

# Saratoga — CERT

Radios

10/17/2020

Training

# The new Saratoga CERT Radios

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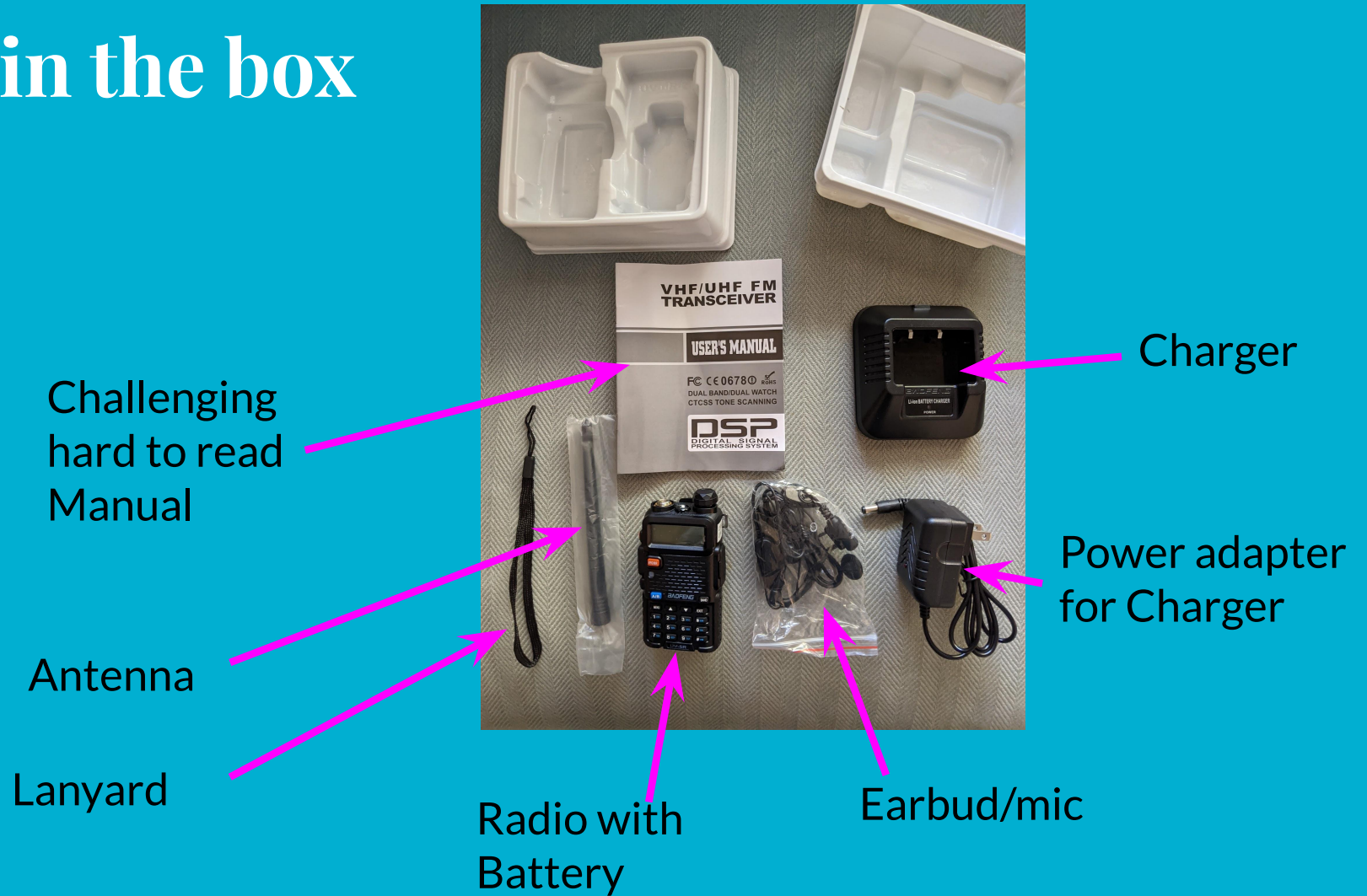
- Licensed Business Radios
  - Callsign WRJK887
  - Should use it every 15 minutes
- Sharing frequencies with other “business” users
  - Be considerate, and listen before transmitting
- Licensed for use in Saratoga
  - Don't take them to Tahoe and use there

# The Radios Presentation

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- Goals
  - Learn about the radio
  - Understand how to use the radio
  - Understand how to care for the radio
  - Play with the radios a little

