

Radio Communications

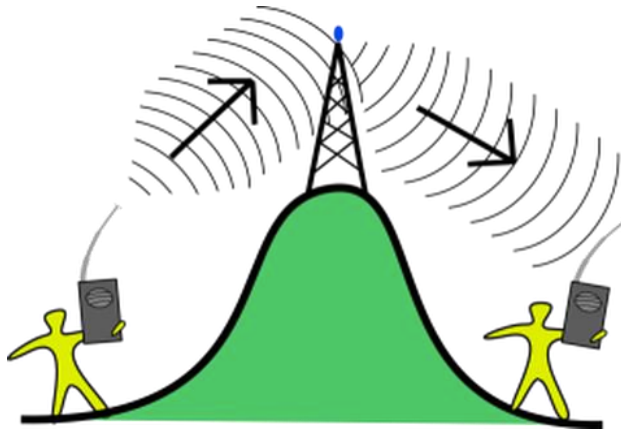
Citizen Patrol (CP) members are authorized and encouraged to utilize radios (like “walkie-talkies”) to enhance communications within the Corbett Community. Radios are much more useful than cell phones when communicating with fellow CP members during patrols. *Whereas cell phone only allow for two members to communicate, radios allow for large groups to communicate simultaneously.* The Corbett Community Network (CCN) consists of CP members, the local Corbett Community Resource Deputy and selected members of the public or any business within the Corbett area. Everyone within this radio network is integral in listening to and reporting what’s going on in the community. **HOWEVER, THIS DOES NOT REPLACE THE 911 or NON-EMERGENCY# DISPATCH SYSTEM.** CP and CCN members may be issued a radio if available, or members may purchase their own radio for as little as \$27 on Amazon.com..

Due to the many types of radios, understanding them can seem difficult. For example, you may hear about: *FRS radios, GMRS radios, UHF radios, VHF radios, 800 mega-hertz radios, CB radios, HAM radios, Commercial radios and Marine radios!*

As a CP member, you’ll receive hands-on training that teaches you the differences in the varying radios and how to use your assigned radio(s) effectively. Generally, CP members will use an inexpensive handheld radio, a “go-radio” (discussed later), or a “mobile” car-mounted radio. All of the radios will be pre-programmed via a computer to operate on specified channels. You’ll learn which channels to use for various situations. However, CP and CCN members will primarily use channel 1 and channel 2. These channels have frequencies that have been assigned to us by the Federal Communications Commission (FCC). Channel 1 is used for the Corbett *Repeater*.

What is a Repeater?

A repeater is basically a set of radios, perched on a hilltop or other elevated area. The repeater can “hear” a person talking on the channel as it simultaneously transmits the person’s voice (or even a data signal) to other users. This allows for two or more users to communicate, even when a mountain, rough terrain or lengthy distances would otherwise prohibit communications.



The Corbett Repeater is situated on a hilltop in our area. It's important for radio users to understand where the repeater is located in relation to where you're located when using the radio. Radio users will have a better understanding of a radio capabilities and limitations by understanding a *topographical map*. Please refer to this topographical map below.



Topographical maps are commonly used among hikers, outdoorsman and the military because they allow the map reader to know the terrain or “layout of the land”. The maps have red “squiggly” contour lines that represent elevation changes, steepness, peaks and valleys. You’ll notices that some of the lines near the bottom center show elevations of 2500 and 3000 feet. These contour lines allow a map reader to read the elevation and

terrain. By looking at the 2500 and 3000 foot lines and the map's scale (i.e. 1 inch= 1 mile etc.) a map reader can see there's a fairly gradual 500 ft. elevation change. However, if the lines are very close, it may represent a cliff. If they're far apart, the area is relatively flat. By understanding topographical maps and the terrain of an area, you can determine if a radio signal will work or if it'll be obstructed.

Be aware of the repeater's location and your location, along with obstacles in between. If you have a small handheld radio, you'll need to be in "line of sight" of the repeater for a strong signal. Thick structures such as concrete walls and natural obstacles such as hills or deep valleys may obstruct a signal. If you're too far away you will not be able to reach the repeater. *YOU MIGHT be able to hear a strong incoming signal yet still be too far away to talk via the repeater.* This is because the repeater has over five times the transmission (sending) power of a typical handheld radio. If this happens, move closer to the repeater or to a less obstructed area.

The CP also has authorization to use the Multnomah County OEM (Office of Emergency Management) Repeater, however the CP is discouraged from using this repeater for patrols and day-to-day activities unless absolutely necessary. The latter repeater is located west of the Corbett area. The CP also uses a CP "simplex" (or radio-to-radio) channel that bypasses the repeater. Simplex is basically like using a walkie-talkie that talks radio-to-radio. Be familiar with where each of the channels are located on your radio. For example, *Corbett Simplex* may be on channel 2 on your radio, but it may be on a different channel on another radio. A channel is basically a "shelf" to put a frequency.

