

Training for Hospital Staff Amateur Radio Emergency Network for Central Virginia Hospitals

Virginia RACES, Inc
(Radio Amateur Civil Emergency Service)



Emergency Communication Backup



- ✓ 17 Hospitals + Virginia Blood Service
- ✓ 10,000 square-miles
- ✓ Voice and e-mail-like among all hospitals

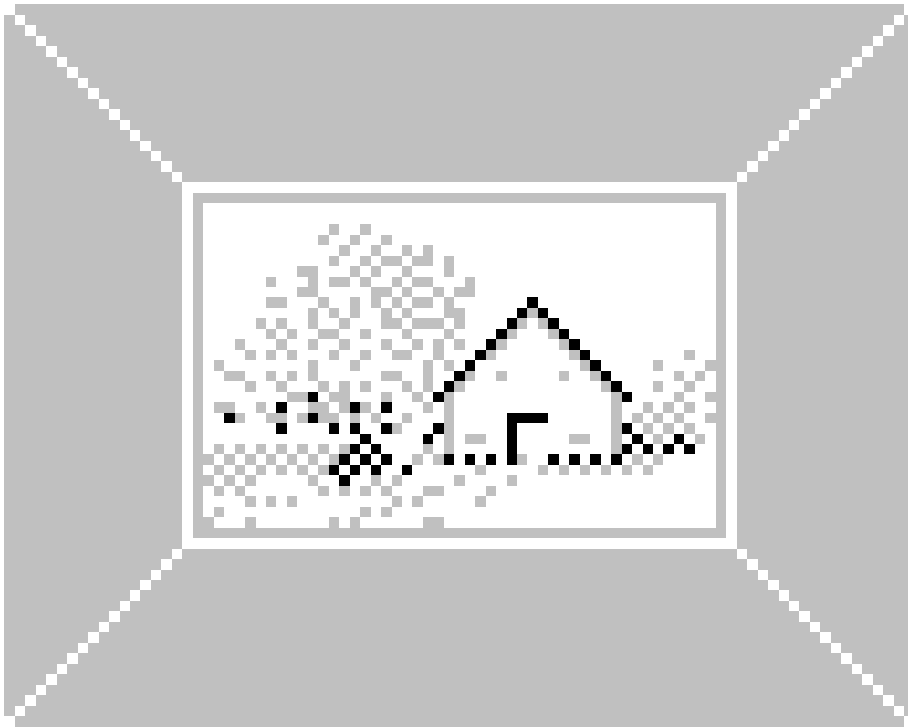
Ownership & Licensing



- ✓ Radios owned by Virginia Hospital & Healthcare Association
- ✓ FCC licenses held by non-profit Virginia RACES, Inc.
- ✓ Paid for by VDH with Bioterrorism Hospital Preparedness Grants

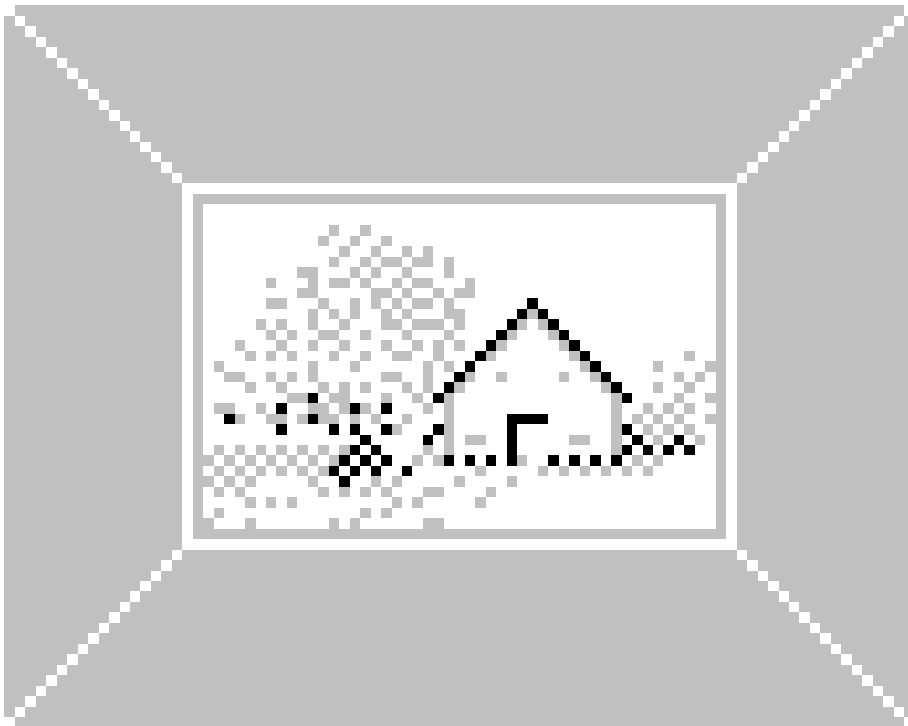
Purpose

- ✓ Tell hospital staff when the FCC allows them to use Amateur-Service radios
- ✓ Show how to set up the radios, turn them on, and use them