# What's in the box



# A quick button tour

Short push -- FM Radio  
Long push -- annoying alarm

Push to Talk

Long push Monitor -- Hear noise/signal  
short/quick push -- flashlight

Switch upper/lower channel on display

On/Off Volume

Channel UP/DN

Press and Hold 3S

Scan

Battery  
Voltage

Keyboard Lock



# Charging the Radio

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Plug the power adapter into an outlet

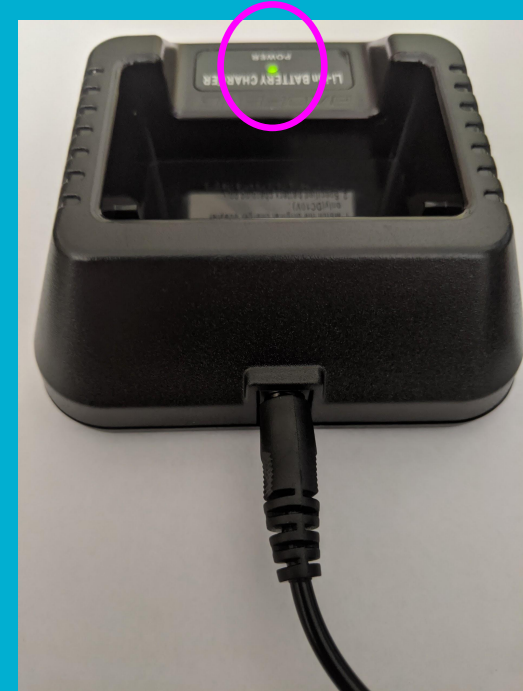
Plug the round connector into the back of the charger (Led on charger is green)

Place radio in charger (Led red while charging)

Wait for charge to complete (Led green when finished)

