

MISSOURI REPEATER COUNCIL, Inc.

REPEATER COORDINATION GUIDELINES

FORWARD

“Coordination is necessary to prevent Amateur Radio repeaters from interfering with each other.” --FCC letter, 1984. Persons who willfully place on the air an uncoordinated repeater which causes interference to an existing coordinated repeater may be subject to fines and license revocation by the FCC. Users of the violating repeater may be subject to fines and license revocation. The FCC has stated repeatedly (and acted accordingly) that in the case of conflict, it will ALWAYS be resolved in favor of the coordinated system.

The Mid-America Coordination Council, Inc. (MACC) is a consortium of statewide repeater coordination bodies. These several organizations have banded together and agreed to follow compatible bandplans and standards. Each state entity retains its coordination function and duties, carried out under the umbrella of MACC.

Every possible effort will be expended to accommodate a request for a frequency, but no frequency will be coordinated if it is believed that the requested frequency may cause interference to adjacent systems. It could very well happen that **NO FREQUENCY** will be available on a given band, in a certain area. In this instance, a frequency on a different band is the most logical solution.

STUDY THESE POLICIES, BANDPLANS AND STANDARDS, then contact your State Frequency Coordinator for help in completing your coordination.

OBJECTIVES

The Objectives of the frequency coordination policy shall be to assist in the selection of a frequency according to the repeater bandplans adopted by the Mid-America Coordination Council, Inc. (MACC). In the process of frequency coordination, the coordinator will strive to minimize interference between the various repeating systems and their users in, and adjacent to, the states which make up the Mid-America Coordinating Council, Inc.

GOAL

The goal of the Mid-America Coordinating Council, Inc. shall be to make the most efficient and interference-free use of our limited spectrum for the benefit of the largest possible number of amateurs. Further, it shall be the goal of each member state’s frequency coordinator to provide assistance and guidance in the frequency selection process, to assure operation within the spirit of Amateur Radio. In all cases, the member state’s frequency coordinator cannot, and should not, interfere with the internal operating policies of the individual repeater groups. His sole purpose is to provide assistance and guidance in the frequency selection process while allowing the repeater group to develop and implement its own operating policies.

COORDINATION PROCEDURE

An individual or organization desiring to establish a repeater system should make a request for coordination, in writing, to the State Frequency Coordinator (or Assistant Coordinator) in the state in which repeater operation is planned. The names and addresses are listed at the end of the policies.

APPLICATION FOR COORDINATION

Upon receipt of a written request for coordination, the member state coordinator shall, within 30 days, respond with the following:

1. Application for Coordination Form
2. MACC Coordination Guidelines

Upon receipt of the above forms which have been filed out **COMPLETELY** (including latitude and longitude, accurate to the nearest second) and signed by the applicant, the coordinator will continue the coordination process. Each member state coordinator (or assistant coordinator) shall notify, by mail, other affected state coordinators that coordination is in process at the requested location. This information shall include the following:

1. State of origin
2. Proposed repeater contact person
3. Proposed frequency
4. Latitude and Longitude (to nearest second) of proposed repeater location

Written notification of objection shall be received by the coordinating State Coordinator within thirty (30) days of date of the proposal. If no objections exist to the proposed frequency coordination, the State Coordinator shall advise the applicant that the coordination has been approved. The State Coordinator of the coordinating state shall notify the applicant and all affected state coordinators of final action on the requested coordination. This information shall be promptly placed in the database by the coordinating State Coordinator.

COORDINATION OF REMOTE RECEIVERS

All remote receivers must be coordinated as separate repeaters (cross-band repeaters).

REPEATER CONSTRUCTION PERIOD

After a frequency is coordinated, a period of 180 days is allowed to get the repeater in operation. Operation is defined as fully-tested repeater operation from the final repeater location or site. If the system is not in operation after this 180-day construction period, the coordination is automatically withdrawn. The coordinator may immediately assign the frequency to another applicant. If, however, during this 180 day construction period, the applicant feels that he cannot get the repeater into operation, he may request a 60 day, max. extension, in writing, from the state frequency coordinator. The coordinator may grant the additional sixty (60) day extension for good reason. If the repeater is still not in operation within this extended period, the frequency assignment is automatically withdrawn. The total length of time may not exceed 240 days from the date of the original coordination. The applicant may re-apply for coordination at any later date, but there is no guarantee that the previously coordinated frequency will be available. This allows for efficient use of valuable spectrum and ensures that frequency pairs are not wasted by holding assignments open for protracted periods when applicants fail to construct in a timely manner. **Written notification, from the applicant, is required to be sent to the frequency coordinator at the time the repeater is placed into regular service. This written notification is the final step in the coordination process. The letter of final coordination will not be issued until the coordinator receives this written notification of normal repeater operation.**

TRANSFER OF COORDINATED FREQUENCIES

Coordination is NOT transferable. If a repeater is moved, or its operating parameters modified without notifying the coordinator, coordination is automatically withdrawn. A new application must be made to the coordinator for the new location or operating parameters. The coordinator shall, whenever possible, reassign the originally held frequency pair to the applicant. Application for modification of an existing coordination shall be submitted in writing at least thirty (30) days prior to modification and the actual modification shall not be performed until written notification is received from the coordinator. In the event of the sale of a coordinated repeater, the coordination of that repeater shall have a pending status for a period of sixty (60) days, until the seller relinquishes the frequency coordination, in writing, and the buyer agrees to all coordination guidelines, and the unmodified coordination has been approved by the coordinator. If these terms cannot be mutually agreed upon by all parties, the coordination shall be considered to have been vacated. Many possible problems can arise when repeaters are transferred to other individuals or moved. Therefore, the coordinator's decision on reassigning the frequency rests entirely upon his discretion when the new application is received.

REVOCAION AND TERMINATION OF COORDINATED FREQUENCIES

Licensees who terminate their coordination on assigned frequencies as a result of the sale or transfer of their system or for other reasons, with the intent of not resuming such operation, shall notify the state frequency coordinator of such termination within thirty (30) days of the cessation of their operation and surrender all the frequencies involved. The coordinator shall then entertain requests from other applicants for the use of those frequencies. If a repeater is inoperative for more than 180 days, the coordination is automatically withdrawn. No individual can hold a frequency pair for future use. The coordinator may immediately reassign the frequency. However, if the coordinator is advised before the end of the 180-day in writing, that the repeater is inoperative; he may, at his discretion, and with good reason, hold the frequency for an additional period of time.

TECHNICAL GUIDELINES

BANDPLANS: The member state coordinators shall adhere as closely as possible to the use of the various bandplans adapted by the Mid-America Coordination Council, Inc. Use of Modified Bandplans is at the option of the local State Coordinators with the consent of adjacent MACC State Coordinators.

GEOGRAPHICAL SEPARATION OF REPEATERS: The minimum geographical spacing of co-channel systems shall be as follows:

- 90 miles - for systems that have the transmit antenna less than 100 feet AGL and less than 100 watts ERP
- 120 miles - for systems that have the transmit antenna at 100 feet or greater AGL and a transmitted power of 100 watts ERP or greater

This spacing is considered valid for systems on the 52, 144, 220, 440, 902, and 1215 MHz bands.

Mixed mode (analog and digital) repeaters must be coordinated on standard wideband channels unless the analog mode is narrowband only.

WAIVER OF GEOGRAPHICAL SPERATION REQUIREMENT: Co-channel systems that require 100 mile separation, may be coordinated at 90 miles if the entity requesting coordination obtains a waiver from all coordinated co-channel repeater Trustees that fall between 90 and 120 miles.

The requestor must demonstrate that then new repeater will not cause harmful interference to the co-channel systems. The coordinator retains the right to reject the waver-based request.

ADJACENT-CHANNEL REPEATER OPERATION: The minimum spacing between the two closest points of adjacent-channel repeaters will be as stated below. Please note in the case of interstitial, narrowband channels, different separation is required if one or more of the adjacent channels are wideband.

BAND (MHz)	SPACING	SEPERATION	
52	20 KHz	20 miles	
	40 KHz	No Minimum	
144	7.5 KHz	60/90 miles	60 miles if all adjacent channels are narrowband, 90 miles from any wideband channels
	10 KHz	50/70 miles	50 miles if all adjacent channels are narrowband, 70 miles from any wideband channels
	15 KHz	40 miles	
	20 KHz	25 miles	
	30 KHz	20 miles	
	45 KHz	No Minimum	
220	20 KHz	40 miles	
	40 KHz	5 miles	
	60 KHz	No Minimum	
440	12.5 KHz	30/70 miles	30 miles if all adjacent channels are narrowband, 70 miles from any wideband channels
	25 KHz	5 miles	
	50 KHz	1 mile	
	74 KHz	No Minimum	
902	25 KHz	5 miles	
	50 KHz	1 mile	
	70 KHz	No Minimum	
1215	25 KHz	5 miles	
	50 KHz	1 mile	
	75 KHz	No Minimum	

These minimum distances have been chosen with as much, if not more, weight given to consequences of the transmission of fixed and mobile stations on the input frequency as that given to the consequences of the output of the repeater.

Selective Access Requirements: All new coordination recommendations shall include a Selective Access Method as a condition of coordination. Selective Access shall be in accordance with the MRC Selective Access Policy.