

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

Coordination requires cooperation. The ORRC is a cooperative organization whose success is determined by the cooperation of those for whom it is working. The ORRC needs input from everyone using the repeater spectrum. ORRC operates most effectively when all operators participate actively in the decision-making process.

The repeater sub-bands are a finite resource that can support a large amount of relay activity operating in harmony. Just like the earth's environment, the sub-bands are fragile and abuse will spoil it for everyone. It is the Function of the ORRC to coordinate the various operators within the repeater/relay portions of the spectrum in order to control or reduce interference among such systems.

## 1. Basis For Coordination

- 1.1 Coordination decisions are based on public interest, convenience, and necessity. ORRC staff will help any applicant meet coordination application requirements. When channels are available, applications are handled on a first-come, first-served basis by date of request.
- 1.2 When competing applications are received for coordination, the applicant proposing the greatest service to the community will prevail. Service to the community is a general term describing those attributes of a Repeater or Relay system which are of importance to the Amateur Radio community and the public at large. Service to the community is a value judgment which must be rendered based upon all conditions related to the question at hand. It should be noted that the largest converge area or greatest number of QSO's per hour alone do not constitute the greatest service to the community. For example systems with smaller service areas, special application systems or low activity systems which are monitored for emergency activity may provide the greatest service to the community . If a decision is appealed to the board of directors, the applicant and affected users will be allowed to submit written and oral information relevant to the decision making process. Board deliberation shall be a part of the written record of the decision.

## 2. Band Plans

- 2.1 ORRC coordinates according to the Oregon Band Plans. The current band plans are listed in the exhibits included at the end of this document.
- 2.2 By agreement with neighboring coordinating bodies, clear-channel wide-area coverage frequencies have been set aside throughout the region. Operators on these frequencies are required to provide the wide area coverage allocated for these frequencies. Secondary users allowed to operate on these channels are required to provide the necessary protection to the primary operators on these channels. Details of these allocations are contained in the repeater band plans.

## 3. New Coordinations

New coordinations are provided an initial six-month construction period. The applicant is required to notify ORRC upon beginning operation by submitting a technical data formed marked as "Operational." Extensions of the six-month construction period will be granted for weather, site procurement, regulatory or other reasonable delays.

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

## 4. Application for Coordination

Applicants are cautioned that failure to provide complete and accurate information may result in processing delays or rejection of an application. Moreover, inclusion of deliberately misleading information may result in rejection of an application or revocation of an existing coordination. ORRC officers are reminded that applicant information must be treated confidentially and that officers must annually sign a non-disclosure statement.

4.1 Applicants for new coordination shall provide as part of their application the following information:

- a. Frequency or frequencies of proposed operation
- b. Transmitter site name
- c. Receiver site names or names
- d. Longitude and Latitude of items B. and C. above within one minute of accuracy
- e. Effective Radiated Power (ERP) within 3db
- f. Maximum elevation above sea level of the Antenna within 10 Feet
- g. Radiation Pattern of antenna
- h. Owner/Operator of system
- i. Intended hours of operation
- j. Copies of agreements, if any, with other repeater operators, outlining any procedures that are required to reduce interference or other similar problems
- k. Intended area of coverage or service
- l. Certification that other systems on the frequency of the proposed system, who may be affected by the proposed system, have been notified of the application

4.2 Applicants for new coordination or other users of the channel may submit such technical information and measurements as may be relevant to the applicant's request.

4.3 All applications for frequency coordination shall pay a processing fee for each transmit/receive pair. Fees will be returned if coordination request is not granted. There will be no fee for updates and modifications. The fee shall be set by the board.

## 5. Other Coordination Requirements

5.1 A frequency coordination of a new applicant is granted for a specific ERP, location and expected coverage area. Technical means of protecting co-channel or adjacent channel users may be required and may be part of the coordination grant. Technical means of protecting other systems are electronic devices or methods of operation designed to reduce interference. Examples are CTCSS, PL, Anti-PL, Directional antennas and other similar devices.