Frequently Asked Questions:

"Mobile" car radio vs. a handheld radio:

A handheld radio has much LESS send/receive ability than a "mobile" car radio. This is due to the antenna AND the power output. Our handheld radios generally have 5-watts of output power. The bigger "mobile" radios in the CP vehicles have around 25-watts of output power. That's five times the power as the handheld radios. A larger antenna also acts as a larger "ear" that can detect weaker signals and it can also strengthen outgoing signals.

Where's the coverage for the Corbett Repeater?

The best coverage is between Wood Village and Cascade Locks, along I84 and the upper "crest" of Corbett along E. Columbia River Hwy. and along Larch Mt. Rd.. You may have coverage south of E. Columbia River Hwy., however this depends on the terrain. You'll likely not have coverage along Gordon Creek and into Aims via this repeater, however you may have some "spotty" coverage along the way. You'll likely have *no* coverage along E. Columbia River Hwy. between Dabney Park and the Troutdale Bridge.

Where's the coverage for the County OEM Repeater?

The best coverage is between Sauvie Island, downtown Portland, 1000 Acres and the Corbett SAT office. The coverage generally stops at the Sandy River due to the cliff and increased elevation on the east side of the river. However, there is coverage in Howard

Canyon (along Howard Rd) and good coverage in Aims. Again, this is quite variable depending if you're using a handheld or mobile car radio.

Consider using simplex (radio-to-radio) when a repeater is too far away:

Don't always rely on the Corbett or OEM repeaters. You may be too far away from the repeater or your radio signal may be blocked by a mountain or dense vegetation. It's also possible that the repeater(s) may be inoperable or really busy during a disaster. When our CP members worked the grand re-opening of the Sellwood Bridge detail, members couldn't reach either of the repeaters. This was a good time to use a simplex channel (channel 2 on our radios).

Why do I hear talking on the radio but they can't hear me?

There are two likely explanations:

- 1) The person you hear may be talking on a more powerful radio and/or may have a better antenna. Remember, if you're using a 5-watt handheld "walkie talkie", you may be able to hear powerful incoming signals from a repeater or stronger radio, yet your weaker, "walkie-talkie" transmission signal, combined with a small antenna won't allow for people to hear you.
- 2) Another possibility is that you're on channel 1 (the Corbett Repeater channel) and not on channel 2 (the Corbett Simplex channel). If you're on channel 1, you can also hear CP members on channel 2. This is because channel 2 sends and receives on the same frequency whereas channel 1 sends and receives on two separate frequencies.

Corbett Community Network (CCN)

The purpose of this network is to allow communications between Citizen Patrol members when they're on duty and with other CCN users. This will primarily be effective in natural disasters or other emergencies where instant communications are needed. Radios are more effective than phones, which may be inoperable or overloaded, during a large scale emergency. For example, during the Reynold's High School shooting incident, all cell phone users received a busy signal within two minutes of the incident. Radios also allow a large number of users to simultaneously receive critical information.

The CCN is primarily intended for communications among Citizen Patrol volunteers and the Corbett Community Resource Deputy. However other CCN users, are asked to **ONLY** transmit (talk) on the radio if you have a communication need that serves the community. For example:

- Asking if, or stating that a particular road is open or closed (such as during an ice storm)
- Sharing information about the location of power outages
- Providing updated information to Citizen Patrollers regarding a specific issue when the information may be of value
- **AGAIN, THIS DOES NOT REPLACE THE 911 or NON-EMERGENCY# DISPATCH SYSTEM**

Do not expect the CCN to be monitored by other users 24-hours per day. The primary users are Citizen Patrol members that volunteer their time. Most choose to leave it off unless they're actively volunteering or responding to a large scale disaster incident.

Due to numerous potential users on the CCN, especially during a large scale incident, users are asked to adhere to the following when talking on the radio:

- Be familiar with the radio your using and its operation (many YouTube videos are available).
- Keep your transmission brief, professional and to-the-point; long ramblings may interfere with critical use by other users.
- On most of the CP radios, channel 1 is the Corbett Repeater "CORB RP". When transmitting on this channel, press the transmit "PTT" button on the left side of the radio and wait one second before talking. This slight delay "opens up" the repeater to receive your voice transmission. THIS IS THE PRIMARY MONITORING CHANNEL.
- Channel 2 is the Corbett Simplex (or radio-to-radio) "CORB S" channel. This is the frequency that can be used if two or more CCN users are outside of repeater range OR if the repeater quits working. This range is generally much more limited.
- Channel 3** is the NOAA weather channel for our area.
- Channel 4-17** are FRS channels that are open to the public.
- **Note- the above-listed "channels" may be different on different radios. This depends how your assigned radio was programmed. For example, the "school" channel may be channel 4 on one radio and possibly a different channel on a different radio.

