

Community Communications

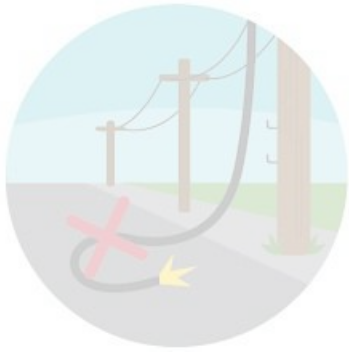
Baofeng BTech Radio

South Tillamook County Emergency Volunteer Corps (STCEVC)

Building a climate of Resiliency in South Tillamook County, Oregon

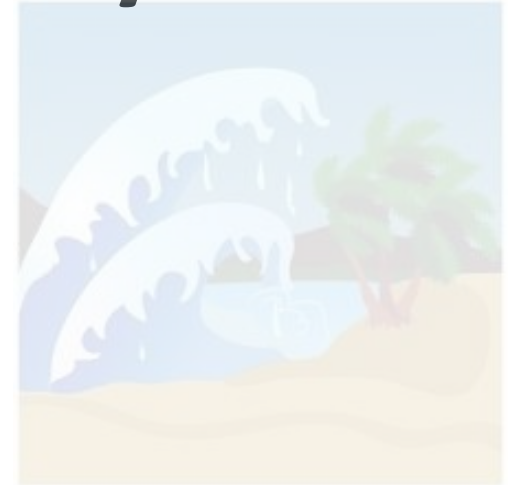
Gary Dunn, KI7BDW

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There's an emergency!

What happened?
Will I be impacted?
How can I find out?



How do you receive information about emergencies?



And then!!

No Phone!

No Texting!

No Electricity!

No Internet!

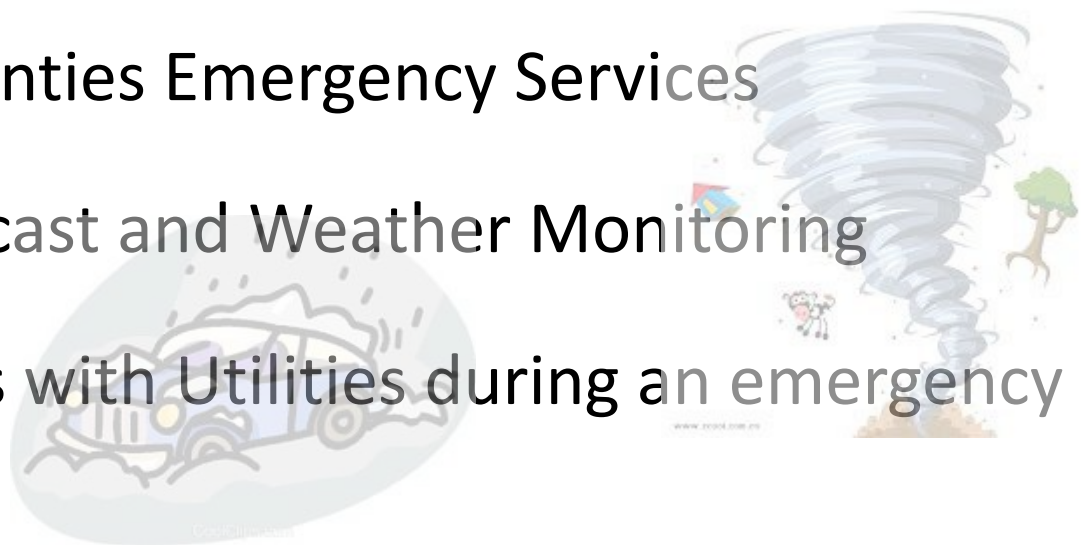
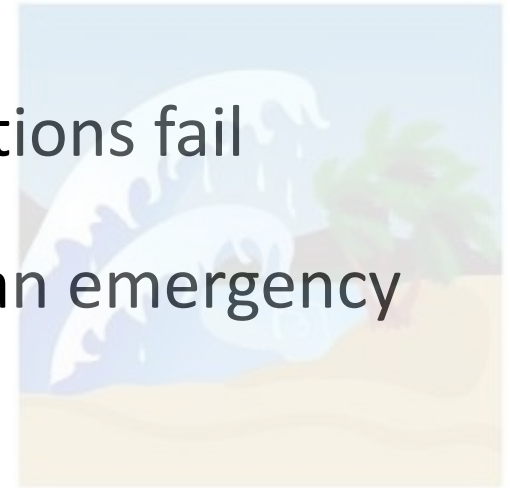
No Television!

