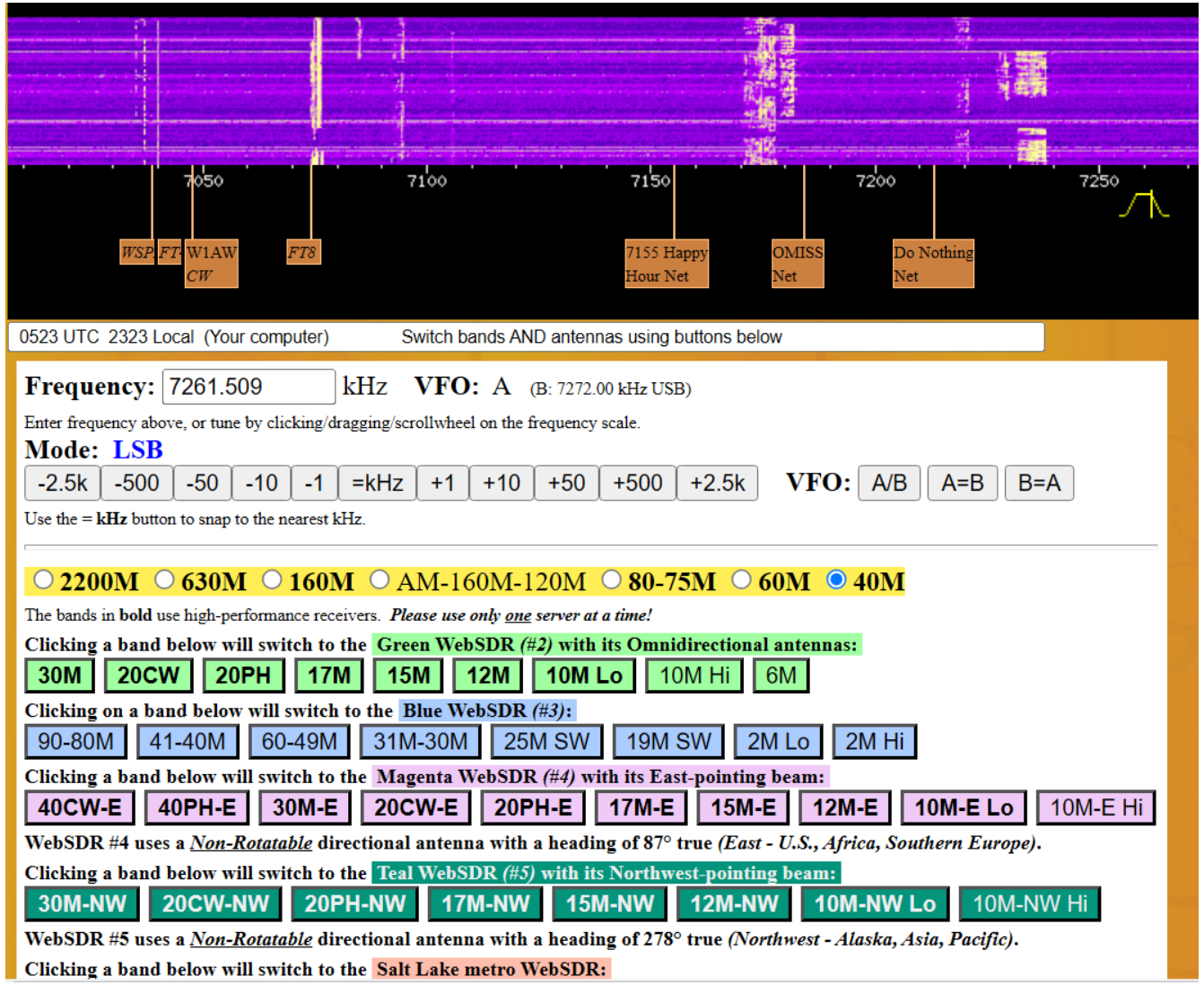
TEN - TEN INTERNATIONAL NET

WINLINK Global Radio Email®

ARRL FIELD DAY 2024 BE RADIO ACTIVE www.arrl.org



Listening



- If you don't have an HF radio, you can operate shared web-based radios!
- http://websdr.org/