Medical & Radio Hubs

- ✓ Medical hub: VCU Medical Center (aka MCV), Richmond
- ✓ Radio hub: Southside Regional Medical Center, Petersburg



Repeater “Spine”

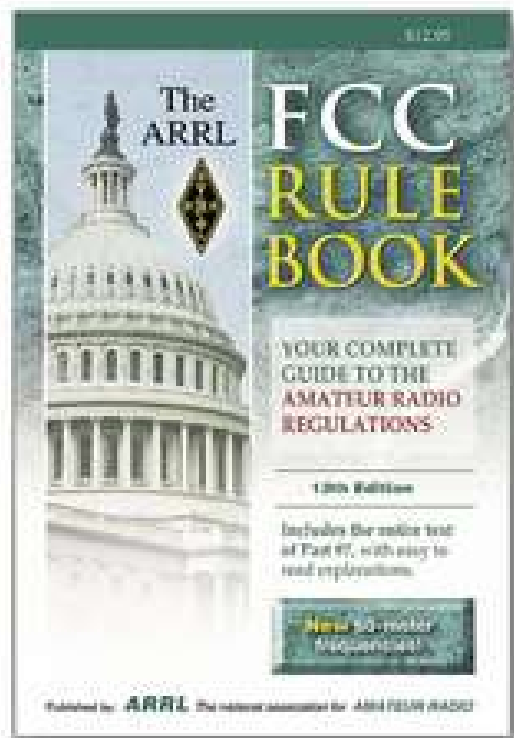


- ✓ North: VCU Medical Center, Richmond
- ✓ Hub: Southside Regional Medical Center, Petersburg
- ✓ South: Community Memorial Hospital, South Hill
- ✓ Backup: Chippenham Medical Center

Hospitals & Blood Service

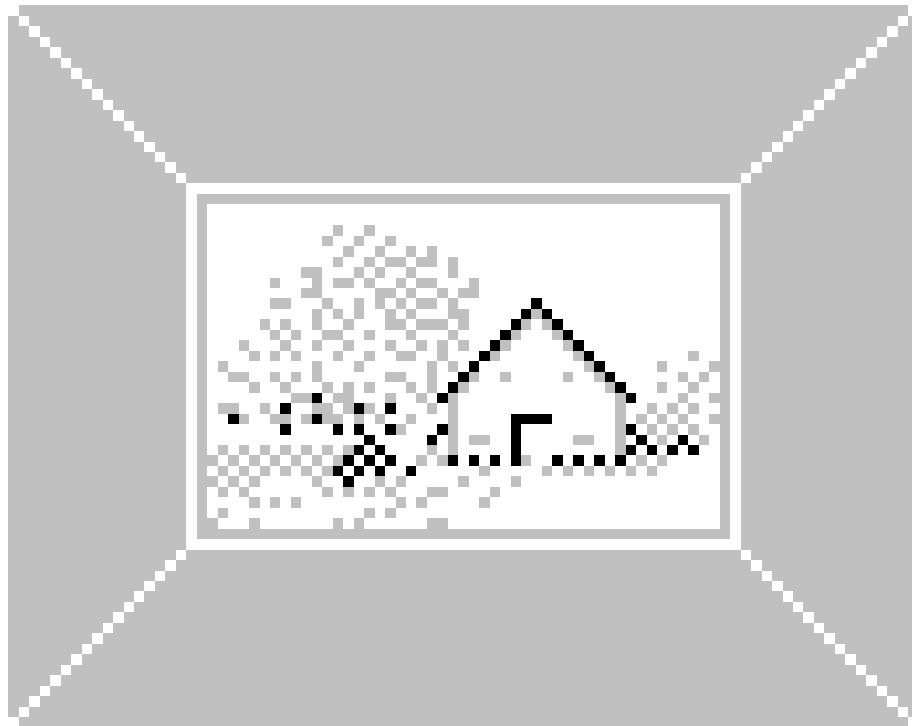
- ✓ Memorial Regional Medical Center
- ✓ Henrico Doctors Hospital Parham
- ✓ Henrico Doctors Hospital Forest
- ✓ St Mary's Hospital
- ✓ Retreat Hospital
- ✓ Richmond Community Hospital
- ✓ VCU Medical Center (MCV)
- ✓ Chippenham Medical Center
- ✓ Johnston-Willis Hospital
- ✓ St Francis Medical Center
- ✓ McGuire Veteran's Affairs Medical Center
- ✓ John Randolph Medical Center
- ✓ Southside Community Hospital
- ✓ Southside Regional Medical Center
- ✓ Community Memorial Hospital
- ✓ Halifax Regional Hospital
- ✓ Southern Virginia Regional Medical Center
- ✓ Virginia Blood Service

FCC Rules on Unlicensed Use



- ✓ Real emergency, can't wait
- ✓ Tried everything else
- ✓ Cannot get through to hams or their arrival delayed
- ✓ Can't get to hospital needed