5.2 Requests for Packet Radio Frequency coordination will need the following approvals before any action can be taken:

- a. Get prior written approval from coordinated co-channel frequency holders on Local Area Network, Nodes / Digipeaters.

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

- b. Get prior written approval from all coordinated network frequency holders on the assigned network link or direct connecting frequencies. In the event that the approvals are not included with the request for construction / coordination, the request shall be returned without action to the requester(s). They shall be advised of the reason in writing by the chairman of the packet committee or the Secretary for the ORRC, Inc.

Additional information regarding packet repeater coordination is provided in Paragraph 12.

## 6. Responsibilities of System Owners / Operators

- 6.1 It is the responsibility of system owners to operate their systems on a basis of the coordinated hours of operation. System owners are also responsible for keeping ORRC informed of the operational parameters of their systems. Operators are provided a six-month non-operation period to allow for correction of system problems. The ORRC will grant an extension of that period for weather, site, technical, governmental regulation or other reasonable delays. The intent of the six-month rule is to provide System Operators with an automatic period during which a system may be rebuilt or repaired. This period does not require ORRC action, and is intended to (a) provide system operators with the greatest flexibility and (b) minimize ORRC workload. Operators are expected to keep ORRC informed of system status during such periods. Operators are expected to make a good faith effort to resume operation at the earliest reasonable time. Operation of a system for short periods of time with extended periods of non-operation would not meet the good faith requirement.
- 6.2 Increases in most system parameters will require modification of system coordination. Interference resulting from operation outside of coordinated system parameters will be reported as operation not in compliance with the terms of coordination. The ORRC will report the coordinated parameters of a system upon request of a properly constituted ARRL interference committee investigating an interference complaint. Such information may be used by the interference committee for the purpose of resolving the complaint or filing a written finding with the FCC
- 6.3 Operators are encouraged to consult with co-channel users when changes are considered. Such consultation and agreements to prevent interference shall be considered binding and become part of the terms of coordination. In the absence of such agreements, ORRC will issue a determination of interference potential of the requested changes and may require procedures to reduce interference. Such requirements may become part of the terms of coordination.
- 6.4 Co-channel users or the applicant for a modification of coordination may submit such technical information and measurements as may be relevant to applicant's request.
- 6.5 Systems can and do operate with smaller service areas than allowed in their coordination, provided there is no harmful interference as a result of such operation (i.e., as a result of lower power or elevation). Operators must keep ORRC informed in such cases since decisions of the ORRC will often be based upon the measured performance of existing systems. The intent is to allow System Operators flexibility in system design, construction and testing. While operating at lower power, elevation, or other parameters is not prohibited, ORRC may request that a system operator either continue to operate at the reduced levels of service, or commence operation at coordinated levels of service; provided:

# Oregon Region Relay Council (ORRC)

## Coordination Policies and Procedures

- a. The system has operated at reduced levels of service for one year or more; and
- b. ORRC has on file an application for new or modified coordination which can be satisfied if the existing system continues operation at the existing reduced levels; and
- c. No other frequencies are available in that band which will meet the needs of the application for new or modified coordination

6.6 Changes in the following system parameters may require a modification of coordination:

- a. Frequency or frequencies of operation
- b. Transmitter site location
- c. Receiver site location or locations
- d. Increase of Effective Radiated Power above coordinated levels
- e. Increase of antenna elevation above the coordinated elevation of antenna
- f. Change of radiation pattern of antenna if the ERP in any direction will be increased 3db above coordinated levels
- g. System Owner or Operator
- h. Change of any agreements with other operators outlining procedures to reduce interference or other problems
- i. Intended area of coverage or service

### 7. Transferring Coordinations

Coordination of an existing system will be transferred to another group or individual provided that:

- a. The parties are in agreement on the terms of the transfer; and
- b. Application is made to the ORRC for modification of the coordination
- c. The system will continue to serve the same community, or the system will serve a new community which is currently without service, provided the operation from the new location will not cause interference to existing systems, or the ORRC board finds the transfer will provide a service to the new community

### 8. De-coordination

The ORRC may de-coordinate a system only for the following:

- a. An unwillingness to make a good faith effort to control or reduce an interference problem
- b. Failure to correct interference caused by operation outside of the systems coordination parameters or recognized band plans
- c. Operation of a system in violation of FCC rules and regulations
- d. Failure, in the absence of an extension, to commence or continue operation for a 6 month period
- e. Failure to file yearly update forms for three (3) consecutive years
- f. Failure to reply to official ORRC communications
- g. Substantial deviation from the coordinated parameters of the system or good Amateur practices, provided:
  1. The ORRC has on file an application for new or modified coordination which can be satisfied if the existing system were operating within coordinated parameters and good Amateur practices, and

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

2. No other frequencies are available in that band which will meet the needs of the application for new or modified coordination, and
  3. The coordinated operator has not corrected the problem within 120 days after notification by the ORRC Board.
- h. Knowingly providing inaccurate or misleading information to ORRC.

De-coordination proceedings will be handled by the Board of Directors in the following manner:

When a complaint is brought before the Board, the Board shall cause to be created a record of all actions, findings and deliberations relevant to the case. Further, the Board shall communicate in writing with the owner in question and provide a two-week period for reply. Said communication shall state the reasons for the complaint and proposed actions if any.

If in response to the communications, the Board finds that (1) the conditions and cause of the complaint will or have been corrected, or (2) the facts of the case do not warrant further action, then the Board may dismiss the action. Otherwise, the Board shall set a hearing date, providing not less than 30 days' notice. Notice of the time and place of the hearing shall be sent by certified mail.

At the scheduled time and place, the Board shall accept all written or spoken information relevant to the matter at hand. Upon conclusion of the hearing, the Board shall publish a finding of fact based upon the record.

## 9. Return of Frequencies to the Pool for New Coordination

For frequencies that have become available as a result of de-coordination, death or other voluntary returns, the following procedure will be used for re-coordination of that frequency pair:

1. Once a frequency becomes available for coordination, it is held for 60 days and shown as available on the ORRC web site. The 60-day period starts on the day the ORRC board declares the frequency free of any other coordination ties.
2. During that 60 days, amateurs interested in requesting that frequency coordination may apply by filing a coordination request.
3. If more than one request is made for the same frequency allocation, the board—or a committee appointed by the chairman—will hold a drawing or lottery with the names of all of the parties requesting that allocation.
4. All appropriate application fees and ORRC membership dues must be paid at the time of the coordination application. Application fees will be returned to the parties who were not chosen in the lottery.

## 10. Harmful Interference

Harmful interference is interference which seriously degrades, obstructs, or repeatedly interrupts the operation of a relay system. Overlap of coverage, in areas not intended to be served or where no users of the system exist, generally does not constitute interference. Some guidelines for determining potential harmful interference for applications to the ORRC are:

# Oregon Region Relay Council (ORRC)

## Coordination Policies and Procedures

- a. Existing systems generally will be protected to their stated service area on file with the ORRC, or
- b. Standard calculated approximations may be used to determine the service areas of existing and proposed systems, or
- c. Field measurements may be made determine the service areas of existing and proposed systems, or
- d. The ORRC may provide a Special Temporary Authorization not to exceed a six-month period to determine interference conditions. The STA may be terminated with 14 days' notice upon detection of harmful interference.

### 11. Other Factors

The ORRC may:

- a. Deny requests for coordination in congested bands or suggest use of alternate bands when a proposed new system would exceed interference protection guidelines.
- b. Set aside frequencies for specific operating modes, experimental or shared use.
- c. Limit antenna elevation and ERP of new systems or limit increases in antenna elevation and ERP of existing systems to reduce interference, and only for that purpose.
- d. Require such technical means as may be reasonable to prevent interference.