Can also be used to listen to your own signal

OM International Sideband Society

- OMISS operates list-type awards nets on the General amateur radio bands
- Participants can request short contacts with other net participants
- This can be a great help if you're just missing a few states for your Worked All States (WAS) award!
- https://www.omiss.net/

They are very helpful with new hams

Parks on the Air

- POTA Activators operate their stations from parks and get QSOs with other hams to “activate” the park (over 11,000 in the US alone)
- POTA Hunters seek out Activators for contacts
- Contacts are tracked on a web site, and count toward awards
- https://parksontheair.com/

Contacts are usually fairly quick – nice if you don’t want to chit-chat (rag chew)

Summits on the Air

- SOTA is similar to POTA, but instead of parks, portable operation in mountains
- There are tens of thousands of summits in the US – over 1700 in Colorado alone!
- https://www.sota.org.uk/

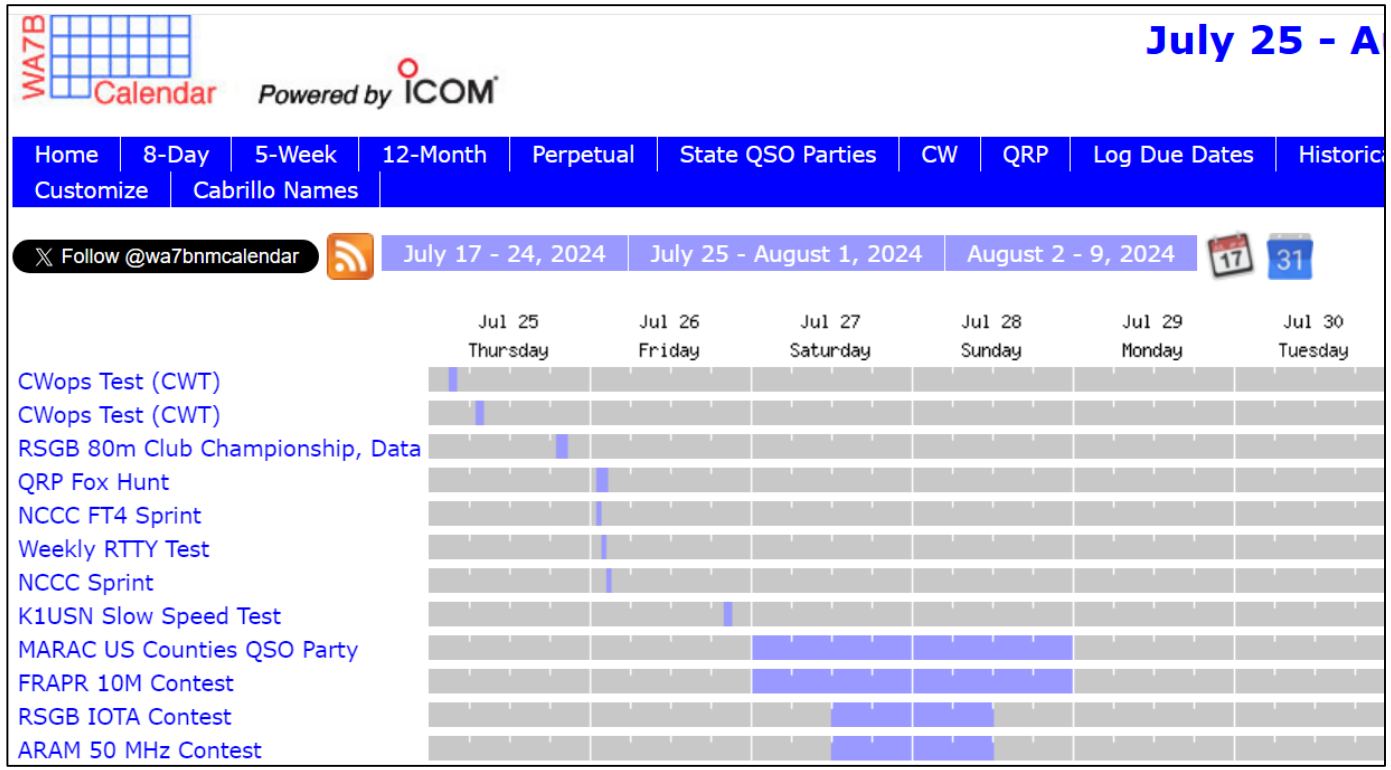
As with POTA, activations are tracked via a web page and may utilize any amateur radio and mode

