

**Ham 28 – VHF, Simplex, and Nets**  
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1. *VHF/UHF* transceivers are the first rig for amateurs because of FCC and international rules. The wavelength is short, making the transmission path approximately limited to line-of-sight and unable to impact a very large area.
2. Because of the local nature, the bands became popular for all license classes, resulting in more sophistication. The outcome is repeaters which allow low power radios to talk to the repeater that has a higher effective radiated power, and often a somewhat higher elevation. Repeater create a physical set-up demanding investment, real estate, and maintenance, generally owned by a consortium, often called a club.
3. A *repeater* is simply two simplex channels which are directly cross-coupled. Repeater effectiveness depends on being near the center of the communications and 'radio-visible' to all parties.
4. *Nets* are an informal infrastructure of people, who communicate on a particular frequency, time, and format. Networks are crucial to amateur radio as a resource to transfer information, provide support, and a place to connect. These groups convene at regular times to test 1-equipment, 2-communication ability, and 3-readiness.
5. By its very nature, amateur radio has a legacy of emergency, disaster, and back-up communications. In those type situations, things go wrong, systems fail, and infrastructure collapses. When things go south, the ultimate comms is simplex, simple direct communication between the stations, typically without calling tones.
6. Three elements become necessary: more power, a better antenna, and self-sufficiency including reserve electrical power. In essence, the physical infrastructure rests with each station. Because of the diverse locations, many of you already have installed better antennas, just to communicate.
7. Interestingly, if those three elements are available, repeaters have less applicability at any time. There are simplex nets which routinely demonstrate communications over the same area as the repeaters. With improved antennas, the area is greater than the repeater.
8. Evergreen Communications Group Net is on *Monday at 7:00 PM*. Because of physical infrastructure collapse not of our making, the net will operate simplex for a while, just like a disaster. Then we will regularly operate simplex to keep the capability.
9. Protocol will modify only slightly. We have three base stations scattered around the same area as most of the network participants. Net-Control will operate completely as normal. The other two Bases are alternates.
  - a. Net Control as usual will request call-in, note the call-in stations, and their signal strength and reliability.
  - b. After the first round of 2 or 3 call-ins, Net Control will ask for report from Base 1.
  - c. Base 1 will then talk to the same stations as Net Control, determining signal strength and reliability.
  - d. Base 1 will ask for call-in only from stations who could not hear Net Control.
  - e. Net Control will ask for report from Base 2.
  - f. Base 2 will then talk to the same stations as Net Control and Base 1, determining signal strength and reliability.
  - g. Base 2 will ask for call-in only from stations who could not hear Net Control or Base 1.
  - h. Then Net Control will resume protocol calling for next group of check-ins.
10. Several positive things come from this network approach. The major one is disaster communications preparedness. Second, we will know the situation with each station, so they can get help to improve. Third, we will interact more, rather than a simple call-in. As we rotate Net Control and Base around the network each week, solid communications will develop to address any circumstance.
11. The group can take this challenge as an opportunity to improve our direct communications. Something about making Lemonade.
12. Join the net and call-in. Do not be overly shy. Beat mic-fright. Communication requires 'talking' to people.. We will 'see' you on the air.
13. Life is good. Enjoy.