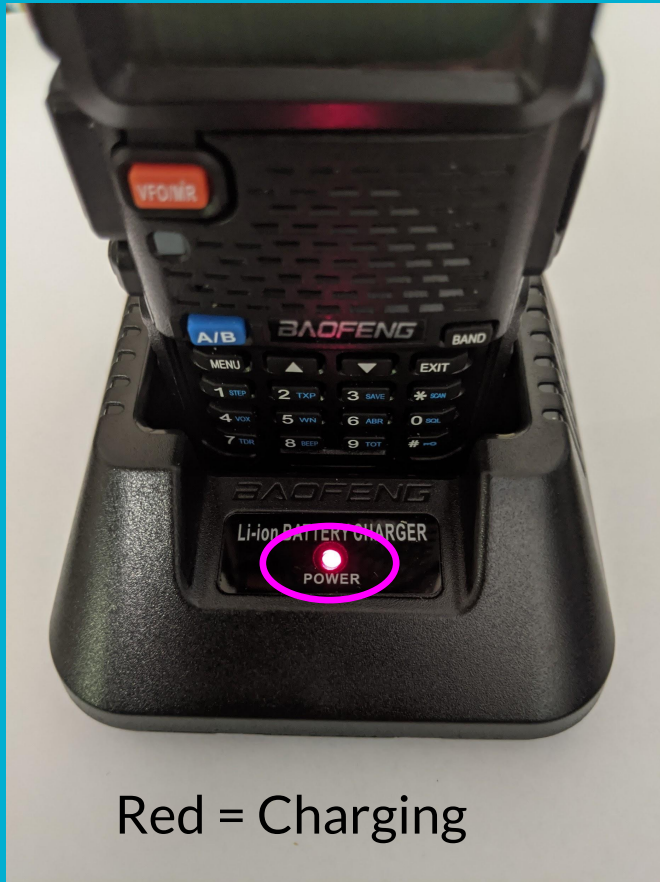


Led Is Green. 👍

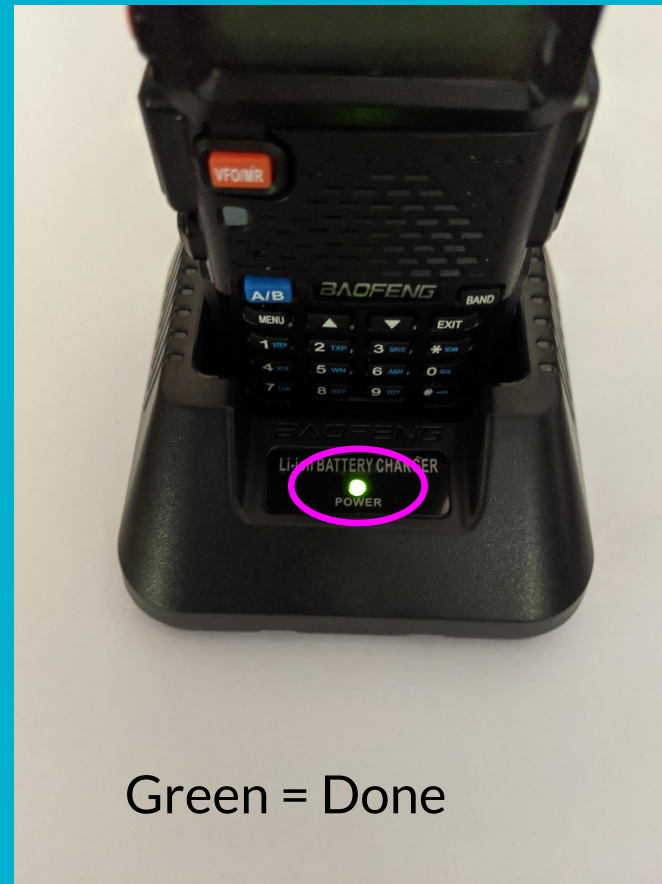


# Radio Charging

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Red = Charging



Green = Done



# Putting the Antenna on

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Screw antenna into  
Radio top.

Rotate clockwise to  
Screw on

Tighten only finger  
tight

Don't turn on radio  
without antenna in  
place





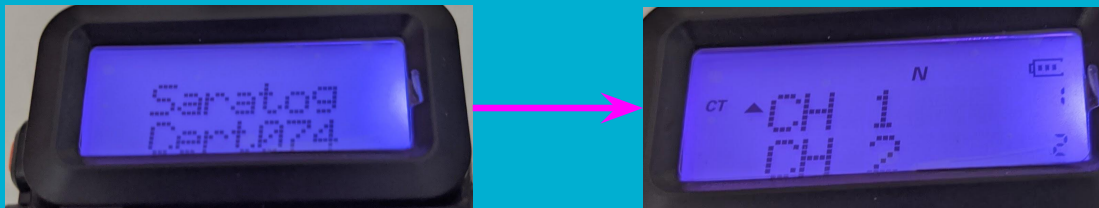
# Turning the Radio On

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Turn on/off volume knob clockwise

You will hear a click, go about  $\frac{1}{4}$  turn more to turn up the volume

You should see:



# Caution on VFO/MR button

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This radio must be operated with the display showing 'CH'

If you don't see CH, press the VFO/MR button

You should see CH



# Earbud/microphone

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Rubberized cover. Lifts up from front

Two round connectors.

Both Mic and speaker

Larger one is the lower of the two

More pictures later



# Removing the Battery

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Depress the battery release

Everything is black, hard to see in the pictures.

I have a red baofeng without a belt hook, and with a black battery release. This makes it easier to see.



# Depress the battery release

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Next to belt loop clip. I like to use my thumb.

While holding the release down, gently slide the battery down with your other hand.



# Battery removal

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# The battery

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The battery has the CERT radio number on a sticker. If batteries are swapped in a drill or activity, the battery can get back to the right radio. Leave the sticker on the battery.

The battery can be charged in or out of the radio.





# Putting the battery back in

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First depress the belt clip to raise it out of the way

Slide the battery towards the release button.

Keep the battery flat with the radio. Don't try to angle it in.

At the end, there are two little nibs that go in holes in the battery. The battery must be down all the way for this to happen.



# Seat the battery

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For the last bit of motion, press down and in on the bottom of the battery. You will hear or feel the battery release click.



The battery should be flush with the case bottom.

# The earbud/mic

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The earbud is on a post. It may be adjusted up or down.

The mic has a push to talk button, and should dangle near your chest/chin.

You can transmit by pressing on the button and then talk.



# Where to plug in the earbud/mic

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# Insert the earbud/mic connector

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Insert as straight as possible.

This picture is angled  
So you can see the  
orientation.



**Make sure the radio is powered off before installing earbud**



# Straight in

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Seat firmly with gentle straight pressure. Make sure it is all the way down and seated.



# The Radio has an on/off switch

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The Battery will be damaged if discharged too deeply

Turn off the radio. It does not turn off by itself

I suggest taking out the battery when storing the radio. Put it in a baggy to prevent shorts



# Extra Batteries

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- Battery life depends heavily on how the radio is used
- I typically get 4 to 8 hours from a radio with light talking
  - A net control might get 2 hours or less
- Extra batteries are nice
  - They cost about \$10. A double capacity is < \$20
  - If you plan on being net control, get one or more
- You have to keep them all charged...