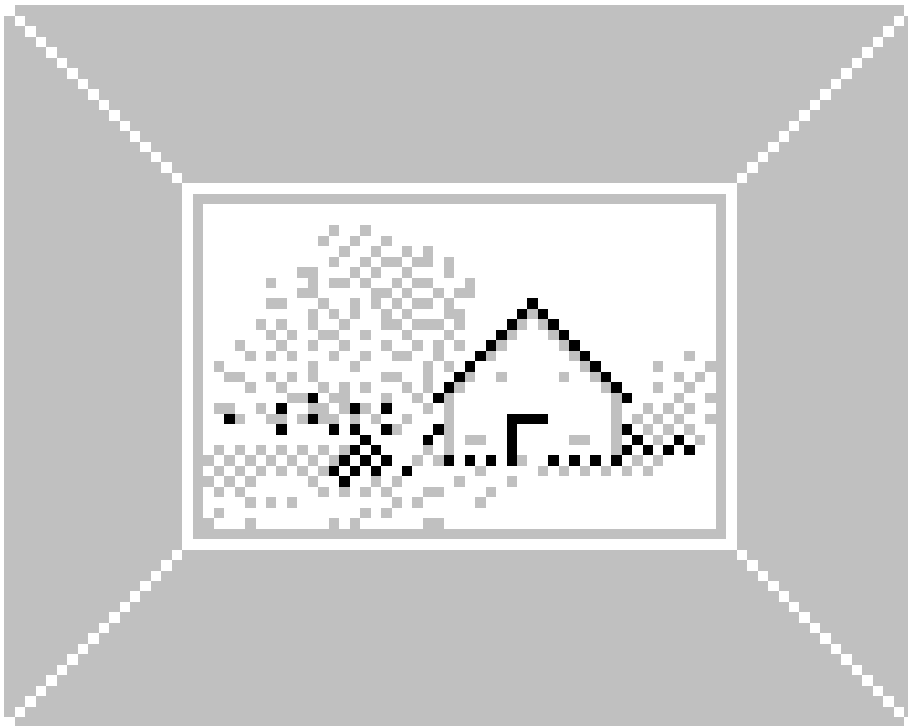
Finding the Radios



- ✓ In a radio room adjacent to the command center
- ✓ In the command center
- ✓ On a crash-cart to be wheeled to the command center