BE SURE TO IDENTIFY YOURSELF when you begin talking and state who you're talking to. For example:

Citizen Patrol (CP) member Bob to CP member Ron: "CP Bob to Ron". "This is CP Ron go ahead Bob".

When finished communicating, state that you're "clear". For example, "*CP Bob, clear*".

If you're not a CP member, state your entity name or location followed by your name. Acceptable locations for our area are: Aims, Bridal Veil, Corbett, Latourell, Springdale, Warrendale etc. or you may state a street name. If you're an entity, please state the name of your business or organization before your name. Examples include:

- "*Corbett Water Jeff to Rocky (Corbett deputy)*"
- "*Menucha to any Citizen Patrollers monitoring*"...."*Menucha, this is CP Rick, go ahead*"
- "*CP Dwayne to CP Phil*"...if no one answers then Dwayne states, "*CP Dwayne, no contact and clear*".

ONLY CP members and entities within the CP program are authorized to transmit on the Corbett Repeater and simplex channels (channel 1 and 2). Any unauthorized

communications that breach the above-listed protocols will be grounds for termination of your use and this agreement. Any continued use would then violate Federal Communications Commission (FCC) regulations and could result in fines or imprisonment.

“CP-NET”

Monthly, Corbett Repeater check-in's (CP-NET) may be scheduled once per month on a designated day and time. Members are encouraged to “check-in”. This is good practice to share information, test radios and build awareness and familiarity among users.

A monthly radio “check-in” may occur at a pre-designated date and time so that members can check in and practice talking on an organized “net”. Here’s a sample Net Preamble or Script:

Good evening. This is *(first name, team number)* net control for this session of the Multnomah County Citizen patrol net. This net meets every (date & Time) If any station has emergency, priority or health and welfare traffic, please come now with your First name.

Stations may break the net at any time for emergency traffic by using the pro-word “break.”

We will take check-ins alphabetically by first name and Team number. Stations are asked to speak slowly and clearly while checking in with their first name, and team. We will begin roll-call with Multnomah County Citizen Patrol members followed by check-ins from anyone else who would like to join our net. All stations are encouraged to log each of the participants for practice. After roll call, we will take any routine traffic, followed by announcements, questions, contacts, (a brief educational topic), and other business for the net.

Citizen Patrol **Team One** members please come now alphabetically with first name.

Citizen Patrol **Team Two** members please come now alphabetically with first name.

Citizen Patrol **Team Three** members please come now alphabetically with first name.

Citizen Patrol **Team Four** members please come now alphabetically with first name.

Citizen Patrol **Team Five** members please come now alphabetically with first name.

Job Corps **Team Six** members please come now alphabetically with first name.

(Acknowledge each person by first name and sort out doubles. You may need to ask if there are any more check-ins in each group).

Any late or missed Multnomah County Citizen Patrol members, please come now.

This is *(First name)* for the Multnomah County Citizen Patrol net. We will now take check-ins from everyone else who would like to join us. If you are affiliated with any other emergency response group including Nets, Parks, Forest service, rescue groups, please say so when you check in. Any other check-ins, please come now. *(Acknowledge each person by First names and sort out doubles)*

Multnomah County Citizen Patrol meets (month & time) on the Corbett Repeater.

We encourage new Citizen Patrol folks, and anyone interested in emergency communications consider joining our group.. You can find out more about us by visiting www.mcsocp.com.

The Corbett Repeater is used in partnership with Multnomah County Emergency Management and the NE Multnomah County Community Association (NEMCCA). Thank you.

“GO-RADIOS”

In the event of an emergency or other natural disaster, there are numerous VHF “go-radios” available for use. These radios are for use by Citizen Patrol members or other emergency response personnel. They are also routinely used by Citizen Patrol members during their normal gorge patrols or other details.



If a disaster occurs, the police 800mhz. system may be down or at least augmented by these radios. There are 2 types of board-mounted go-radios. The larger, gray GE radios

are “wide band” and are intended for HAM use only. The smaller Motorola radios are “narrow band” and have no HAM frequencies. Refer to the affixed stickers on each radio for available channels. Remember, that assigned frequencies (i.e. the school, County Roads etc.) may be on different channels on differing radios. Be sure to check your radios individual template. The go-radios have much more transmit power (25-50 watts) than the handheld “walkie-talkie” radios (4-8 watts) that are carried by Citizen Patrol members on patrols.

There are numerous channels on the radios with some that are programmed to work on radio repeaters. Repeater channels can greatly increase the communications distance. For example, the Multnomah County Emergency Management (OEM1) channel allows communications on most radios from Beaverton to Cascade Locks, Aims and Sauvie Island. Other channels are more limited in their use. Through training and experience, members should learn the locations of the area repeaters.

The radios have cigarette lighter plug-ins for use in any car along with magnetic mount antennas that can be put on a car roof. There may be an extra AC power supply on the SAT office shelf. This allows the radios to be used with a wall outlet. The SAT office has several large batteries on the floor that can be used to power the radios during a power outage. Each battery can provide about a day of average use. Several Citizen Patrol members either have their own radios or are assigned a radio to offer support during a disaster.