### 12. Packet Repeater Coordination

The ORRC shall coordinate packet repeaters that operate according to the FCC repeater rules using the same basis as the coordination of other amateur repeaters, links and control stations. Coordinated packet repeater stations that are packet stations that operate in repeater mode as defined by FCC rules. Generally, these stations: (1) operate using data emissions compliant with the ARRL AX.25 Amateur Packet radio link layer Protocol and such other upper layer protocols as may be appropriate; (2) automatically retransmit the signals of other amateur stations within a network (a system of cooperating amateur stations) for the purpose of relaying the signals of other amateur stations; and (3) are eligible to operate under automatic control as outlined in the FCC rules.

In addition to the above, network stations that provide mass storage devices to allow storage and future retrieval of messages (delayed re-transmission) are eligible for coordination. Commonly referred to as a "BBS," this functionality may be provided locally at the node station location or remotely using links.

Packet stations not eligible for coordination are: (1) personal stations of individual operators, whether locally or remotely controlled, operated as home, mobile or portable stations; (2) stations that function as Digipeaters, when such operation is incidental to the station's primary purpose as a personal station, even if such operation may be technically considered to be repeater operation; (3) personal or club BBS stations which may operate under automatic control but do not receive or retransmit messages provided by the packet network; and (4) stations that provide connection services to users. These services, described in the International Standards Organization Open Systems Interconnect specification, eliminate the need for explicit routing (i.e., CONNECT VIA).

- 12.1 Packet repeater stations shall receive all protections, rights and privileges of coordination provided by the ORRC.

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

- 12.2 Packet User stations that are not operating as part of the packet network system shall not require coordination.
- 12.3 A majority of the Packet Radio Committee shall be ORRC members active in packet/digital operations.

## 13. Full Disclosure by ORRC Directors

No ORRC Director shall present to any group of two or more Directors, any data or items relating to an application, transfer, or other action for which a Director is a party or will accrue a benefit, without full disclosure of all known data and allowing an equal opportunity with adequate notice to any other party affected (such as co-channel users or competing applications).

## 14. Protection of Systems

Systems are generally protected to their stated area of coverage. The terms “primary” and “secondary” are not to be used for coordination decisions, coordinations with specific “non-Interfering” conditions notwithstanding.

The ORRC Directors strongly encourage the use of a subaudible tone (a.k.a., Continuous Tone Coded Squelch System, or CTCSS) or Digital Coded Squelch (DCS) on all repeater inputs. Without CTCSS, the ORRC is unable to provide any “protection” from interference by users of other repeaters on the same frequency. *[10-08-03]*

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

## *Appendix — Band Plans*

### 10 Meters

**29.300-29.500 MHz** Protected for Satellite communications

**29.5-29.7 MHz** 20 KHz channels starting with 29.52/29.62 and ending with 29.58/29.68 CTCSS (subaudible tone) is required with tone 1 of 5B-162.2 Hz or tone 2 of 2Z-110.9 Hz within Oregon. Pairs are low in and high out. Offset 100 KHz Minus.

### 6 Meters

**50.0-50.6 MHz** Simplex, weak signal, CW, Beacons, SSB, and DX; NOT coordinated. No repeaters, linking or other coordinated activity

**50.6-50.80 MHz** Non voice simplex communications, 50.62 digital calling frequency

**50.8-51.0 MHz** RCC, 20 KHz channels

**51.0-51.1 MHz** Pacific DX window

**51.11-53.99 MHz** Sixty 20 KHz channels, -1.7 MHz offset, beginning with 51.11/52.81 and ending with 52.29/53.99.

**52.30-52.81 MHz** Twenty-five, 20 KHz simplex channels beginning with 52.31 and ending with 52.79. The channels 52.55 to 52.73 are reserved for packet radio operations.