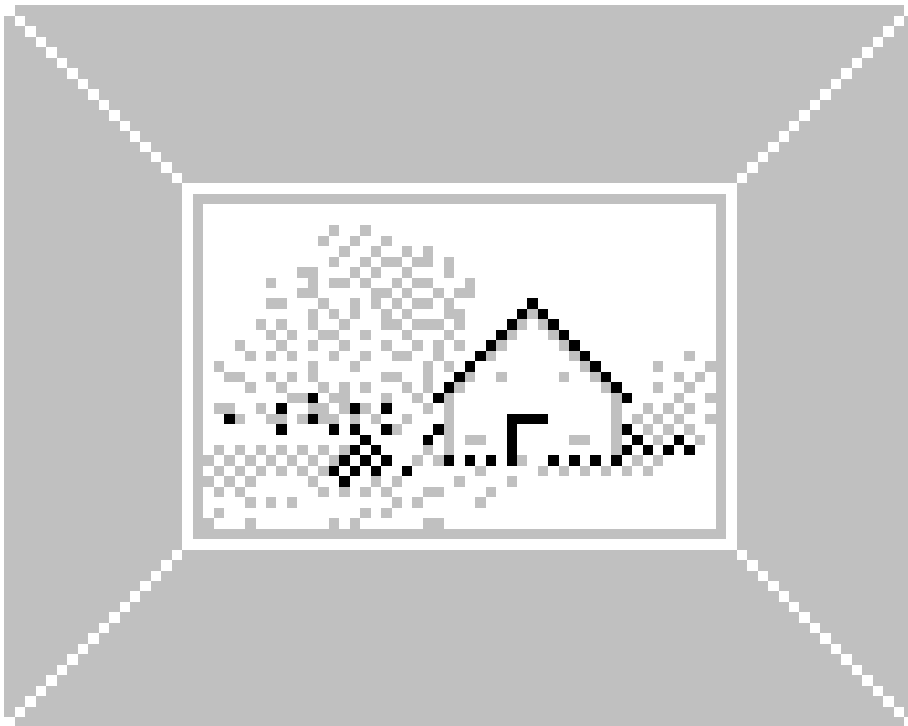
Radios on Cart

- ✓ Only applies to radios on carts
- ✓ Skip if radios set up in radio room

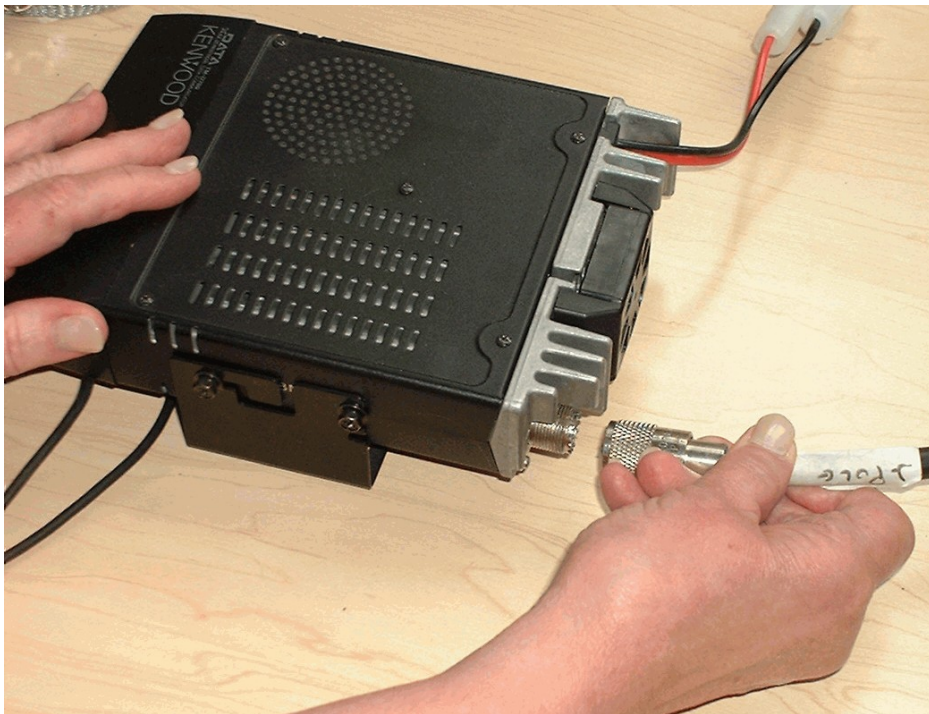


Moving Radio on Carts

- ✓ Get key to closet with radio cart
- ✓ Roll to the designated location in or near command center
- ✓ Should see two large black antenna cables at setup location



At Radio Site (Carts only)



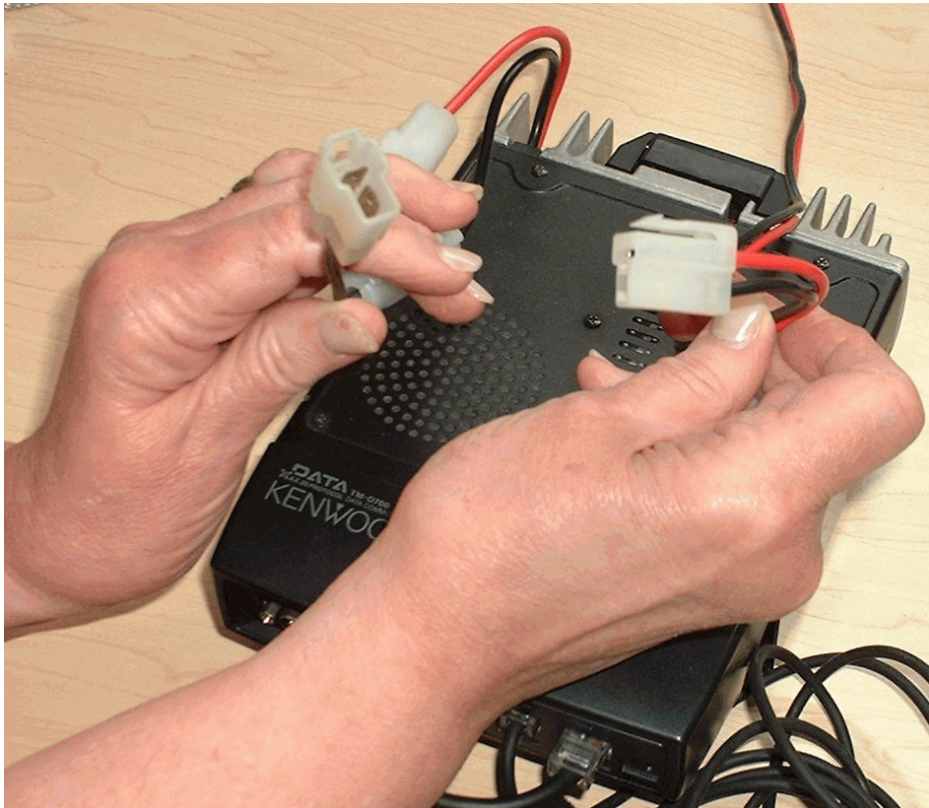
- ✓ Two thumb-sized black cables connected to outside antennas
- ✓ One cable for each radio

Connecting Antenna Cables (Carts only)



- ✓ Center and then push in cable connector in socket at pack of radio body.
- ✓ Turn the knurled outside of connector until finger-tight

Connecting Power Supplies (Carts only)