What is a HAM?

The term *HAM* will be used frequently throughout this training. Before discussing the Citizen Patrol role in radio communications, it is important to first define a HAM so that members who are HAMs, or not HAMs, will know how they play a role in a patrol mission or disaster response incident.

A HAM is a radio operator that has been licensed by the FCC to operate on the designated HAM band of the frequency spectrum. Strangely, HAM is not an acronym. Any unlicensed citizen may operate a CB or FRS radio, such as the radios that can be easily purchased at a local sporting goods store, however HAMs are allowed to use a broader range of frequencies and can access certain repeaters to allow for long distance communication. There are 3 levels of HAM licensing. A “Technician” level is the first level. Citizen Patrol members are encouraged *but not required* to become HAM licensed.

Why should I become a HAM if I can use a CB or FRS radio?

- HAM operators generally utilize radios with higher wattage (power) that can assist in communicating over longer distances or even around the world.
- HAM operators may use frequencies that are not available to the general public.
- HAM operators can use certain area repeaters to communicate over vast distances, sometimes worldwide or even to the Space Station.
- HAM operators can become affiliated with radio clubs as a social activity.

- HAM operators can communicate and meet friends with a similar interest.
- HAM operators can be a valuable tool to government agencies during times of disasters. Especially when affiliated with a local ARES (Amateur Radio Emergency Response Service) or RACES (Radio Amateur Civil Emergency Service). Some HAMS even pack their radio and supplies in a travel kits or “go kits” to respond to disaster stricken areas.

How do I become a HAM?

You must first study for and then pass the “Technician” level exam offered by the Amateur Radio Relay League (ARRL). You may study the “Technician” workbook and the hundreds of test questions in the book, or you may take a weekend class offered by a local radio club. The class is generally offered on a Friday evening through Sunday. The exam follows the class. After passing the exam you will be given your own personal call sign to be used during your transmissions. There are several ways to study and find an exam location:

1. Visit the local HAM store (HAM Radio Outlet or HRO/ Phone: 503-598-0555) or buy a study guide online. Purchase the Technician study guide or flashcards. There are several options available. They can also give you the next testing date and location.
2. Call HRO or Google a local radio club (Portland Amateur Radio Club or Hood View Amateur Radio Club). Ask when the next “Technician” level class will be offered.
3. Visit www.arrl.org to search testing locations and radio or repeater clubs.
4. You can even purchase the “app” via an iPhone for \$5. The Technician level app has all of the study questions offered in the workbook. The app also has a link to upcoming testing locations.

Radio Types and Frequencies

There are many types of radio frequencies. For our purpose, we’ll limit the information to the frequencies or radio types that CP members may use during their duties. Local police/fire radios operate on the 800 mhz (megahertz) range or “band”. Other police agencies such as OSP operate on the VHF band. There are frequency ranges within each “band” that are authorized for specified groups; like government or private businesses.

Think of a *frequency* as ripples in the water. The density of frequencies and the strength (wattage) combine to have varying effects.

VHF (Very High Frequency- i.e 154.123 mhz) is better-suited for longer range outdoor communication. This is the band used for the Corbett Repeater and by OSP. Many HAM frequencies use this band. Governments and businesses both use VHF, however each uses its own sub-band or specified range of frequencies. Many times, governments are assigned their own frequency whereas businesses may have to share a frequency with other businesses.

UHF (Ultra High Frequency)- i.e. 440.123 mhz) is better suited for shorter range communication. It has a higher frequency that can better-penetrate dense forests and concrete walls. This band is also used by HAMS. Organizations such as hospitals or community colleges will generally use this band.

FRS (Family Radio Service- in the UHF band). FRS radios are pre-programmed and limited to ½ watt of power. These can be used freely by the public.

GMRS (General Mobile Radio Service- in the UHF band). GMRS radios are pre-programmed and limited to 5-watts of power. These can be used by the public only if they have an FCC license.

CB (Citizen Band- in the High Frequency (HF) band). CB radios can be used freely by the public and are limited to from 4-12 watts. However, CB radios are generally cluttered with users that far-exceed the maximum allowable wattage.

HAM- HAMS have a license to use specified “bands” within both the UHF, VHF and HF ranges.

“Go-Radios” and Personal Radios

Numerous VHF “go-radios” are available for patrols and details. They are also intended for distribution to members throughout the community to offer communications during a disaster.

Although members are required to have a cell phone while on patrol, the VHF radios are also available to members upon their request. Licensed HAM radio operators may use any of the designated HAM channels to communicate with other HAMS during a patrol or other mission. HAM radio has been a proven system of communications for disaster-struck communities. However, the majority of Citizen Patrol members are not HAMS. HAM licensing is highly encouraged but not required for our members. Members will be given 15 hours of volunteer time for studying and obtaining their HAM license.