Ten-Ten International Net

- Formed in 1962 to promote activity and good operating practice on the ten meter amateur band
- Members are assigned a “10-10 number” and can “chase numbers” by making contacts with other 10-10 members for awards
- It is a non-profit club with membership rules and dues
- They hold SSB nets Mon through Sat on 28.8 and 28.380 MHz
- https://www.ten-ten.org/

Contests

- ICOM sponsors a contest calendar at: https://www.contestcalendar.com/weeklycont.php
- Click on a contest to bring up details



Contests - Detail

Alabama QSO Party: 1500Z, Jul 27 to 0300Z, Jul 28	
Geographic Focus:	United States/Canada state/province QSO party
Participation:	Worldwide
Mode:	CW, Phone
Bands:	80, 40, 20, 15, 10m
Classes:	Single Op (CW/Phone/Mixed)(QRP/Low/High) M/S (CW/Phone/Mixed)(QRP/Low/High) M/M (CW/Phone/Mixed)(QRP/Low/High) Mobile Single Op (CW/Phone/Mixed)(QRP/Low/High) Mobile Single Op + Driver (CW/Phone/Mixed)(QRP/Low/High) Mobile Multi-Op (CW/Phone/Mixed)(QRP/Low/High)
Max power:	HP: >150 watts LP: 150 watts QRP: 5 watts
Exchange:	AL: RS(T) + County non-AL: RS(T) + (state/province/country)
QSO Points:	2 points per QSO
Multipliers:	AL Stations: Each state, VE province/territory, country once per mode non-AL Stations: Each AL county once per mode
Score Calculation:	Total score = total QSO points x total mults
Submit logs by:	August 26, 2024
E-mail logs to:	(none)
Upload log at:	https://alabamacontestgroup.org/aqp/log-submission/
Mail logs to:	(none)
Find rules at:	http://alabamacontestgroup.org/aqp/

Contests

- Contest stations will usually say “CQ Contest” instead of just “CQ”
- Rules for contests will differ – be sure to check them!
- Contesting never takes place on the WARC bands (30, 17, and 12 meters)
- If you participate in a contest, be sure to upload your logs so the other stations get credit!

Contesting brings out bad behavior in some hams. Don’t succumb to the temptation to join them just to get a few more contacts!

SSTV

- You can send and receive images over HF with SSTV (slow-scan TV)
- Best place to look for SSTV is on 20 meters at 14.230 MHz
- You need software to encode / decode the images
- SSTV cams: https://www.worldsstv.com/ and https://max.cqsstv.com/

Resist the urge to send “non-family-friendly” images (and be aware you may see some)

SSTV Software

- Windows – MMSSTV https://hamsoft.ca/pages/mmsstv.php
- Mac – MultiScan https://qsl.net/v/ve3elb/KD6CJI-MultiScan3B/
- Android – SSTV Encoder https://play.google.com/store/apps/details?id=om.sstvencoder&hl=en_US
  Robot36 – SSTV Decoder https://play.google.com/store/apps/details?id=xdsopl.robot36&hl=en_US
- IOS – SSTV Slow Scan TV from Black Cat Systems https://apps.apple.com/us/app/sstv-slow-scan-tv/id387910013
- Linux – cqsstv https://www.cqsstv.com/

Winlink

- Winlink is a network of stations that provide worldwide radio email
- Can utilize Internet, but also designed to work without it
- Can send information from standard forms used by government agencies and organizations such as the Red Cross
- Applications exist for Windows, Mac, Android, Linux
- Includes gateways to SMS and APRS

https://winlink.org/

Field Day

- ARRL sponsors a “ham radio open house” on the 4th weekend in June
  - Many clubs operate from parks or other locations
- Winter Field Day is held the last full weekend in January
  - Smaller event, but still a lot of participation!