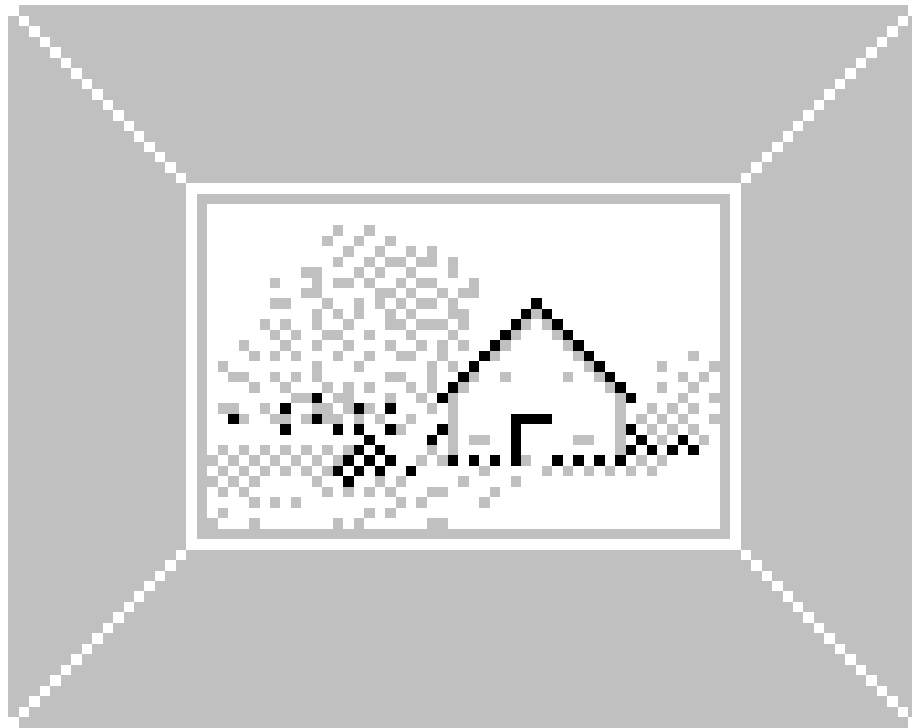
- ✓ Find red and black wires from back of power supply.
- ✓ Find red and black wires from back of radio.
- ✓ Find white rectangular connectors
- ✓ Plug them together (they only fit one way)

Power Connected

This is what it looks like when the power supply is connected to the radio.

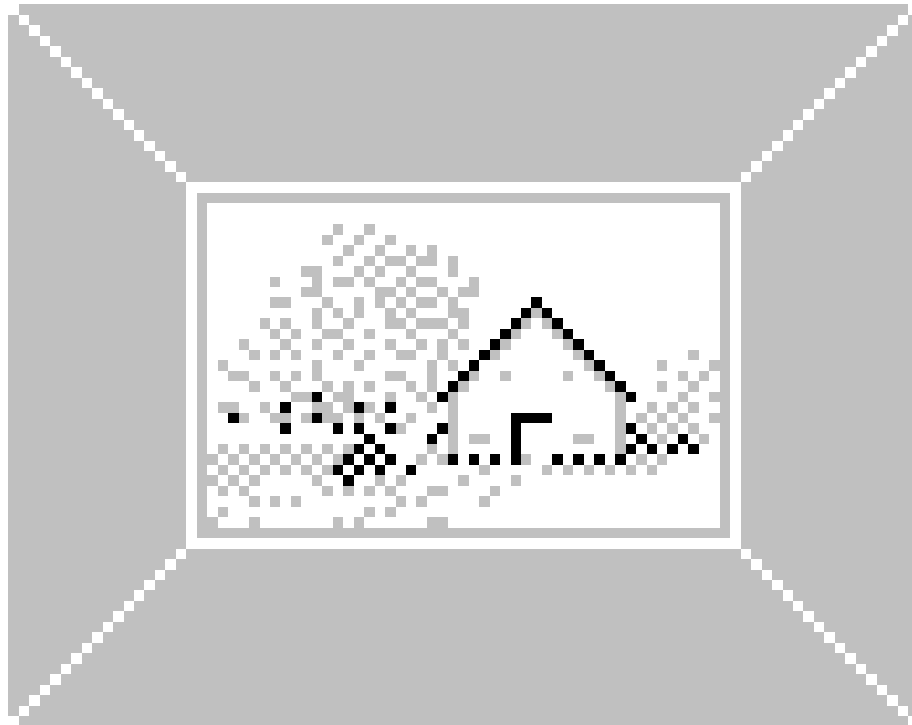


Plugging in Power Supplies (Carts only)



- ✓ After connecting both radios to antennas and power supplies...
- ✓ Plug power supplies into red emergency-power outlets.

Turn on Power Supplies



- ✓ On power supply push power switch on.
- ✓ Switch glows orange or yellow.
- ✓ Voltmeter jumps to about 12 volts.