When other methods fail, You can use your GMRS

RADIO for communications

Why have a GMRS Emergency Radio?

- Call for help when other communications fail
- Stay in touch with neighbors during an emergency
- Health and welfare checks
- Provide situation reports and request resources
- Monitor the Counties Emergency Services
- FM Radio Broadcast and Weather Monitoring
- Communications with Utilities during an emergency



Other Options

- Satellite
 - Satellite Telephone
 - Internet using Starlink (or Hughes Net)
- Become a Ham Operator
 - HF/UHF/VHF/EMail

Class Objectives

- BTech Radio Basics
 - TroubleShooting
- Starting to Talk
- STCEVC Communications Approach
- STCEVC NETS
- Next Steps

BTECH Radio Basics

Turning On



On/Off/Volume Knob

You should hear “Channel Mode” and see channel names or frequencies

If you hear “Frequency Mode” and see numbers, turn your radio off, then Press and Hold the menu button while turning the radio on to get back to “Channel Mode”

Navigating the Display

Two line display

Each line shows:

- channel name or frequency
- Arrow shows active channel



Exit/AB button switches between lines on display

Up/Down Channel button

Entering and Changing Channels

Channel Numbers are 3 DIGITS!

1. Select Row:

- **Exit/AB** button selects top or bottom line
- Arrowhead shows selected row

2. Enter New Channel:

- Enter 3 digit channel number using keypad

Try It:

- Enter 001 on top line
- Enter 021 on bottom line



Push To Talk (PTT)

Dual PTT Rocker Switch:
Large black buttons on
left side of radio

Press PTT upwards to
transmit on 'Top' Channel A

Press PTT downwards to
transmit on 'Bottom' Channel

B

When finished talking,
RELEASE the PTT
button and LISTEN

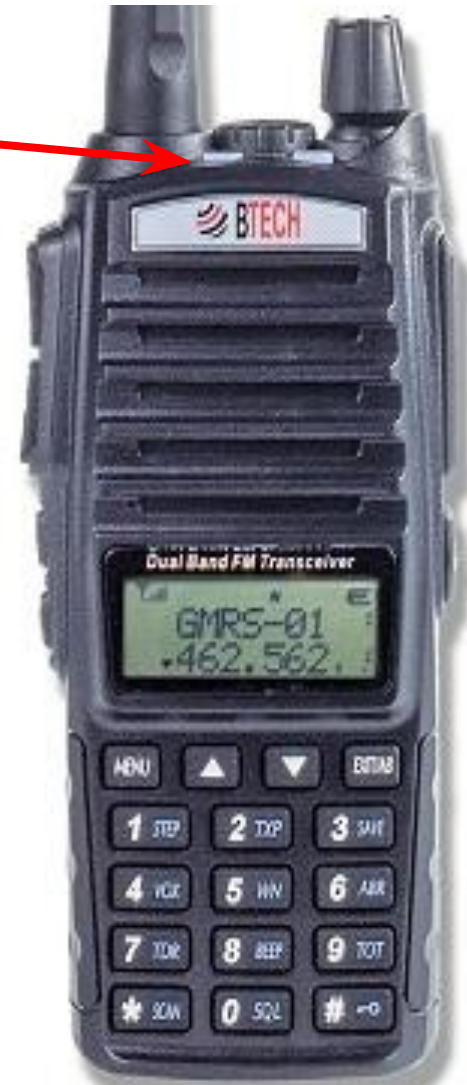


Green Light = Stop

Indicator light above A/B button

- **OFF:** OK to press PTT and talk, channel is open
- **RED:** You are pressing PTT, no one else should talk
- **GREEN:** Someone else has pressed PTT, you do not talk

