

Ham Radio

Alaska Homestead Expo 2024



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Jared Eison

HAM tech license – KI7CPI

Emergency Communications

Emergency Preparedness

Repeater building

Radio programming



Jessica Eison

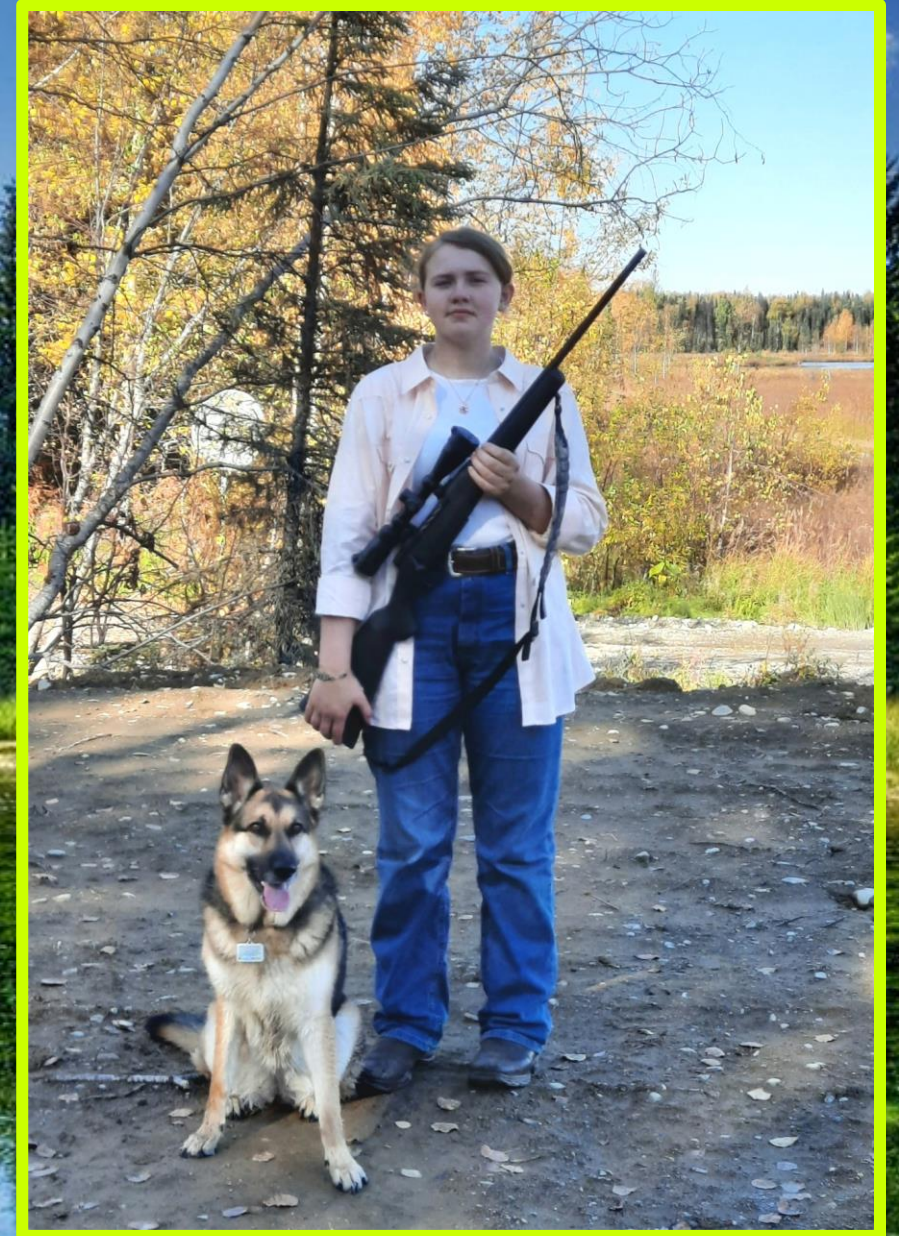
15 y/o, 10th grade

Former FEMA YPC Member

Enrolled Quinault Indian

HAM tech license – KJ7VMN

Wilderness First Aid & CPR certified



What is HAM radio anyway?