**52.525 and 52.540** match the ARRL band plan and are the primary and secondary simplex channels. *[updated 10/08]*

#### *Notes:*

1. The channels 53.1 to 53.8 should not be coordinated pending the transition of older RCC equipment to the 50.8-51.0 segment.
2. Tone access is required for each and every transmission intended for repeater activation. CTCSS, DPL, or long-tone zero or tone burst is suggested.

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

## *Appendix — Band Plans*

### 2 Meters

**144.0-144.5 MHz** EME, CW, SSB, Beacons, Satellite, Weak Signal

**145.01-145.09 MHz** Channels used for Packet Radio

**145.80-146.0 MHz** Satellite

**144.390 MHz** APRS-only frequency.

**144.510-145.490** 20 KHz channels starting with 144.51/145.11 MHz and ending with 144.89/145.49 MHz low-in/high-out

*Note:* The ARRL band plan designates the channels 144.51, 53, 55, 57 and 59 as linear translator repeaters. Offset 600 KHz minus.

**144.9-145.1 MHz** Packet radio, 10 KHz channels starting with 144.91 and ending with 145.09. The odd channels (i.e. , 145.91,93,95) and the even channels (i.e. , 145.92,94,96) are assigned on a space diversity basis to minimize interference. For example, Portland nodes may be assigned odd channels and Salem nodes assigned even channels.

**144.650/145.250 MHz** Shared, non-protected frequency pair. This pair is used for repeater site testing, emergency repeaters, experimentation, and as a temporary or permanent pair for those waiting for regular coordinated pairs. The ORRC does not provide any protection to systems using this pair, nor does it require any prior coordination before they are used.

**146.0-147.0 MHz** 20 KHz channels starting 146.02/146.62 and ending with 146.40/147.00 low-in/high-out. Offset 600 KHz minus. 147.00 offset 600 KHz plus or minus.

**147.0-148.0 MHz** 20 KHz channels starting 147.60/147.00 and ending with 147.98/147.38 High-in/low-out. Offset 600 KHz plus. 147.00 offset 600 KHz plus or minus.

**146.42-146.60 MHz** Open use frequencies. 146.52 MHz is the National Simplex Frequency

**147.40-147.58 MHz** Open use frequencies.

All remaining frequencies will be used to the maximum extent possible. For details concerning coverage and interference protection see the ORRC Coordination Policies and Procedures.

### 1¼ Meters

**222.0-222.15 MHz** Weak signal operations. Repeater operation NOT allowed.

**222.15-222.30 MHz** Experimental. Reserved to accommodate new technology.

**222.155-224.955 MHz** 248 Pairs low-in, high-out every 5 KHz, starting with 222.155/223.755 and ending with 223.395/224.995. Offset 1.6 MHz minus.

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures

## *Appendix — Band Plans*

**223.40-223.55 MHz** Open use, shared simplex frequencies (223.42, 44, 46, 48, 50, 52, 54). 223.5 MHz is the National Simplex Frequency.

**223.55-223.75 MHz** Packet radio, 20 KHz channels at 223.56, 58, 60, 62, 64, 66, 68, 70, 72, and 74.

### **70 Cm**

Frequency 440 -450 repeater systems input and output having low frequency input reversal and high frequency output shall reverse the input to high frequency input and low frequency output by June 1, 2001.

**420-425 MHz** Coordinated linking, coordination required, 3.75 MHz splits within 420-425 MHz; 10 MHz splits with 433-435 MHz.

**421.350-422.350 MHz** Digital mode radio 100 KHz link channels beginning at 421.350 and ending at 422.350MHz. The ORRC may specify polarization and other parameters for primary user allocation. The spectrum between these channels may be used on a secondary, non interfering basis without coordination or protection. Existing users are grandfathered. (6-8-97)

**425.000-431.000 MHz** ATV, repeater, simplex. Coordinated ATV repeater with a carrier frequency of 426.250 MHz Vestigial or SSB only, repeater coordination required. 426-431 MHz is available for repeater operation under the conditions indicated below.