In order to allow non-HAMs to use a radio, and to provide a higher degree of privacy in radio communications, the Citizen Patrol has been authorized to use the Multnomah County Emergency Management repeater. This repeater allows communications among members from Beaverton to Cascade Locks, Portland, Sauvie Island and Aims. It is not open for public use. The Search and Rescue Explorers may use the same frequency during searches and they have priority of usage. Citizen Patrol members will receive hands-on radio familiarization training prior to using the radio.



Due to the limited number of “go-radios”, members are highly encouraged to become HAM certified and to purchase their own HAM radio. A “commercial” radio is recommended so that commercial or certain government frequencies (i.e. the county repeater) *AND* HAM frequencies can be programmed into the radio. HAM radios such as Yaesu or Kenwood are only programmable with HAM frequencies (NOT frequencies such as the county repeater) and are generally more expensive; costing around \$250-\$400. Two of the least expensive quality radios at present are the Wouxun and Baofeng brands imported from China. These DO WORK with the county repeater. The Wouxun costs about \$125 and the Baofeng can be purchased for under \$30. The quality on the latter radio is good, but has slightly less sound quality than the Wouxun. The Wouxun has a 5-watt maximum output while the Baofeng has a 4-watt maximum output. The Baofeng UV-82L cost around \$65 and is 8-watts. They can be attached to a “high-gain” antenna to effectively double or triple its transmission power. The cost for this type of antenna and cable is about \$30 and up. Another option is the “Anytone AT-588” UHF/VHF 60-watt mobile radio that can be purchased for \$230 as of this writing.



\$125 Wouxun KG-UV3D



\$27 Baofeng UV-5R



\$45 magnetic antenna

At present, the Citizen Patrol has two types of VHF “go-radios”. The gray GE brand radios are “wide band” and are intended for HAM use only. They have 16 channels. The smaller black Motorola radios are “narrow band” and have no HAM frequencies. These only have 4 channels. Refer to the affixed stickers on each radio for available channels.



The radios have cigarette lighter plug-ins for use in any car along with magnetic mount antennas that can be put on a car roof. There are also some AC power supplies available that allows the radios to be used with a wall outlet in a house. The SAT office has several large batteries on the floor that can be used to power the radios during a power outage. Some Citizen Patrol members either have their radios or may be assigned a radio to offer support during a disaster.



The female-ended cigarette lighter plug is connected to the battery terminals via the alligator clips. The radios can also be plugged into a car’s cigarette plug or this set-up can be used.



The male cigarette plug connected to each radio has a 10-amp glass fuse. The end is unscrewed to get the fuse. The Motorola radios have a plastic 15-amp fuse on the red (positive) wire. It's always wise to have extra fuses. *If your radio isn't powering-on when it's plugged in correctly, it could be a blown fuse.*

Several antennas with cable are stored at the SAT office. This white VHF antenna offers greater range and is useful for setting up a radio at a fixed location such as a food or aid distribution center or even in a parking lot at a community event. Numerous cable connectors are available to allow the cable to be connected to different types of radios used by the Citizen Patrol: the GE radios, the Motorolas or even a handheld Wouxun radio. Electrical lines, lightning and proper grounding are of primary concern when using this antenna. Members will receive training with this equipment before its use.

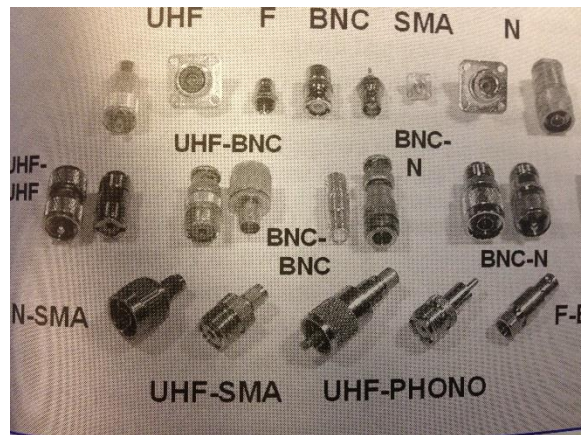
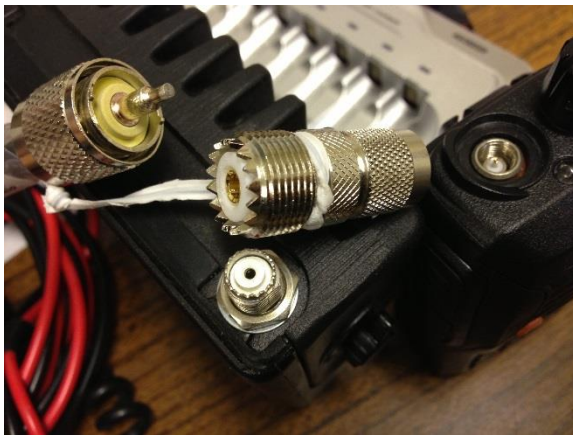


