

## **Standard Operating Procedures for Pacific County RACES Stations Annex 1 – Frequency Usage and Points of Contact**

**A1.1. Frequency Chart:** Outlying RACES radio stations, herein referred to as “Fire Hall” stations, although other Shelter and Public Gathering Place locations are included, will be supplied with a Standard Frequency Chart, per Annex 2. The latest version of this Frequency Chart is to be kept with the radio equipment for ready reference. The Frequency Chart is organized into several “blocks”, with VHF (144-148 MHz) and UHF (440-450 MHz) frequencies, and Repeater, Simplex and Packet modes listed separately. It is certainly permissible for the station operator(s) to make notes as to the relative merits of the different repeater frequencies from the particular location. The Frequency Chart appears as Annex 2 to this document.

**A1.2. Frequencies Used:** The selection of frequencies may be partly determined by the Fire Hall RACES radio operator. Under a given set of conditions, one or another frequency may be more advantageous. At times, the Net Control Station (NCS), or other operational director may assign frequencies. When this occurs, the Fire Hall station is expected not to change to another frequency without at least notifying NCS.

**A1.3. Repeater Use:** Normally, the existing FM Voice Repeaters will be used. The use of repeaters is convenient, efficient and usually reliable from virtually anywhere in Pacific County. The links between the repeaters in Pacific County can be configured in several ways. During an emergency, it may become desirable to disconnect one or more repeaters from the regular network. This may require NCS to recommend or assign an unusual repeater for operations at a particular station.

**A1.4. Repeater Failure:** It is entirely possible for repeaters, or the links connecting them, to fail. When using a repeater, note the “Courtesy Tone”, and “Squelch Tail” which sounds whenever the repeater is released. If this tone disappears, it may indicate problems with the linking. If the tone and tail both disappear, and there is no carrier signal on unkeying, the repeater may have failed. Before switching to another frequency, wait for three to five minutes. If the power has failed at the repeater site, causing it to go off the air, this will give the emergency generator time to come on line. After waiting for five minutes, if the repeater is still off the air, switch to one of the other repeaters that can be accessed from your location. Advise NCS of the repeater failure.

**A1.5. Simplex Frequencies:** In the event of widespread repeater failure, it may be necessary to revert to Simplex operation. The primary simplex frequency within Pacific County is **146.550** MHz. There are several dedicated Simplex frequencies, but some may be in use by adjacent counties. The range of Simplex (direct point-to-point) contacts is generally greatly reduced compared to repeater contacts, which may require relaying from station to station to reach the EOC. If unable to receive or contact any other station, the default frequency is **146.520** MHz, National Simplex.

**A1.6. Simplex-on-the-Output:** This uses the output frequency of a local repeater for a Simplex contact. In the event of a repeater failure, this frequency becomes available

when the repeater transmitter goes silent. If a station comes on who would normally use that repeater, they will likely hear your operation and join the Net. Should the repeater come back to life that fact will be obvious to all listening and they can all switch back to normal repeater operation. If a station has not been heard from since the repeater failure, it may be possible to call them, on the output frequency, from a nearby station to request they switch to another designated frequency.

**A1.7. Choice of VHF vs. UHF:** There is a noticeable difference in the propagation characteristics of signals at 140 MHz versus 440 MHz, with the lower frequency tending to have slightly better range. The higher frequencies are more readily absorbed by rain, and foliage, especially when wet. This range difference is normally not a factor when using repeaters, as the signal has only to make it to the hilltop. The difference can be significant, however, in Simplex operation. Since having both VHF and UHF is better than just having either, Pacific County RACES policy is to recommend a “Dual-Band” voice radio, which includes both the Amateur 2-meter (140 MHz) and 70-centimeter (440) bands.

**A1.8. Packet Radio:** All Fire Hall RACES radio stations might not be equipped with Packet Radio. The operation of Packet Radio is somewhat complicated by the fact that it requires a computer. Computer operation using various forms of emergency power can be quite problematic compared to operating a voice radio. Packet Radio has several advantages over voice communications. For sending lists of items, or lengthy messages, Packet improves the speed and accuracy with which they can be handled. Since the over-the-air transmission is not readily understood without specialized equipment, fewer members of the General Public would be able to listen in, improving privacy and security, keeping in mind nothing sent by Amateur Radio is ever “secure” or “private”. Although not a replacement for the voice portion of the radio station, Pacific County RACES policy is to recommend the addition of Packet Radio equipment as a “second tier”.

**A1.9. HF Radio:** Due to the anticipated nature of Fire Hall emergency communications, and the difficulty of erecting an effective antenna, Pacific County RACES recommends against the inclusion of HF communications capability at the outlying stations. HF radio would essentially have no mission in such an environment.

**A1.10. Points of Contact:** The Fire Hall RACES radio station will primarily be used during a disaster situation to establish and maintain communications with the Pacific County Emergency Operating Center (EOC) in South Bend, WA, the Auxiliary Emergency Operating Station (AEOC) in Long Beach, WA, and the Net Control Station (NCS) operating the Disaster Relief Net. These communications will take place on various VHF and UHF Amateur Radio frequencies, through repeaters and/or simplex. All message traffic pertaining to operational matters within Pacific County will be directed to the staff of the EOC. All message traffic pertaining to entities outside of Pacific County will be directed through the EOC. The staff at the EOC must approve any other points of contact during a communications emergency or disaster, particularly those outside Pacific County.