- A radio that uses direct radio communication or repeaters to communicate. This distance varies depending on the frequency band and power you use. Some bands need an advanced license to operate on. We are discussing the “2 meter” and “70 cm” bands that are used most often and need the basic Technician license.
- You can use a HAM radio to chat with your friends across town or even across states or countries.



Why Ham Radio?

- Talk with other licensed users
- No monthly fees
- No cell service needed
- Not reliant on grid (A Facebook crash for ½ hour started a panic)
- Can be used to reach the other side of the world
- Entry level radios are cheap
- Some systems allow phone calls

Other uses for HAM radio

- Check the weather
- Use it as a scanner
- You can hook it to a laptop to talk to other users around the world via laptop
- Send emails or data over some systems
- Check into emergency “Nets” as a visitor
- Meet new people

Let's review some history

In 1873, James Clerk Maxwell presented his theory of the electromagnetic field. In 1901 Guglielmo Marconi communicated across the Atlantic with a radio device using high power and giant antennas. To curb interference, Congress approved the Radio Act of 1912, which required amateurs to be licensed and restricted to the single wavelength of 200 meters. In 1914 the American Radio Relay League was founded by Hiram Percy Maxim, who found that messages could be sent more reliably over long distances if relay stations were organized. Transatlantic transmitting and receiving tests began in 1921 and by July 1960 the first two-way contact via the Moon took place on 1296 MHz.

Today we're on CW, phone, SSB, FM, packet, TV, PACTOR, PSK31, RTTY, and other modes, bouncing signals off the ground, ionosphere, and the Moon. Hams are active in nearly every country of the world and from ages less than 10 years to more than 100. (ARRL)

Some uses of HAM radio

- Most of the time HAM is used to talk with other people/ friends and family.
- HAM can be used for emergency communications.
- HAMs are used by; movie stars, missionaries, doctors, students, politicians, truck drivers and regular people.
- Military uses it overseas
- Aircraft use different bands to talk to air traffic control
- Ocean going fishing vessels use it to talk to each other and people on shore
- Coast Guard uses it a lot
- You can talk to astronauts and the space station!
- HAM can be used anytime you need to communicate to someone, regardless of where they are in the world



What can and can't I do?

Can's

- Talk to friends, people, family
- Program them yourself
- Build them yourself
- Talk to astronauts on the International Space Station (you can track it online and chat when its overhead)
- Help in emergencies
- Have communications without a cell phone



Cant's

- say swear words (bad words)
- Run a HAM radio without a license
- Let your friends talk on your radio without a license
- Transmit above your license frequency



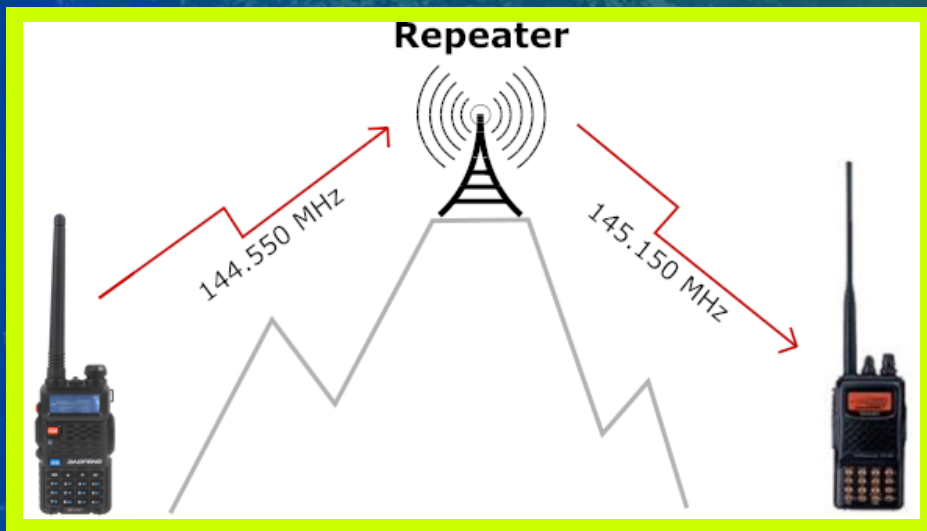
The different types of HAM radios

- There are 3 different types of HAM radio.
- 1. Handheld radios, sometimes called 'Hand talkies or HTs' the most popular handheld is a Baofeng.
- 2. Mobile radios, which are mounted in a vehicle (example: car, truck SUV, 4 Wheeler) they are installed like CB radios.
- 3. Base stations, typically in your home. With a large antenna, power supply and transceiver (antennas can be mounted to your roof or in your yard.)