Turn on Radios

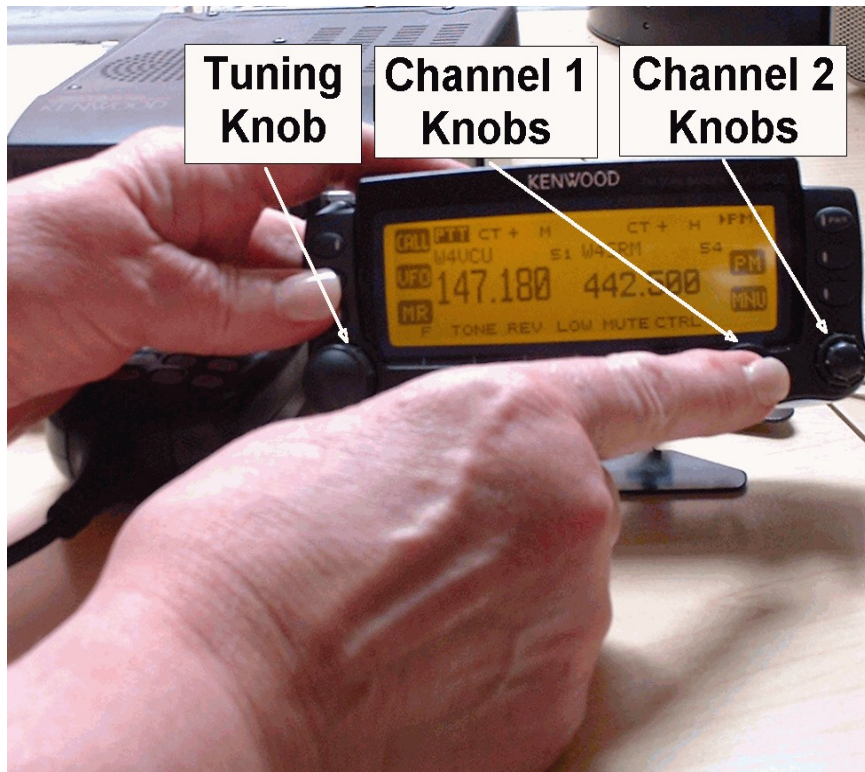
- ✓ The radio power button is labeled PWR.
- ✓ It's in the upper right.
- ✓ Push it.



Troubles

- ✓ If power supply switch does not light or meter does not go to 12 volts, check the wall outlet. Make sure it has power.
- ✓ If radio display does not light, go back to connection the power supplies, re do.

Radio with Power On, Find Squelch & Volume Knobs



- ✓ Radio display lights up.
- ✓ Push the Channel 1 inner-outer knobs, second from the lower right.

Adjust Squelch & Volume



- ✓ Turn inner knob (volume) up to the $\frac{3}{4}$ position.
- ✓ Turn outer knob (squelch) up until hissing starts.
- ✓ Change volume (inner) until comfortable.
- ✓ Turn Squelch (outer) down until hissing just stops.

Troubles

If you hear no hissing or talking, go back to connecting the antennas.

Turn Down Volume on Channel 2



- ✓ The radio can receive two signals at the same time.
- ✓ Find the knobs on the lower right.
- ✓ Turn inner knob (volume) all the way down.
- ✓ Turn outer knob (squelch) all the way up.

Connect Both Radios

- ✓ Follow the steps above for both radios.

Tune and Test

- ✓ Find the lower left (large) knob. It is for tuning.
- ✓ Turn knob until the frequency of the nearest repeater appears.

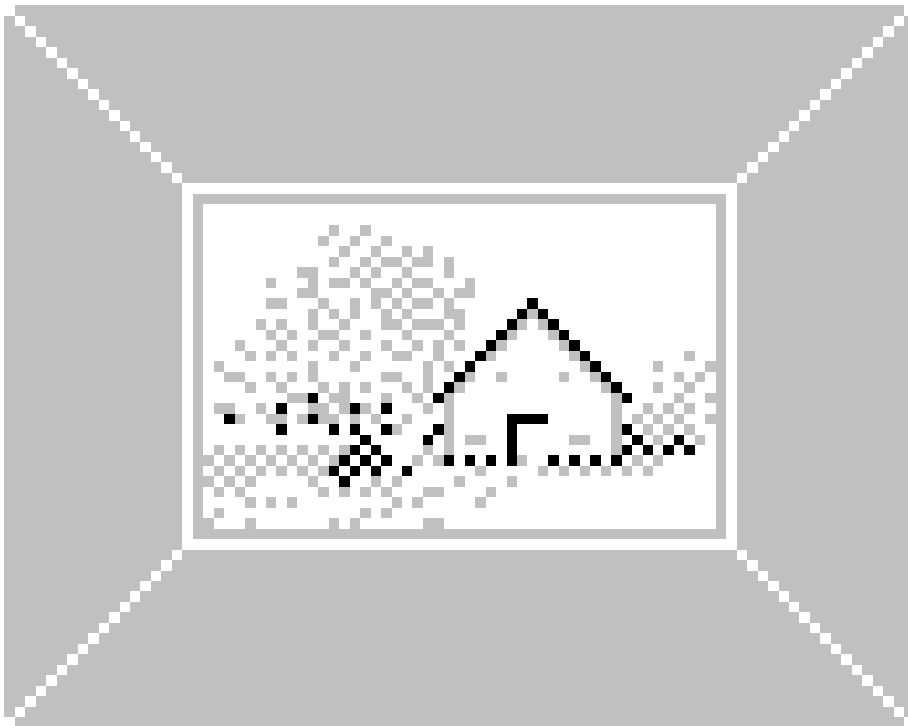


Nearest Repeaters

- ✓ 147.180, Richmond, W4VCU
- ✓ 147.390, Petersburg, W4SRM
- ✓ 147.240, South Hill, W4SH

How it Works

- ✓ You talk to a Repeater.
- ✓ In a fraction of a second it boosts and repeats your voice.
- ✓ All the hospitals hear your voice.