# Additional battery vendors

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[www.radioddity.com](http://www.radioddity.com)

[www.amazon.com](http://www.amazon.com)

Search for UV-5R battery

# Additional Radios

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- Our license is for 85 radios
- We have 85 radios
- The license is maxed out
  - A personal radio cannot be added to the FCC license at this time
- Get your Ham License 🤔
  - A whole new world awaits

# Radio Range

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Your mileage will vary

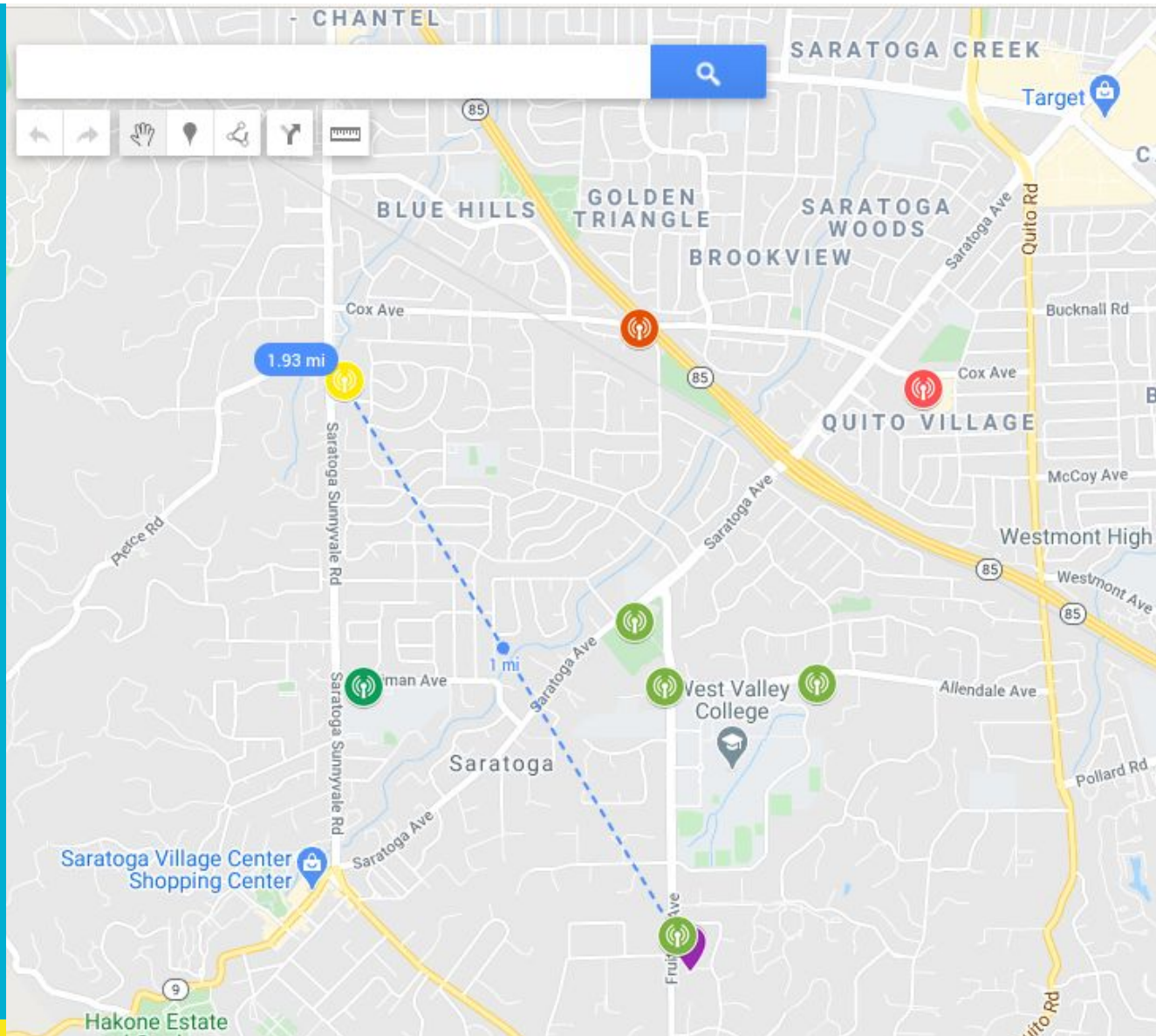
Son and I did a quick range test.