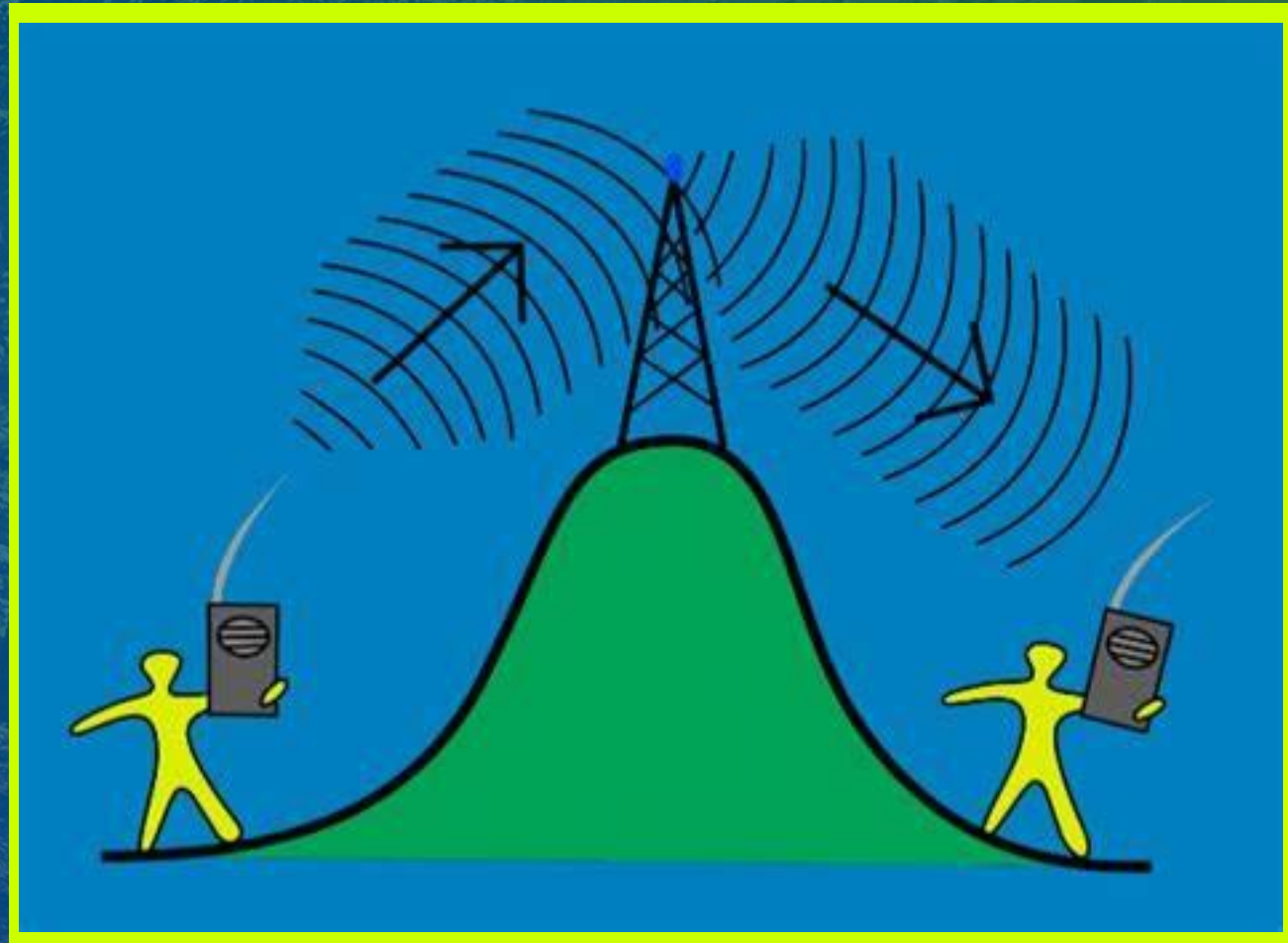


What is a repeater?