Great opportunity to meet other hams and operate radios!

https://www.arrl.org/field-day, https://winterfieldday.org/

Special Events

- Special event stations are operated to commemorate some event
- Many will send out special QSL cards to stations who contact them
- Stations can request 1x1 call signs for their event (K4D in the picture)

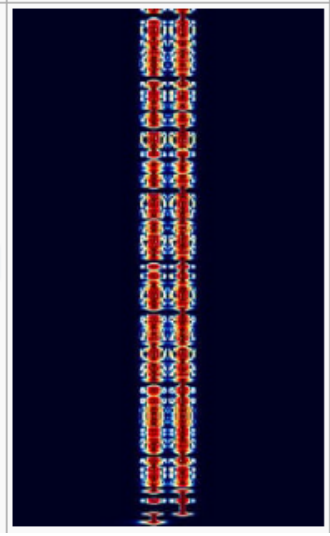
Search for upcoming events at:
https://www.arrl.org/special-event-stations

Digital Modes

- This is a class in and of itself!
- fldigi supports many digital modes - (http://www.w1hkj.com/)
- wsjt-x is commonly used for FT4 / FT8 (https://wsjt.sourceforge.io/wsjtx.html)
- Some modes are “conversational” – RTTY, PSK31, Contestia, DominoEX, Hellscreiber, JS8Call
- Some are highly regimented and used to make minimal contacts – FT4, FT8, JT65, MSK144, WSPR

Digital Modes

- Many modes can be recognized simply by listening to them (although you cannot decode them by ear)
- If you have a waterfall display, you can try to match them visually at the sigidwiki (https://www.sigidwiki.com/wiki/Category:Amateur_Radio)

Radio Teletype (RTTY)	RTTY (Also known as Baudot or ITA2) uses the Baudot 5-bit alphabet with FSK to send text messages over the shortwave. This mode is gradually dying out in favor of more robust modes like PSK31 in the amateur service.	147.3 kHz — 28.15 MHz	USB	FSK	85 Hz — 850 Hz	Worldwide	▶ 0:00 / 0:00	

Will This Guy Ever Shut Up????

YES!!!!

Morse Code / CW!

Antennas!

Packet Radio!

Moonbounce!

Satellites!

Awards!

Solar Power!

QRP!

Kits!

DXing!

Volunteering!

Collecting!

Propagation!

Elmering!

Experimentation!

Electronics!

Digital Signal Processing!

ARDF / Radio Orienteering!

Links

- Code of Conduct: https://www.iaru-r1.org/on-the-air/code-of-conduct/versions/
- ARRL Operating Tips: https://www.arrl.org/making-your-first-contact

Logging Applications

- N3FJP: https://www.n3fjp.com/
- N1MM Logger+: https://n1mmwp.hamdocs.com/
- DXKeeper (part of DXLab): https://www.dxlabsuite.com/
- HAMRS: https://hamrs.app/
- RUMLog: https://dl2rum.de/rumsoft/RUMLog.html
- MacLoggerDX: https://www.dogparksoftware.com/MacLoggerDX.html
- Cqrlog: https://www.cqrlog.com/
- CloudLog: https://www.magicbug.co.uk/cloudlog/

Online Logging Applications

- Log4OM2: https://www.log4om.com/
- Ham Log: https://hamlog.online/
- QRZ: https://logbook.qrz.com/
- Club Log: https://clublog.org/

Youtube Channels

- KM4ACK: https://www.youtube.com/@KM4ACK
- Dave Casler / Ask Dave: https://www.youtube.com/@davecasler
- Ham Radio Crash Course: https://www.youtube.com/@HamRadioCrashCourse

Books

- Ham Radio DX - A Complete Guide: How to go from Karaoke to a DXCC Rockstar: https://www.amazon.com/Ham-Radio-DX-Complete-Rockstar/dp/B0BNH93TS5

Thanks for Attending!

NCARC
Northern Colorado Amateur Radio Club