Son at house with CERT078

Me in Car driving around with CERT074

Son near odd fellows

Worked well to 1.5 miles  
Scratchy at 2 miles



# Range depends on many things

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Terrain

Hills, buildings, trees ...

Obstructions

Indoors/outdoors

Elevation

# Frequencies and Channels

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Saratoga has a business type license

The license allows operation on 5 frequencies

The frequencies are shared with others in the area



# Privacy tones

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A privacy tone is transmitted

You don't hear it

The radio won't turn on the Audio unless it receives the tone

# Radio Channels

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5 frequencies

Each Frequency programmed 3 times

3 different tones

All CH 1 are on the same frequency (1, 1B, 1C)

# Changing Channels

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- The radio has two channels displayed
  - These can be the same or different
- The top one is called 'A', the bottom channel is called 'B'
  - Switch back and forth between 'A' begin the active channel and 'B'
  - Press the A/B button
- You change the active channel number using the up and down arrow buttons
  - ▲ Moves up the channels 1→2→3→4→5→1B→2B... 5C→1
  - ▼ Moves down the channel list in reverse order



# CERT teams need to select frequencies

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Will develop over time

Tonight, we will use channel 1

# Courtesy

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Don't transmit when another person is transmitting

The front light green -- Frequency in use

You may not hear anything

if the other station is using a different tone

Radio doesn't turn on audio

# If two talk at the same time

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All the other stations hear is mangled garbage

Use a net control. Wait your turn. Be patient

# Operating Tip I

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1. The FM radio may be used to listen for emergency information
  - a. A CERT radio will silence the FM radio
2. You can type in a frequency such as 106500 for 106.5 when the FM radio is playing to change channels
  - a. The channels are not remembered
3. Some find listening to the radio boosts spirits



# Operating Tip II

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1. Use the radio scan function to find out which frequencies are in use
  - a. Press and hold \* for 2 seconds.
    - i. The radio will scan the CERT frequencies and tones
    - ii. It will stop when it hears a transmission
2. Don't leave it on too long as it consumes battery

# Operating Tip III

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1. Check the battery voltage
  - a. Press 0 for 2 seconds
2. A fully charged battery is about 8.2 to 8.4V
3. Don't go below 6.8V
  - a. You risk damaging the battery
  - b. When you transmit, the voltage drops, and the radio resets. You can't communicate.

# Operating TIP IV

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1. If the audio goes on and off, press the moni button
  - a. Below the push to talk on the left side facing the radio
2. Will open squelch
  - a. You will hear noise and everything
3. Helps copying a scratchy or marginal station

# Explore the Radio time

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We will go back to the buttons, and try the radios.

Everyone tune to ch 1

# Good practice I

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When you know the frequency your team is using

1. Select the Frequency
2. Lock your radio
  - a. It's easy to bump a button, and be on a different frequency
  - b. Hold # button for 2 seconds to lock/unlock

# Good Practice II

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Talk normally into the radio about 3 inches from your mouth

Some turn the radio to the side

Shouting or talking very loud distorts the received signal

## Good Practice III

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Wait 1 second after pressing the Push to Talk button before talking

1. It gives the other radio time to decode the tone, and turn on the audio
  - a. Otherwise the first few words will be missed

# Good Practice IV

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Talk slowly and clearly

1. The other operator may have a lot of distractions
2. They may be trying to write down your message



# Good Practice V

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Plan what to say before you use the radio

1. Easy to forget things when giving information
2. Do it right once, not multiple times
3. If possible, write down a complete message
  - a. ICS forms are great for this

# Good Practice VI

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## Keep a paper log

1. In a real activation, there will be managed chaos
2. People will want to know if messages have been delivered
3. People will want to know message responses
4. You will be stressed, and can't keep everything in memory
5. You want to pass responsibility to another. They need the log

# Good Practice VII

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1. Keep your radios charged
  - a. Charge at least monthly
2. Keep the battery in a plastic bag
  - a. Then it won't matter if the radio is accidentally left on
3. Use the radio once a month
  - a. To remember how
  - b. Develop muscle memory using the radio
  - c. Stay in touch with your CERT friends

# Good Practice VIII

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1. Prepare for bad weather/long activations
2. Put an old bread bag in your CERT backpack
  - a. Put the radio in the bag, and use as normal in the rain
  - b. The sound will go through the bag
3. Use the radio flashlight only when your main flashlight fails
4. Use the FM radio to stay awake and informed if required
  - a. A CERT frequency will override the FM radio

# The END

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Or just the beginning of learning and using your new CERT radio