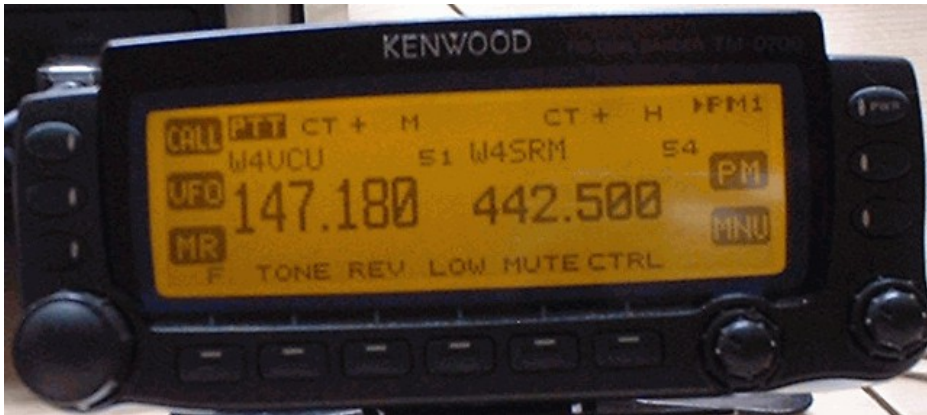


Push to Talk



- ✓ Hold the microphone about 6 inches from your mouth.
- ✓ Squeeze the button on the left.
- ✓ Say something like “this is an emergency call from (your hospital) to (the needed hospital).”

Listen for Reply



Release the button on the side of the microphone and listen. You should hear:

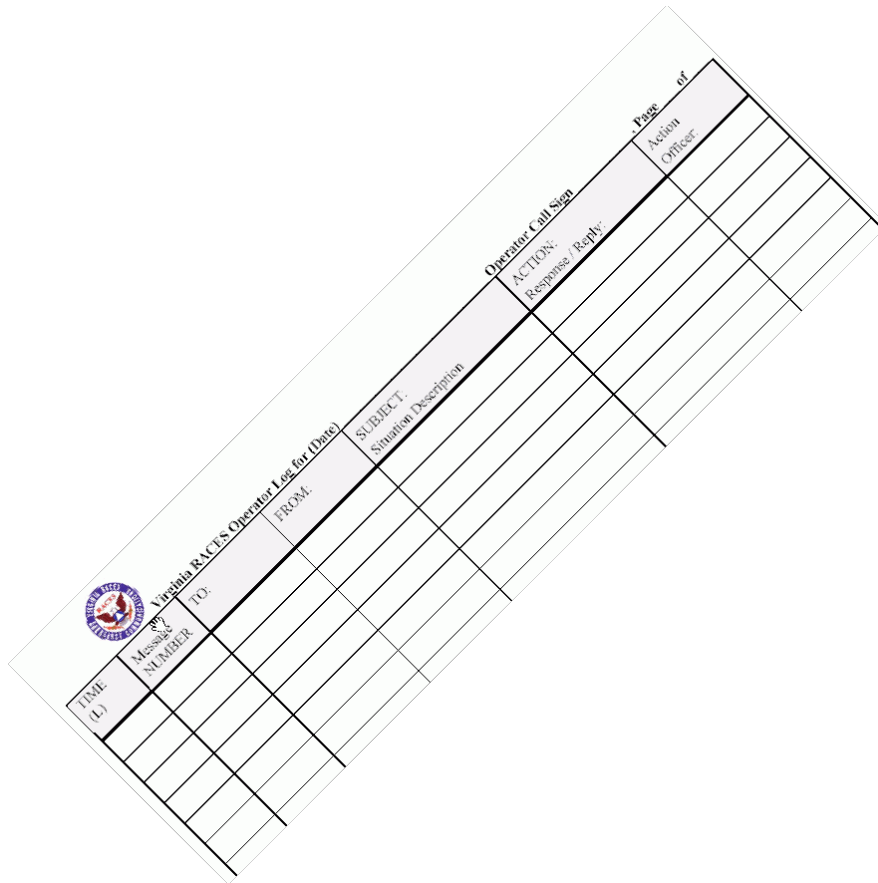
- ✓ Hiss
- ✓ Beep or “boop”.
- ✓ More hissing.
- ✓ Silence.