**431.000-433.000 MHz** Simplex, weak signal NOT coordinated. No ATV, linking or other coordinated activity.

**433.250-433.500 MHz** Digital linking. Coordination is not required and users may request primary coordination for protection. ORRC may grant coordination upon its own motion or upon 438.250-438.500 request by a significant portion of said spectrum users.

**433.000-435.000 MHz** Coordinated linking, coordination required, 10 MHz splits with 423-425 MHz. 5 MHz splits with 438-440 MHz.

**435.000-438.000 MHz** Satellite, NOT coordinated. No ATV, linking or coordinated activity.

**438.000-440.000 MHz** Linking, coordination required. 5 MHz splits with 433-435 MHz.

**440.000-450.000 MHz** Frequency pairs are high-in/low-out every 25 KHz, Starting with 445.025/440.025 MHz and ending with 449.975/444.975 MHz.

**440.975-441.075MHz** 12.5 KHz channels starting with 440.975 and ending with 441.075. The odd channels and MHz existing coordinated allocations are grandfathered and are protected.

**441.500-441.600 MHz** The channels 441.500 and 441.525 are reserved for packet radio operations. The channels 441.550, 441.575 and 441.600 are reserved for FM voice simplex.

**446.000 MHz** National Simplex Frequency

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures *Appendix — Band Plans*

**446.425-446.475 MHz** For the temporary cross-band and remote base station usage. Channels are not MHz to MHz coordinated and all activity are on a shared non-protected basis. PL tones must be used.

**446.500-446.600 MHz** Shared control frequencies:

446.500 CTCSS-HOR	446.510 CTCSS-VER	446.520 CTCSS-HOR
446.530 CTCSS-VER	446.540 CTCSS-HOR	446.550 CTCSS-VER
446.560 CTCSS-HOR	446.570 CTCSS-VER	446.580 CTCSS-HOR
446.590 CTCSS-VER	446.600 CTCSS-HOR	

The following conditions are to be applied when considering any sanction within the 425-431 MHz spectrum:

1. Due to the heavy loading of the 420-440 MHz band, ATV transmissions must be VSB only.
2. The spectrum between 425 and 431 is protected by the ORRC for Fast Scan Amateur Television use only. No other modes of operation are permissible there.
3. Spurious emissions standards for amateur transmissions in the 70 Cm band, established at the -60 dBc level are adopted by the ORRC. This requirement does not supersede the requirement to also operate according to good engineering practice.
4. Proposed repeater/simplex combined operations within the 425-431 MHz spectrum will provide a publicly accessible control method which will turn off the repeater. Further, the repeater owner would be required to state that simplex operations on the repeater channel are not considered to interfere with the operation of the repeater. Effectively, ATV repeater operation is considered secondary to ATV simplex operation.

903.8-904.0 Beacons Exclusion

1,296 MHz 1260-1270 Satellite, WARC 1979

1295-1297 Narrow Bandwidth, Weak signal, EME, CW, SSB,

NO FM

2,304 MHz 2302-2306 Narrow Bandwidth, Weak signal, EME, CW, SSB

2400-2450 Satellite

3,300 MHz 3454-3458 Narrow Bandwidth, Weak signal, EME, CW, SSB

3400-3410 Satellite

# Oregon Region Relay Council (ORRC) Coordination Policies and Procedures *Appendix — Band Plans*

5,800 MHz 5758-5762 Narrow Bandwidth, Weak signal, EME, CW, SSB

5650-5670 Satellite

10,000 MHz 10,000-10,000.5 Narrow Bandwidth, Weak signal, EME, CW, SSB

10,362-10,374 signal, EME, CW, SSB, 10,450-10.500 Satellite

Above 10,500 MHz, requests will be handled by consultation with the ARRL VHF, UHF Advisory Committee.