- A radio relay that retransmits signals from a high spot to reach distant users (The repeaters rebroadcast your voice on a separate channel as you are talking)
- Has an input frequency and output frequency
- Can be linked to other repeaters to cover a huge area
- Some have capability to make phone calls over the radio for cell phone dead areas
- Can be used by any licensed user
- They are either privately or club owned

Standard Repeater



A Look at How It Works

<https://youtu.be/6bWJ-IGults?feature=shared>

<https://youtu.be/Q8ruR7pfBcU?feature=shared>

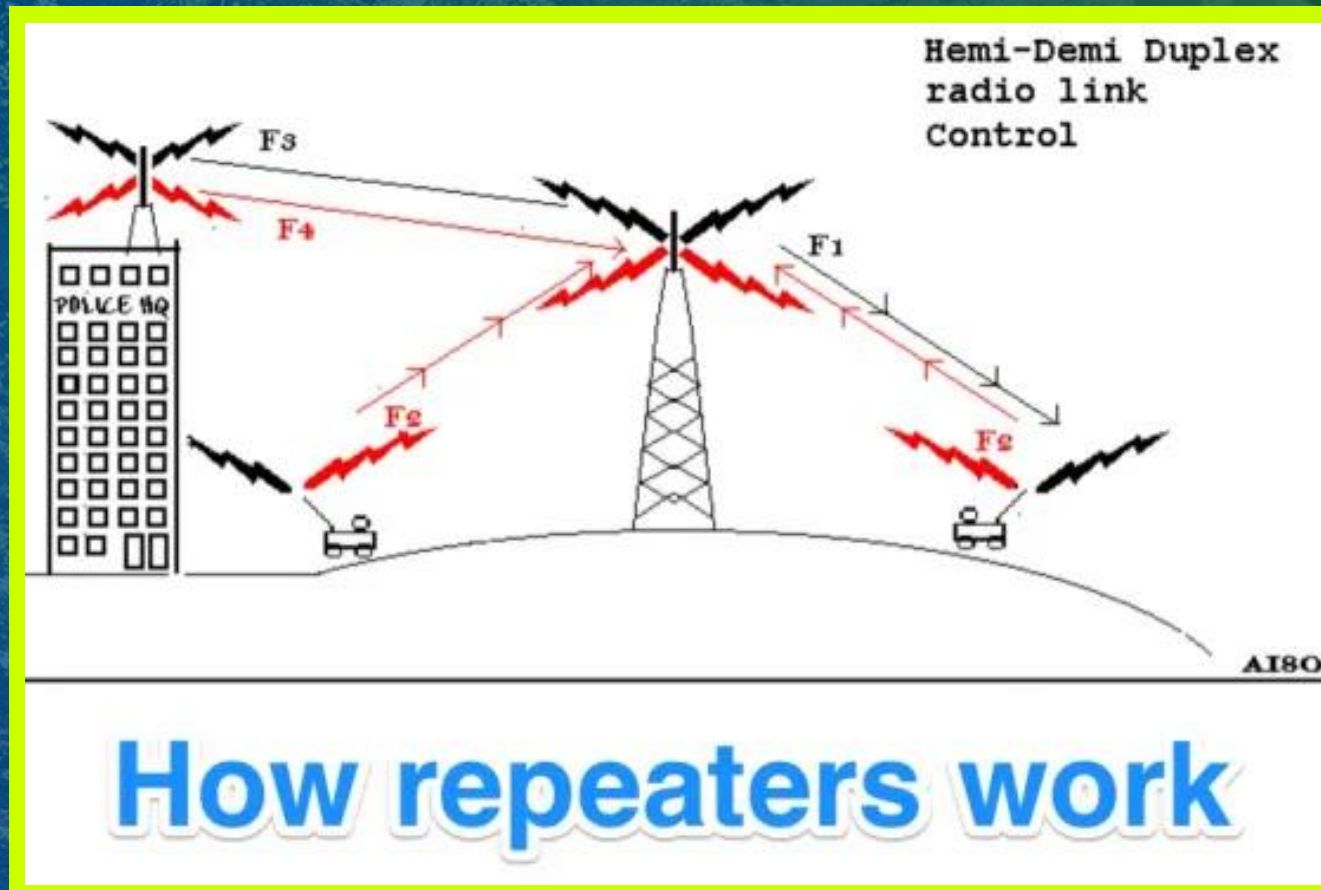
<https://youtu.be/yB9PH-UFgDA?feature=shared>

Linked Repeaters

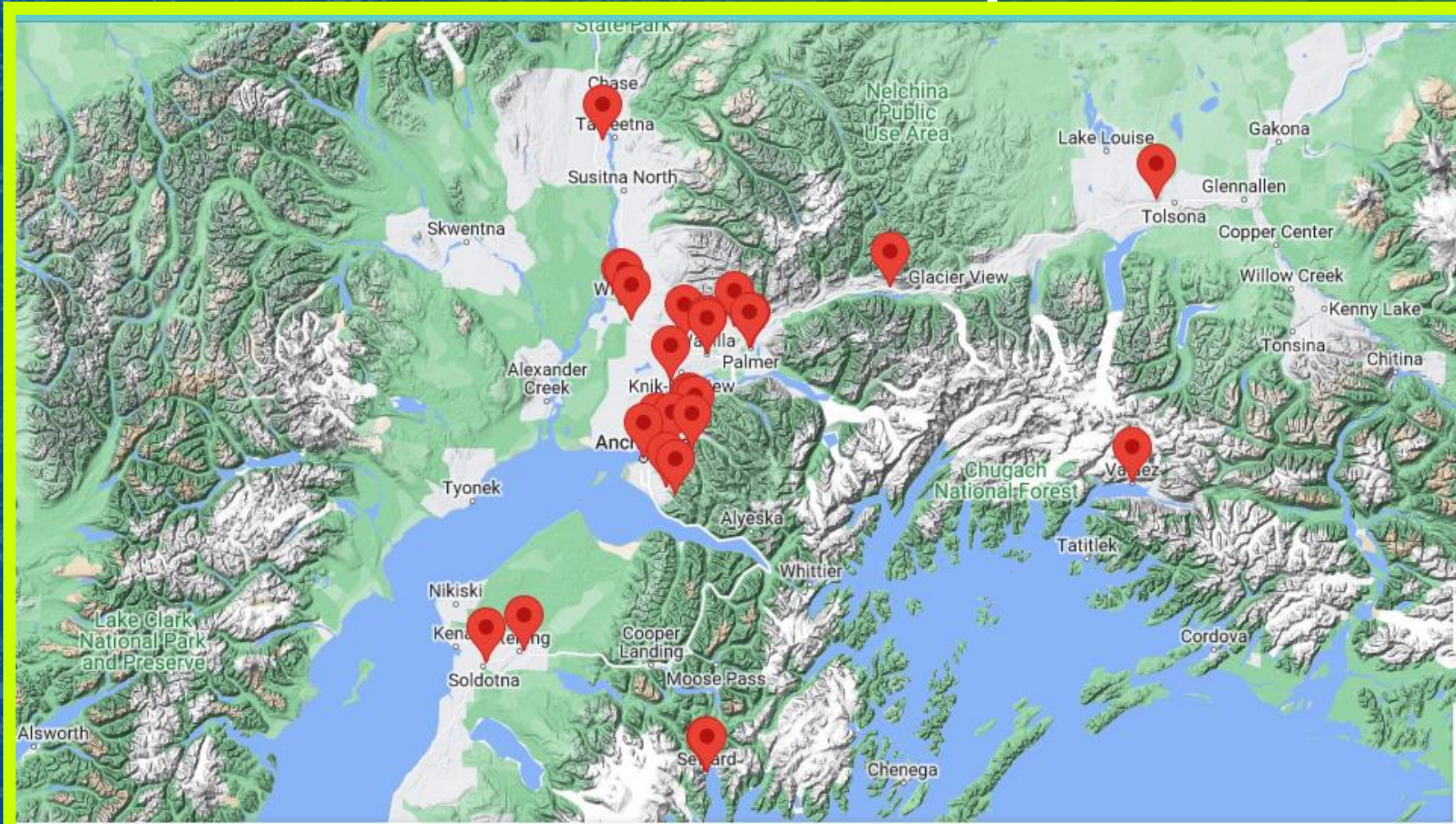
- Use 2 or more towers to rebroadcast the signal simultaneously
- Provides a huge coverage area by rebroadcasting your signal locally in areas that are out of range of the local repeater
- Uses another radio channel or internet to relay radio signals to every tower in that system