SAMPLE ANTENNA SET-UP:

This antenna is about 5-feet long. When using the antenna, be sure to screw-in the metal rods to create a “ground plane”. This allow the radiated signal to disperse properly. When a “mag mount” antenna is used on a car, the car’s metal roof or hood acts as the ground plane. If a “mag mount” antenna is used in a house, a metal cooking sheet can act as the ground plane. *For safety, be sure to keep the antenna as far as possible from people, powerlines and trees. Antennas should not be set up if lightning or thunderstorms are likely.*



After the ground plan rods are attached, slide the cable through the mounting bracket and screw it onto the antenna. There’s a small screw that will attach the antenna to the mounting bracket. *Be aware of power lines, proper grounding, lightning strikes and static electricity when raising the antenna.*



Citizen Patrol members will be aware of the various connections and adapters that may be needed for different radios and antennas. Whenever possible, adapters have been attached to connection points to allow different radios to connect to an antenna. Above Left- here are four connection types: a UHF male, a UHF female-to-TNC male, a mini UHF female and an SMA male. Above Right- some of the types of adapters from a HAM operators manual. The antenna cables in the SAT office have several extra connectors attached to the cable-ends so that different types of radios can still be connected to the same antenna cable.

COVERAGE AREA OF THE COUNTY EMERGENCY MANAGEMENT REPEATER ON JANUARY 2013 ON A COLD, CLOUDY DAY WITH NO RAIN

LOCATION	MOBILES	WOUXUN	WOUXUN w/ MAG MOUNT
Corbett SAT to Beaverton	X		X
Dabney Park	X	X	X
Springdale Area	X	X **	X
I84 to Rooster Rock	X	X	X
Multnomah Falls	X		X
Ainsworth	X		X
Eagle Creek			
Bonneville Dam	X		X **
McCord Creek	X		X **
Cascade Locks	X **		
Oneonta Falls	X		X
Horsetail Falls	X		
Wahkeena Falls	X		X
Angel's Rest/ Bridal Veil	X	X	X
Sheppards Dell	X		X
Latourell Falls	X		X
Latourell Neighborhood	X	X	X
"S" Curves	X		X
Vista House	X	X	X
Larch Mt/ Haines	X	X	X
Louden/ Deverell	X	X	X
Louden/ Mannthey	X	X	X
Littlepage/ Howard	X	X	X
Howard Rd/ east end	X	X **	X
Gordon Creek/ Rickert	X	X	X
Gordon Creek/ Oxbow Pk	X	X	X
Trout Creek Bible Camp	X	X	X
Aims Fire Station	X	X	X
** Notes- it works but scratchy. Depends if you're in an open area			
Some of the areas having coverage are highly terrain dependent. If you're standing next to an embankment you may have no coverage. However, moving 10 feet into an open area may provide coverage. Or transmitting outside the car vs. inside.			

Assignment Locations and Frequencies Used

The VHF "Go-Radios" have been assigned to Citizen Patrol members in priority of their residence location. The intent is to have a network of radios dispersed in a perimeter around the community rather than to have several radios clumped in a single area. In

this way, communications can cover a broader area to disperse resources more effectively.

If a disaster or other emergency occurs, members will call-in for a status report of fellow members. Members are requested to do this on the Corbett Repeater frequency/channel. To communicate to the Multnomah County Office of Emergency Management (OEM), CP members should utilize the county OEM repeater. If for some reason this repeater is inoperable or is in official use by the OEM, please refer to the below template for alternate frequencies. The Federal Communications Commission (FCC) allows non-HAMs to use HAM frequencies *only* in matters of life or death.

FREQUENCY NAME (use in this order)	HAMs	Non-HAMs
1- Corbett Repeater (simplex if repeater is down)		
2- MC OEM Repeater	X	X
3- State Fire (simplex- works with Corbett Fire)	X	X
4- Corbett School (emergency only if needed)	X	X
5- PARC Repeater	X	
6- Hood View Repeater	X	
7- CARC Repeater	X	
8- Mt. Hood Repeater	X	
9- NERT1 (simplex)	X	
County Roads (emergency only if needed)	X	X

A template such as this should be on each radio

Upon establishing contact with fellow Citizen Patrol members, members must coordinate a plan in relocating the radios to key areas or gathering points within the community. *Our primary staging area is the main Corbett Fire Station.* Citizen gathering locations in the Corbett area will most likely be at the schools, the Big Bear and Corbett Country Markets, the fire stations, the Corbett SAT office, the churches, the Job Corps, the Multnomah Falls Lodge, Trout Creek Bible Camp, Menucha, Crestview and the Corbett Grange Hall. If a Sheriff's Office deputy or other fire department official is not present, it's incumbent upon members to communicate on an available frequency and to appoint a member as "Net Control" to control the net. Otherwise communications will be done in a haphazard manner. The Net Controller's duties include:

- Attempting to determine the extent of assistance or resources available
- Attempting to determine the extent of casualties and aid needed
- Directing resources to areas in need
- Relaying information to other members or other responders

Portable Repeater

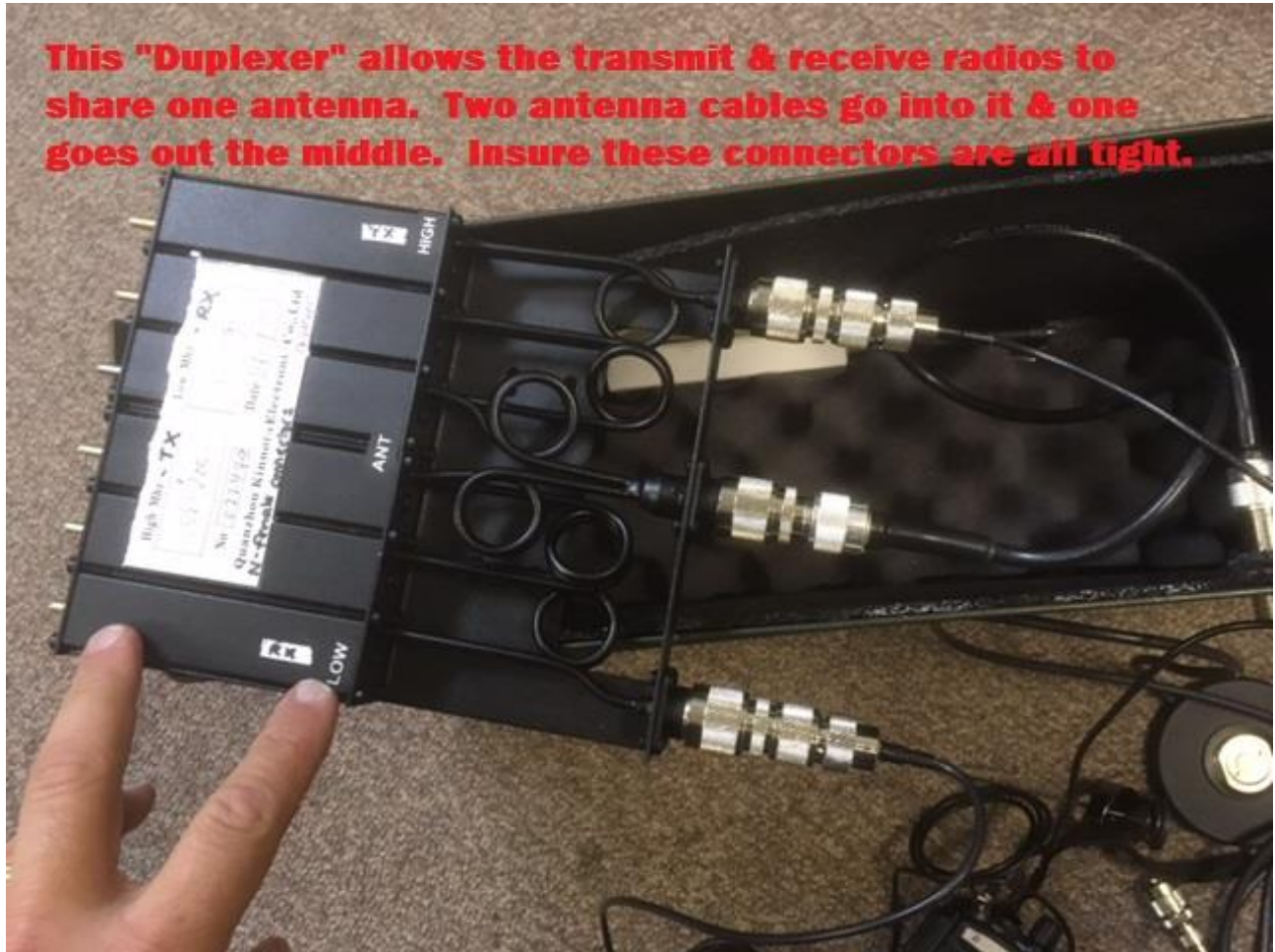
This “portable” Corbett Repeater is a non-professional grade repeater meant for “light-duty” use when the main Corbett Repeater becomes inoperable. It may also be used when the Citizen Patrol needs a repeater in an area that is not covered by the primary repeater. The repeater is merely using two Baofeng radios, a small “relay” box, a “duplexer” and an antenna. It’s all stored in a military ammo can. Avoid leaving it in the open sun or rain. Do your best to protect it from the elements while in use. The sun can heat up the inside of the box and damage the radios. Place in the shade during the summer. If a CP member is staying with the repeater, it’s best to remove the lid to allow air flow. Or if it’s a rainy day, place the repeater box inside a car and put the magnetic antenna on the car roof.