Only One Person at a Time Talks



Other Radio Emergency Features

- FM Radio
 - 'F' Side Key
 - Press momentarily to start the FM broadcast
 - Another momentary press turns FM off
 - Press and hold turns alarm on and off



Other Emergency Features

- Pre-Programmed Scanning
 - Scan a range of local channels to pickup multiple broadcasts
 - To enable the scanner, press and hold the key for about two seconds.
 - Press any key to exit scanning mode



Troubleshooting

Keypad Not Working? It Might be Locked.

- Press & Hold **# KEY** (on keypad) for 2 Seconds to Lock or Unlock
- Key symbol shows that keypad is locked

Key (Locked) Symbol

- Lock the keypad to stay on same channel.



Display Showing All Numbers?

You are in Frequency Mode.

Turn your radio off, then Press and Hold the menu button while turning on to get back to “Channel Mode”

Correct Channel?

- **Not Hearing What You Expected? Are You On the Right Channel?**
 - Check display to make sure that you are on the Active Channel you want to be on.
 - Use **Exit/AB** button to switch between the two rows of your display.

Lost or Confused?

Turn the radio off and back on again if you get lost or confused, the display isn't showing what you expect, or you think you've missed a step. This will get you back to "Square One" and you can start over.

Battery and Antenna

- Once the radio's battery is charged, the battery should be removed from the charger to avoid damage
- You should turn your radio off when changing the antenna or adding an external mic
- Baofeng BTech Radio can be Programmed for STCEVC Channel List

Starting to Talk

Having a Good Signal

- In our area, radio signals are blocked by lots of trees and hills
- For improved communication you can try
 - Keep antenna vertical
 - Find the highest point available
 - Move away from metal objects
 - Go outside/Get out of your car
 - Move a few feet in different directions
 - Difficult locations may need more power and an external antenna

Your Communications

THIS IS A RADIO, NOT A CELL PHONE!

- Conversations are BROADCAST to anyone listening on the channel
- Do not transmit private or sensitive info!
- Use your CallSign to minimize privacy risks

Be Courteous & Concise

- **Be brief and to the point**
Plan what you want to say
- **Only one person can talk at a time**
If the light is **Green**, someone else is talking.
Green = Stop
- **Leave a few seconds between transmissions**
Someone may need to “Break In”

CallSigns

- What is a CallSign?
 - They identify the radio user while maintaining an acceptable level of anonymity
- Different CallSigns used by SCEVC members
 - SCEVC GMRS CallSigns
 - FirstName, First initial of LastName
 - CERT CallSigns:
 - Tactical call sign used at the time of an incident
 - NET Control CallSign
 - HAM Call Sign, or FCC GMRS License Number

Starting to Talk

- **Listen** (wait for a break in talking, light is off)
- **Press PTT**
- **Take a Breath** (allow radio link to complete)
- **Talk approximately 1 to 2 inches from the Microphone**
- **“Hey You, It’s Me”**
 - Say name of person you are calling (“**Hey You**”)
 - Say your name (“**It’s Me**”)
- Say “**Out**” when ending a conversation
- **Release PTT & Listen**

EXERCISE 1: A Simple Conversation

Set channel to GMRS 06, Channel 006

Instructor leading a Radio NET: JohnQ, This is Net Control. Are you checking in Tonight?

GMRS Communicator: Net Control, this is JohnQ. Yes I am checking in.

Instructor: JohnQ, this is Net Control. I copy your check in. Thanks. Out.

STCEVC Communications Approach

STCEVC Approach

- STCEVC Communications supports residents within the Nestucca Rural Fire Protection District
- Because of its size, we have broken the District up into Geographic areas called zones
- Within a zone, communications is supported by a network of GMRS communicators
- Across zones and out of area communications are coordinated by Ham operators, using Ham Radios

GMRS Radios

- Within a Zone, GMRS radios are used to form a community communications network
- Each Zone is assigned a primary and secondary channel
- Each Zone is managed by a Net Control
- Testing is required to ensure communications work from your location
- <https://southtillamookcountyevc.org/communications-zones/>

SCEVC GMRS X-Zone Network



Google Earth

Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

3 mi

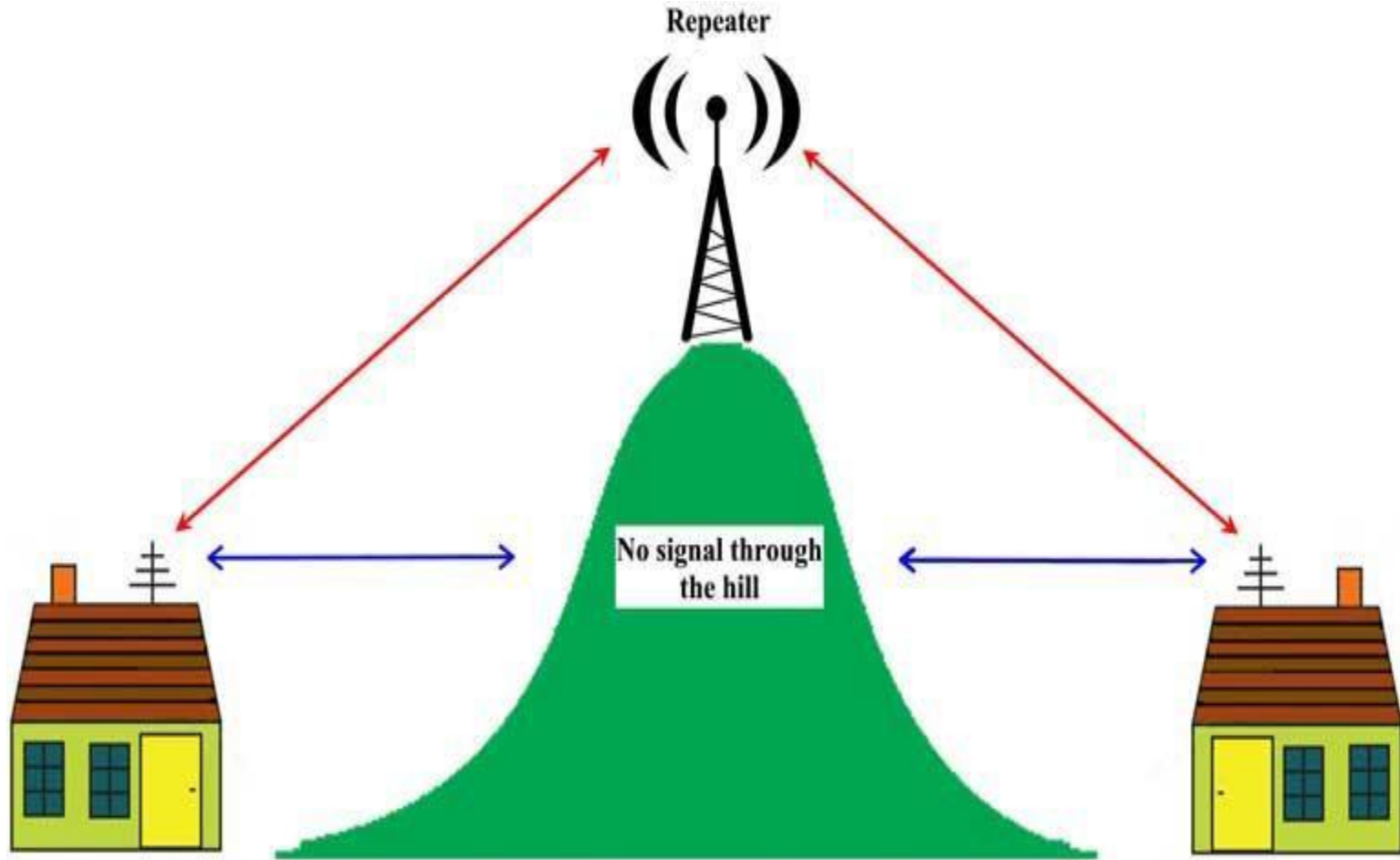
STCEVC Zones and Channels

Zones	Primary GMRS Radio Channel	Secondary GMRS Radio Channel
1 (Slab Creek)	018	022
2 (Neskowin)	015	021
3 (Pacific City)	016	020
4 (Tierra Del Mar)	017	019
5 (Cloverdale)	019	018
6 (Hebo)	020	017
7 (Beaver)	021	016
Sand Lake	022	015
Blaine	018	022

Ham Operators

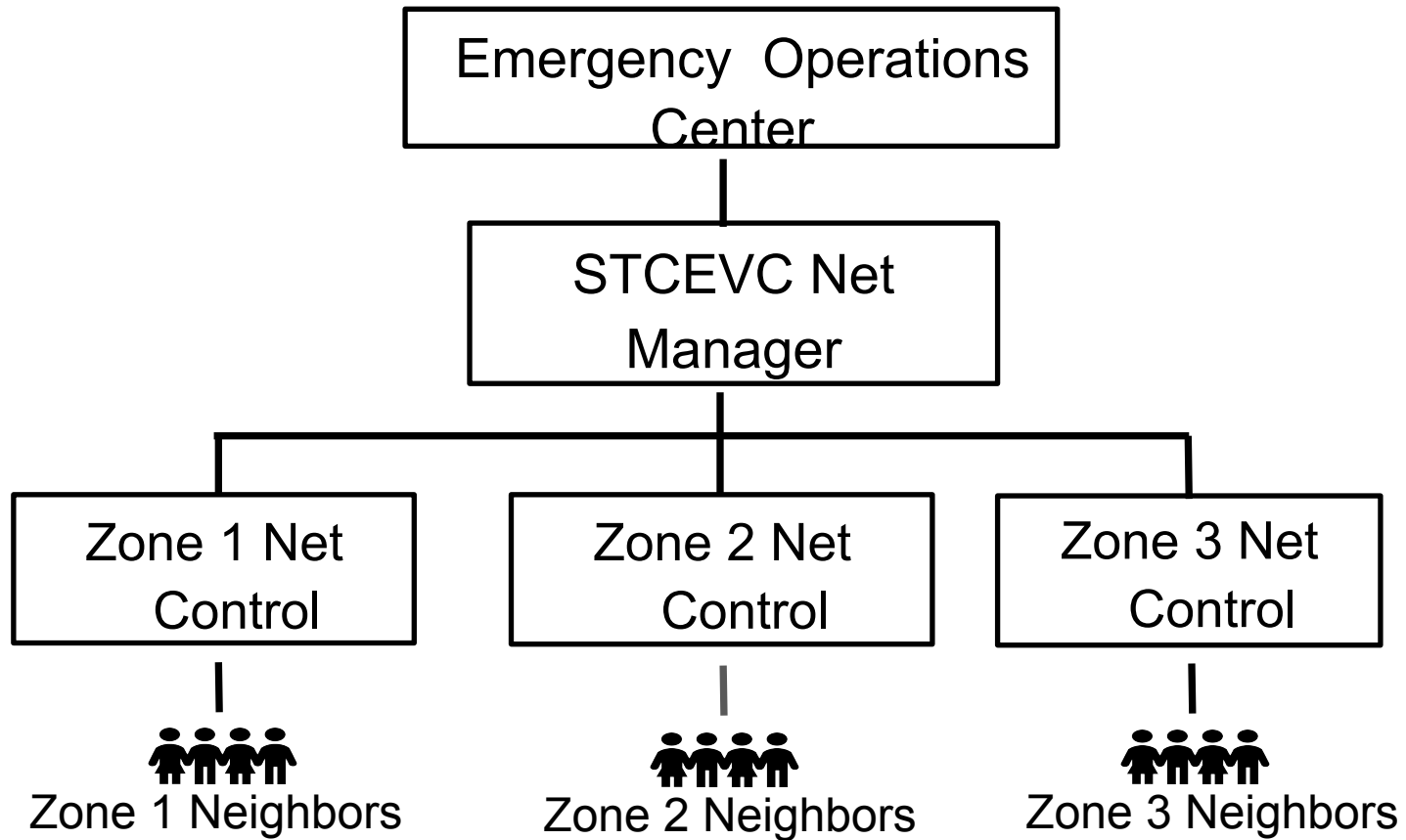
- HAM Operators are tested and licensed by the FCC. They can utilize Repeaters to increase the distance of local communications, and use more powerful equipment for Out of Area communications.
- STCEVC Hams assist with:
 - Developing an auxiliary communication strategy for South County
 - Coordinate Out of Area communications and communication within and across Zones
 - Provide help communicating with the Counties Emergency Operations Centers, Schools and Utilities