Linked Repeaters



Alaska 2 Meter Repeaters



Autopatch

(Radio Telephone Interconnect)

- Allows you to make phone calls over the radio
- 50W or more vs cell phone $\frac{1}{4}$ watt
- Must have capable system and access code
- Not available in all areas
- Only one person can talk, unlike a regular phone.
- Some systems allow incoming calls
- Supporting system owner is encouraged as a phone bill is involved





Helping with a disaster

- Several clubs/groups could use the help
- Can take update reports and needs from around your area
- Report needs and updates to emergency operations support personnel
- Relay these reports from outlying areas to the EOC when needed
- Receive updates from officials to pass along locally
- Do not transmit on Public Safety channels

How can you get your radio license?

- Anyone can get a license!
- There are many online study sites to use or you can go to an in person class
- Take the test, pass with a %70 or higher
- That's it! Then the fun begins when you start buying a radio and equipment.

Matanuska Amateur Radio Association has classes and testing available.

www.KL7JFU.com



The cost for basic HAM radio?



BAOFENG

UV-5R Two Way Radio Dual Band 144-148/420-450Mhz Walkie Talkie 1800mAh Li-ion Battery(Black)

★★★★☆ ~ 8,707

2K+ bought in past month

\$17⁸⁹ List: \$27.99

✓prime

FREE delivery Apr 30

Add to cart

More Buying Choices

\$17.15 (24 used & new offers)



BAOFENG

UV-5R Ham Radio Long Range UV5R Dual Band Handheld Two Way Radio Walkie Talkies with 1800mAh Li-ion Battery and Earpiece for Hunting Survival Gear,2 Pack

★★★★☆ ~ 1,143

1K+ bought in past month

\$33⁹⁹

Save 8% with coupon

✓prime

FREE delivery Apr 30

Add to cart



UAYESOK 6AA Battery Case Shell for BaoFeng UV-5R UV-5R Plus UV-5RE UV-5RE Plus UV-5RB TYT TH-F8 (2 Pack)

★★★★☆ ~ 49

50+ bought in past month

\$16⁹⁹

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6xAA Battery Case Shell for Portable Baofeng UV-5R UV-5RA BF-F8HP UV-5R+,UV-5R+ Plus BF-F9 UV-5RTP Series Rechargeable Extended Baofeng Accessories Battery Two Wa...

★★★★☆ ~ 376

100+ bought in past month

\$9⁰⁵

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Mobile/Vehicle Mounted Radios



QYT

KT-8900 20W Dual Band 2m/70cm Mobile Radios Car Transceiver with Cable

★★★★☆ ~ 306

\$80⁹⁹

✓prime

FREE delivery Apr 30

Add to cart



QYT KT-8900D Upgrade Version of KT-8900 Dual Band Mini Car Radio Mobile Transceiver VHF UHF Two Way Radio+USB Programming Cable

★★★★☆ ~ 153

\$79⁹⁹

✓prime

FREE delivery Apr 30

Add to cart



Motorola CDM 1250 vhf

Pre-Owned

\$129.00

or Best Offer
+\$15.00 shipping
5 watchers

Save up to 20% when you buy more



Motorola HT 1250 VHF Handheld

Pre-Owned

\$125.00

or Best Offer
+\$15.00 shipping



Motorola HT1250LS+ VHF 136-174 MHz 32 Channels 5 Watt LTR Trunk
AAH25KDF9DP7AN

Pre-Owned

\$119.99

or Best Offer
Free shipping
Free returns
3 watchers

- Old commercial radios are cheap
- Good TX/RX
- Fairly waterproof
- Tough
- Software & Cables are needed
- We can help program many Motorola models
- Not all are ham capable

Summary

- Amateur radio is a great way to communicate
- Anyone can get a license
- With the appropriate license you can talk to people in other countries
- You can talk to astronauts
- You can help in emergencies by relaying messages to emergency teams

This presentation is online at

www.lovingouradventure.com

This presentation is available to
watch on my YouTube channel;
The Adventures Of Kimber

Questions?

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