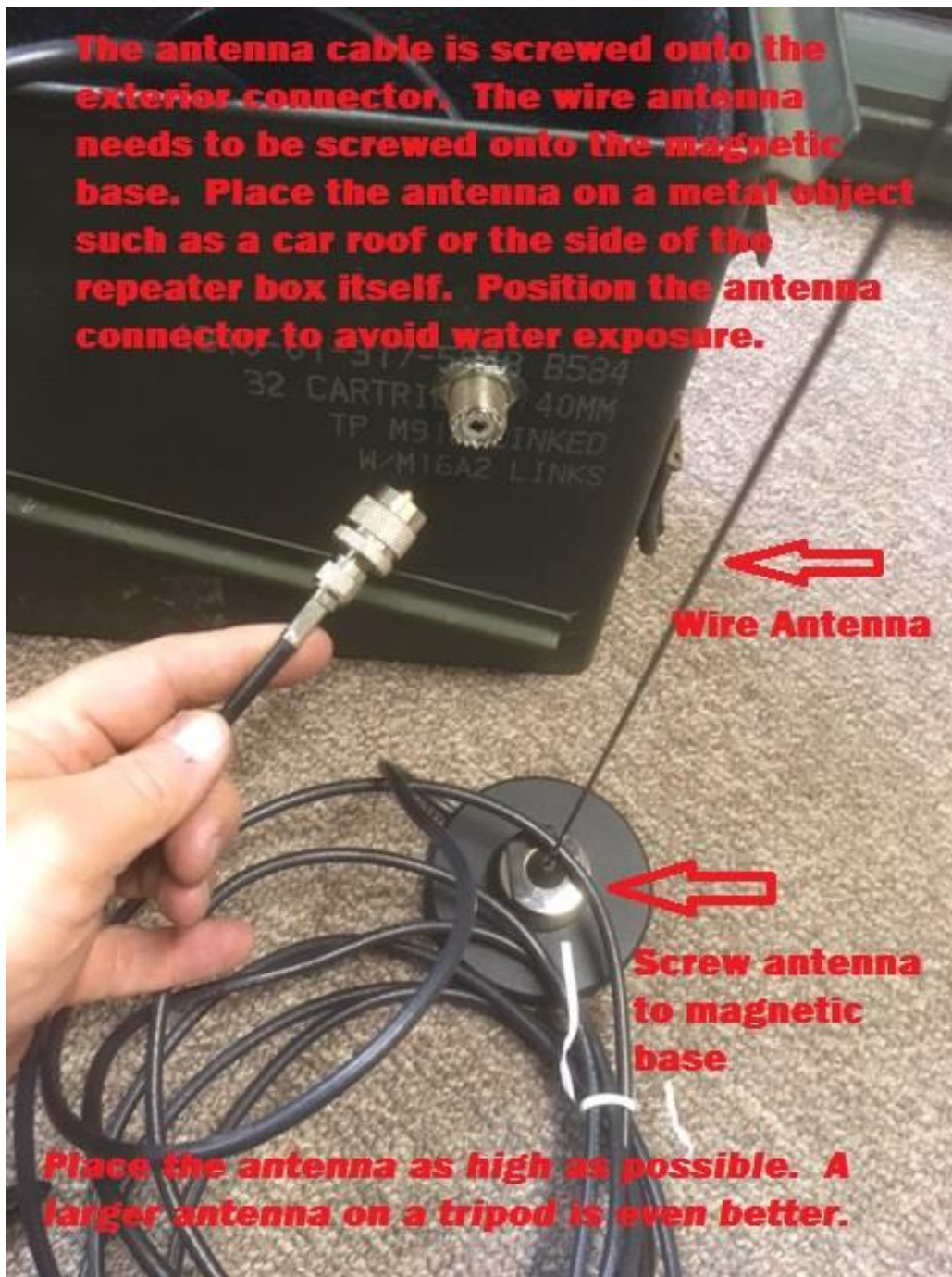
Be sure to turn the volume to the lowest setting on the RX radio and to about 90% volume on the TX radio. Strangely, if you have the volume turned low on the TX radio, the repeater does not transmit.

The wall chargers for these radios are kept in the SAT office. The larger UV82 Baofeng radio has a different charger than the Baofeng UV-5R radio.



The "transmit (TX)" radio antenna is connected to the "high" connector. The "receive (RX)" radio antenna is connected to the "low" connector.





The smaller “mag mount” antenna in the repeater box should work for most purposes, however it’ll have much less coverage than either of the two larger, white antennas stored in the SAT office. Both of the white antennas will work, however the thicker antenna is “tuned” for the Corbett repeater frequencies and will work best. Be sure to place the antenna on a tripod. The smaller mag-mount antenna (as seen in the photo) will work, it’ll have much less coverage than either of the white antennas.



Spare batteries are stored in the repeater case for both radios. Some are rechargeable. Some require AAA batteries.