What's a Repeater?



Communication only possible by bouncing the signal through the repeater

Zone Communication Rollup



STCEVC NETS

What Is a NET?

- A group of radio users on the same channel exchanging information
- A system for managing radio communication to avoid chaos

What is Net Control?

- An individual on a Net who controls/ facilitates all communication on the Net
- A Gatekeeper - All communication on a Net must be directed through Net Control

Our Challenges

- We have many zones to coordinate
- We lack a communications presence in some zones
- During an emergency, we will have many people trying to communicate at the same time
- Talking slowly and clearly so we transmit accurate information
- Being prepared

STCEVC Monthly Net

- Occurs the 2nd Wednesday of the month, at 6:00 PM
- Focused on communications readiness and training
- Tune to your zone channel
- Net Control will call out for attendees
- Once checked into the Net, wait for further instructions from Net Control

Note: Not every Zone has a Net Control

Checking in to an Emergency Net

- Tune to your zone channel & listen
- Attempt to contact the Net
 - Net Control, this is (CallSign), Over
 - “Net Control this is (CallSign) checking in, Over”
- If no reply at first, keep trying!
- Once checked into the Net, you would wait for further instructions
- Let Net Control know when you leave

If You Have Information for the Net:

1. Listen for a Pause

Wait until no one is talking (no light)

2. Identify Yourself to Net Control

“Net Control, this is (CallSign) with traffic, over”

3. Net Control Acknowledges You

“Go ahead (CallSign), over”

If Net Control doesn't acknowledge you, you weren't heard. Try again!

4. Give Your Information

Next Steps

Next Steps

- GMRS Communications Testing
 - Identify who can you communicate with
- Identify your Net Control
 - They can provide assistance
- Participate in the monthly GMRS Community Radio Net
 - 2'nd Wednesday of each month at 6:00 PM
- Ham radio operators are very important to our emergency communication strategy. We encourage you to obtain your Ham License.
- Join the South County Communications Committee

GMRS Licensing

The FCC has clarified that a license is required to use radios on the GMRS frequencies.

STCEVC recommends that all GMRS Radio users obtain a License

A GMRS license

- Is good for ten years
- Is valid for the licensee's immediate family
- Cost is \$35.
- No exam is required
- Instructions are posted to STCEVC Website
 - <https://southtillamookcountyevc.org/gmrs-radio/>

Accessories

- Nagoya NA-701C 8" Whip Antenna
- External Mike/Speaker Baofeng BF-S112 Two Way Radio Speaker or others are available
- Radio Batteries
 - BL-8L 3600 MAH Extended Battery
 - UV-82 AAA Battery Pack
 - UV-82 Battery Eliminator (Adaptor for car)
- Generator or Solar Panels for running or recharging your radio accessories



BL-8L 3600MAH EXTENDED BATTERY

BAOFENG UV-82 AAA BATTERY PACK