Issues

- ✓ The lack of a beep or “boop” on releasing the microphone means you didn't get through to the repeater. Tune to another repeater and try again.
- ✓ Some listening hams may notice that you're not talking like a ham. Tell them of your emergency and they'll probably help you.
- ✓ If a rare ham gets officious, ask politely for his name and “call sign”, write them down, and point out it's illegal to interfere with emergency traffic.

Keep a Log

- ✓ Your hospital is using HEICS, so you must keep a log.
- ✓ Your first entry should be why you had to use ham radios without a license.
- ✓ Log each message sent and received using the log sheet



The image shows a tilted "Virginia RACES Operator Log" form. At the top left is the Virginia State Seal. The form includes fields for "Message NUMBER", "TIME (L)", "TO:", "FROM:", "SUBJECT: Situation Description", "ACTION: Response / Reply", "Operator Call Sign", and "Page of". The bottom right corner of the form is labeled "Action Officer". The log sheet contains several empty rows for recording messages.

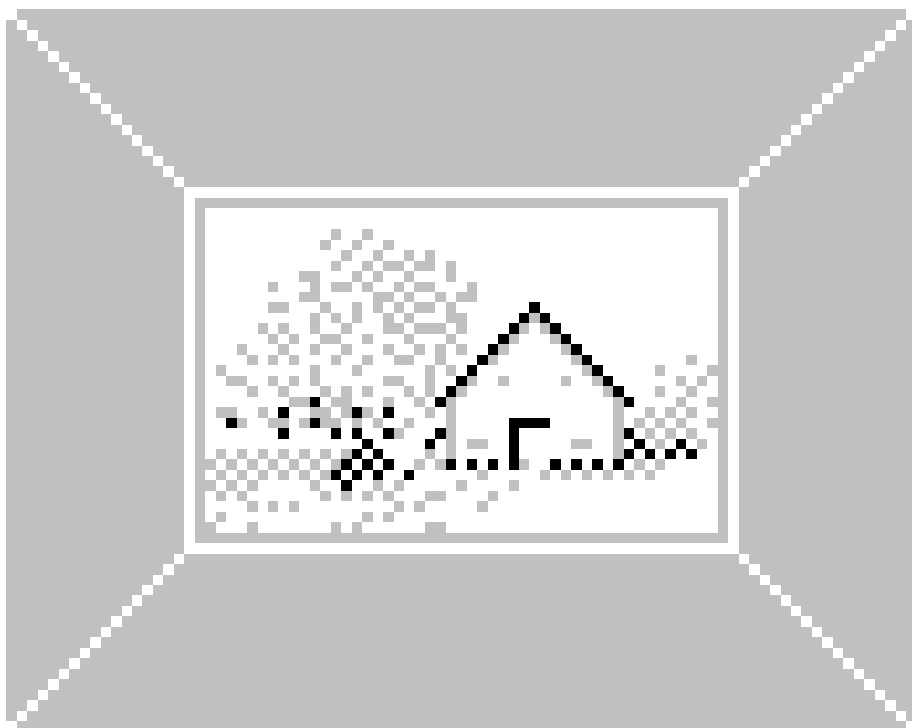
Unlicensed Operation

- ✓ Don't hesitate.
- ✓ The FCC encourages the use of any radio by anyone in a true life-or-death emergency if there's no other way to communicate.
- ✓ Just write it down so you can answer any FCC investigation!



When Your Licensed Ham Arrives

- ✓ Brief the FCC-licensed ham volunteer.
- ✓ Show her or him the log.
- ✓ Take the ham's lead in the formal identification of your station.
- ✓ The ham now has legal control of the station.



Summary

- ✓ You're encouraged to use the ham radios when all your other means of communications have failed.
- ✓ For cart-mounted radios, you move them to the designated space and connect them to the antenna cables, connect the power supplies, and plug in the power supplies.
- ✓ You turn on the power supplies and the radios.
- ✓ You tune the radios to the frequency of your nearest repeater.

Summary

- ✓ You set the squelch and volume controls.
- ✓ You press the microphone button and call for the hospital you need to talk to.
- ✓ You keep a log of why you had to use these radios instead of the telephone.
- ✓ You keep a log of messages you send and receive.
- ✓ When a licensed ham arrives, you either work under his or her guidance, or you go back to your normal duties and let the ham send and receive the messages for you.

Why Ham Radio

- ✓ From the early 1900s ham radio has been famous for getting messages through when all else fails.
- ✓ Through their FCC licenses they're authorized to use many more radio frequencies than other radio users, so they can usually find a frequency that works.
- ✓ To get their licenses they have to learn how to connect radios, tune them, and send a proper message.
- ✓ That's why the central Virginia hospitals picked ham radio and the Virginia RACES group to provide this final communications backup.

Credits

Developed and recorded by Virginia RACES, Inc.
in cooperation with the Central Virginia Disaster
Planning Committee.



Cast & Crew

- ✓ Narrator:
- ✓ Cameras:
- ✓ Audio:
- ✓ Lights:
- ✓ Editor:
- ✓ Screenwriter: Bruce MacAlister, W4BRU
- ✓ Director:
- ✓ Producer: Tony Amato, KR4UQ
- ✓ Taping crew: