

# Illinois Repeater Association

Newsletter

Volume 18

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Fred Seibold W9FWS, Editor

## Board Sets Tone For Future....

Continuous Tone Coded Squelch System (CTCSS) tones or digital squelch coding, that is. Facing the increased congestion and resultant scarcity of frequency pairs, the I R A Board added this condition to repeater coordination requirements in Illinois at its April Board Meeting: **"All future (after May 1, 2003) repeater coordinations shall include coded squelch (encode/decode) and existing coordinations shall meet the same operating requirements by December 31, 2005."** Board members have pointed out that existing repeaters not using tones may keep operating but will not receive coordination protection from toned repeaters after December 31, 2005. Small tone cards for retrofitting have been described in ham magazine projects; manufactured versions are available from most ham distributors; one such unit measuring 0.6" x 1.08" x 0.21" (about the size of a crystal) is priced at \$28.99 in a recent catalog, permitting toning older rigs at nominal cost. Board member Tim Childers KB9FBI pointed out in a recent discussion of the issue, that **drawing a 120-mile radius around Chicago and St. Louis doesn't leave much of Illinois remaining for locating unconditional coordinations.** An additional benefit of CTCSS will be increased reliability of the repeater due to protection from ducted or scattered interference from emissions lacking the proper (for that repeater) CTCSS tone. Board members are working toward developing tone coordination by regions of the state so a common tone can be used in a given area, simplifying repeater use by transient hams. Many newer H/Ts and mobiles can identify repeater encode tone; a directory is not needed to find the code in use.

-W9FWS

## 2003 Board Meeting Minutes

The Board of Directors of the Illinois Repeater Association meeting for April 11, 2003 was called to order by IRA President Robert Hajek at 8:25 PM at the Best Western, Eastland Suites Bloomington/Normal, Illinois.

### IRA Officers Present:

President Robert Hajek, W9QBH  
Vice President George Isely, W9GIG  
Sec/Treasurer Robert Koch, KA9FCF  
Directors: Larry Schroeder, KA9KDC  
Richard Ranson, N9YAY  
Tim Childers, KB9FBI  
Jack Frank, KE9WS.

### Staff Present:

Carl Bergstedt, K9VXW, Frequency Coordinator  
Aaron Collins, N9OZB, Technical Committee Chairman  
Fred Seibold, W9FWS, Newsletter Editor.

**Guests Present:** Dave Karr, KA9FUR, Wisconsin Frequency Coordinator  
Dennis Mc Cann, W9UH, Past director.

**Request of additional items to be added to the agenda:** President Hajek handed out copies of the agenda and asked if any items should be added. No items were suggested.

**Ratification of actions taken over the past year:** KA9KDC made a motion that all actions taken by the Association be ratified. The motion was seconded by W9GIG and passed by unanimous voice vote.

### Minutes of Previous Meetings:

W9GIG moved and KB9FBI seconded a motion to approve the minutes as previously published in the December, 2002 newsletter. Motion carried by unanimous voice vote.

**Treasurer's Report:** Secretary/Treasurer, Bob Koch, KA9FCF, read the treasurer's for the period of April 2002 to April 10, 2003. Last years balance was \$5,102.05. Through the year expense was \$2,941.87 and income was \$2,947.38. Therefore the

balance as of 04/10/03 was \$5, 107.56. The check from ARRL for 2003 data has not been received yet. KA9FBI moved and W9GIG seconded a motion that the report be accepted as read. The motion carried by voice vote.

### Frequency Coordinators Report:

There is still a problem with annual updates not being returned. With approximately 360 coordinated repeaters in the state **85 have still not responded with the annual updates.** It seems that some still do not understand the importance of the updates. Confirmation and/or correction of the technical data are a condition of continued coordination. Carl is still working with two data bases and is working with Dave Karr with the view to bring everything, including membership status, into one usable data base. The problem with Michigan seems to be solved and all adjoining states are cooperating with coordination. Carl voiced a need for help in maintaining up-to-date records, especially when out of state during the winter months. This will be brought up at the general meeting. One of the repeater owners in Southern Illinois indicated that some were considering starting their own coordination group. Neither Carl nor Bob KA9FCF were aware of dissatisfaction with their activities or any outstanding problems.

### Technical Committee Report:

N9OZB reported that the "Waiting list" has not been updated since 1996. Aaron is aware of KA9SDM waiting for a UHF pair in Lake County. All should be aware that any on the waiting list are expected to update their needs annually in order to remain on the list. Aaron will supply the information he is aware of for inclusion in the newsletter

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## Board Meeting, continued....

**Old Business:** Difficulty in providing repeater pairs in many parts of the state continues to be a problem. While it is suspected that there are some "paper repeaters" shorter spacing seems to be the most viable solution. With that in mind and interference even between even repeaters within existing spacing discussion resulted in the following: W9GIG made a motion that, "The board proposes that all future co-ordinations shall include coded squelch (encode/decode) and existing co-ordinations shall meet the same operating requirements by 31 December, 2005 (12/31/05)" The motion was seconded by N9YAY and carried by voice vote. The recommendation will be submitted to the general membership on 04/12/03.

Results of the committee search for replacements on the board were discussed as well as the need for an orderly changeover. Several of the board indicated stated that they would like to step down, but in the **interest of an orderly changeover** they would serve for one more term if elected by the general membership. Dick W9GIG said that he could not continue due to other commitments. A recommendation of Larry KA9KDC for Vice President and several other names to replace Larry as director were discussed for recommendation to the general membership.

A suggestion that the **annual meeting be moved** and possibly rotated to other parts of the state was discussed. The board feels that the Bloomington is centrally located, but will consider any other suggestions.

**New Business:** There was a discussion of the 2 GHZ (and 900 MHZ) repeaters as well as Packet/Data transmission and how they might fit into coordination. Advanced technology was discussed as follows: Revision of the web site-K9VXW and W9FWS will look into possibilities; Annual forms-possibility of combining data bases for update forms;

Newsletter-possibility of going electronic, rather than US Mail; Recommended squelch band plan for Illinois; Wisconsin plan to gain additional pairs; Dave Karr handed out WI plan and it was discussed; Need for "backup coordinator" for when Carl is out of touch on extended trips.

**Adjournment:** KA9FCF moved and KB9FBI seconded that the IRA Board of Directors' Meeting be adjourned. Motion passed by unanimous voice vote. The meeting was adjourned at 12:38 A.M.

Respectfully submitted,

Robert Koch, KA9FCF  
Secretary/Treasurer,  
Illinois Repeater Association Inc.

## Minutes of 2003 Annual General Meeting of I R A

**Call to order:** The meeting was called to order by IRA president Robert Hajek, W9QBH at 10:10 AM at the Best Western, Eastland Suites, Bloomington/Normal Illinois. Robert J Koch, KA9FCF, secretary/treasurer, verified that there was a quorum present as required in the constitution to conduct business.

**Introduction of Officers and Attendees:** W9QBH asked everyone to introduce themselves and identify the repeater(s) they represent. There were 36 persons in attendance representing 69 repeaters.

**Reading of minutes:** W9GG moved and N9JWI seconded a motion that the minutes of the 2002 annual meeting be approved as published in the IRA Newsletter. Motion carried by unanimous voice vote.

**Treasurer's report:** Secretary/Treasurer Robert Koch, KA9FCF read the report. Balance at the 2002 meeting was \$5,102.05. Throughout the year income was \$2,947.38 and income was \$2,941.87. Therefore the balance as of April 10, 2003 was \$5,107.56. KD6TVP moved and K9UQF seconded a motion that the report be approved as presented.

Motion carried by unanimous voice vote.

**Coordinator's report:** President W9QBH introduced Carl Bergstedt, K9VXW Frequency Coordinator, and thanked him for services well rendered on behalf of the membership. Carl thanked the membership for their cooperation in returning the annual data update sheets and encouraged all to continue and/or even improve the timely responses. Carl commented on the problem encountered this year due to the Post Office mix up on forwarding his mail while in Arizona and thanked any involved for their patience in this matter. Carl is looking into the possibility of publishing an Illinois Band Plan. Also he is working with the Wisconsin coordinator with the hope of gaining a few more pairs in areas of the state where there are no available frequencies.

**Technical Committee report:** Aaron Collins, N9OZB, reported that there are currently no reported interference problems. He is in the process of reactivating the "waiting list" and is currently aware of one request for coordination request on the list. It was also noted that it is the responsibility of those waiting for coordination to renew the request annually.

**President's /Vice President's report:** Bob Hajek, W9QBH, and Dick Isely, W9GIG, combined to present reports, discussion and comments on the following:

- W9GG asked if there was any information about wind profiling in the 70cm band. W9GIG addressed the possibility of military wind profiling coming into the 70cm band but no specifics are known at this time. It is certainly an item to watch.

- MACC seems to be completely inactive and there is a question if the organization will be dissolved.

- NFCC is working with the FCC, however so far the FCC is not willing to consider policy changes citing past difficulties and disposition of past disputes.

- Proliferation of Part 15 devices continues to be of concern.

**ILLINOIS REPEATER ASSOCIATION**

**COORDINATION POLICY and GUIDELINES**  
 May 1, 2003

**INTRODUCTION**

The Illinois Repeater Association, Inc. (IRA) is a charter member of the National Frequency Coordinators' Council, Inc. (NFCC), a nation-wide organization of repeater coordination entities with the purposes of providing national Amateur Radio frequency coordination standards, and representing the interests of these entities before the Federal Communications Commission (FCC) and the American Radio Relay League, Inc. (ARRL). The IRA is also a long-standing member of the Mid-America Coordination Council, Inc. (MACC), which is a 21 State consortium of repeater coordination entities. These entities have banded together and agreed to follow the same detailed bandplans and standards. Each entity retains the coordination function and duties, carried out under the umbrella of the MACC.

The goal of the Illinois Repeater Association, Inc. shall be to make the most efficient and interference-free use of our limited frequency spectrum for the benefit of the largest possible number of Amateur Radio licensees. Further, it shall be the goal of the IRA Frequency Coordinator, under the guidance of the IRA Board of Directors, to provide assistance and guidance in the frequency selection process in order to encourage operation within the spirit of the Amateur Radio Service since nothing except mutual cooperation and common sense prevents any licensed Amateur from establishing a repeater station on any frequency he chooses. This is a voluntary effort which relies on voluntary cooperation and your support is needed and appreciated.

The objective of this 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) using NFCC coordination standards. In the process of frequency coordination, the coordinator will strive to minimize interference between the various repeater systems and their users in, and adjacent to, the states that are served by NFCC-recognized Amateur Radio frequency coordination entities. Even though the objective is to minimize interference, no promises or guarantees of interference-free frequencies can be made.

If you plan to operate an Amateur Radio station as a repeater or an auxiliary station within the State of Illinois, you should coordinate the frequencies with the Illinois Repeater Association. On April 21, 1986, the FCC adopted a Report and Order that amended Part 97 of the FCC Regulations governing the Amateur Radio Service. They made non-coordinated repeaters primarily responsible to resolve interference associated with coordinated repeaters. This permits local coordinators and the FCC to consider technical alternatives, questions of equity, and spectrum efficiency in reaching the most reasonable solution.

The frequency coordination process must operate by a set of policies and procedures that are applied equitably to all holders of coordination and those wanting coordination. That is purpose of this document. These policies

and guidelines are open to constructive criticism by repeater owners and trustees and other parties interested in spectrum management. However, the power to amend these procedures and policies rests with the Board of Directors of the Illinois Repeater Association, Inc.

This edition supercedes all previous editions, addendums, and appendices.

**DEFINITIONS**

**Holder Of Coordination:** The Illinois Repeater Association grants frequency coordinations to a Holder Of Coordination (HOC) as defined below. Frequency coordinations are not the property of the *Holder Of Coordination* and therefore cannot be unilaterally transferred from one holder of coordination to another without the prior approval of the IRA Frequency Coordinator. A request for such a transfer may or may not require a new frequency coordination as determined by the frequency coordinator. Such transfers, if deemed technically workable, must be approved, in writing, by the IRA Frequency Coordinator.

**HOC - Individual:** In the case of an individually owned repeater, that single FCC licensed person is both the Trustee as defined by the FCC and is recognized by the IRA as the *Holder Of Coordination*. As such, that individual is solely responsible for complying with all FCC regulations and statutes, and all IRA imposed frequency coordination requirements.

**HOC - Organization:** Is a structured group of 2 or more individuals. Such a group, or association, may or may not be formally incorporated, but does operate under some form of bylaws, constitution, or other written agreement. The FCC requires that a single licensed individual be the Trustee who shall be responsible for complying with all FCC regulations and statutes. The IRA recognizes the organization as the *Holder Of Coordination* and shall maintain correspondence with the organization's president or duly authorized correspondent. Failure to supply proper written documentation of the organization's status and authorized correspondent shall automatically invalidate the frequency coordination.

Organizations holding IRA frequency coordinations shall keep the IRA Secretary/Treasurer and IRA Frequency Coordinator informed as to who are their current officers along with their addresses and telephone numbers. All correspondence from these organizations should be on the organization's letterhead and signed by the authorized correspondent.

Any request for a change of frequency coordination shall be on the organization's letterhead and shall refer to specific action(s) approved by the organization, and shall be signed by its president or authorized correspondent.

**AGL:** Is a reference of antenna height *Above Ground Level* as measured directly below the antenna to the actual ground. This is the total of tower, and/or mast, and building height.

**HAAT:** Is a reference of antenna *Height Above Average Terrain* that is an average of surround ground elevations within a XX radius of the antenna.

**TECHNICAL GUIDELINES**

1. No frequency coordinations will be issued which conflict with applicable FCC Rules and Regulations.
2. The following coordination parameters for geographical spacing are being used as a guideline as displayed in the tables below:

**TABLE 1**

**Geographical Spacing Guidelines**

FREQUENCY BAND	CO-CHANNEL SEPARATION	ADJ. CHANNEL SPACING	ADJ. CHANNEL SEPARATION
52 MHz	120 Miles	30 KHz	20 Miles
144 MHz	120 Miles	15 KHz 20 KHz 30 KHz	40 Miles 25 Miles 20 Miles
222 MHz	120 Miles	20 KHz 40 KHz	25 Miles 5 Miles
440 MHz	120 Miles	25 KHz 50 KHz	5 Miles 1 Mile
902 MHz	120 Miles	25 KHz 50 KHz	5 Miles 1 Mile
1215 MHz	120 Miles	25 KHz 50 KHz	5 Miles 1 Mile

3. The FCC has eliminated specific power limitations of repeaters according to Height Above Average Terrain (HAAT) and left these decisions up to the local coordinating entity. The IRA tries to adhere to the above standards on geographical spacing in combination with the old FCC repeater power rules as listed in the table below. However, geographical spacing may be reduced, using more limited parameters described elsewhere in this document. (See Table 4)

**TABLE 2**

**Maximum Effective Radiated Power (ERP) For Frequency Bands**

HAAT	Above 29.5 MHz	Above 420 MHz	Above 1240 MHz
Up to 105 Ft	800 Watts	Legal Limit	Legal Limit
105 to 525 Ft	400 Watts	800 Watts	Legal Limit
525 to 1050 Ft	200 Watts	800 Watts	Legal Limit
Above 1050 Ft	100 Watts	400 Watts	Legal Limit

4. IRA coordinates repeater and link frequencies on the basis of making maximum frequency utilization of the various bands. The following bandplans have been announced. All coordinations are made according to accepted bandplans.

**TABLE 3 Repeater Bandplans**

FREQUENCY RANGE	CHANNEL SPACING	OFFSET
29.620 - 29.680 MHz	20 KHz	-100 KHz
52.810 - 53.990 MHz	20 KHz	-1.700 MHz
145.110 - 145.490 MHz	20 KHz	-600 KHz
146.610 - 147.00 MHz	15 KHz	-600 KHz
147.00 - 147.390 MHz	15 KHz	+600 KHz
223.860 - 224.980 MHz	20 KHz	-1.600 KHz
442.000 - 444.975 MHz	25 KHz	+5.000 MHz
906.000 - 909.000 MHz	25 KHz	-12.000 MHz
1282.000 - 1288.000 MHz	25 KHz	-12.000 MHz

5. Coordination of a repeater pair, control link, or remote base is for a specific: Location, Frequency, Receiver Location, Effective Radiated Power (ERP), Elevation (ASL), Antenna height (AGL), Holder Of Coordination (HOC), and Time Frame - Construction and Operational. Any changes or modifications to the preceding criteria void the current coordination and require filing for a new coordination.

6. All repeater and user equipment is assumed to be technically comparable to current land mobile standards, including adjacent channel selectivity, sensitivity, and intermodulation susceptibility.

7. A system balanced between repeater output power and receive capabilities is desirable. Unnecessary repeater transmitter power encourages operators to use more power and creates the possibility for interference to other repeaters.

8. Repeater users should use only the amount of power necessary to operate into repeater systems. This prevents unwanted key-ups of other co-channel or adjacent channel systems.

9. Frequency co-ordinations will be made with as much, if not more consideration given to the consequences of fixed and mobile stations on the input frequency, as compared to the consequences of the output signal of the repeater itself. The majority of repeater coordination problems arise from the users keying up other repeaters in addition to the one intended.

**10. All future (after May 1, 2003) repeater coordinations shall include coded squelch (encode/decode) and existing coordinations shall meet the same operating requirements by December 31, 2005**

**TABLE 4 Reduced Co-Channel Spacing**

FREQUENCY BAND	REDUCED SPACING	MAXIMUM ERP	MAXIMUM HAAT
144 MHz	90 Miles	250 Watts	300 Ft
222 MHz	80 Miles	250 Watts	300 Ft
440 MHz	60 Miles	250 Watts	300 Ft
902 MHz	60 Miles	250 Watts	300 Ft
1215 MHz	60 Miles	250 Watts	300 Ft

1. First and Second adjacent channel spacings remain the same for each of these bands.

2. Full-time CTCSS or equivalent encode/decode is required.

3. Until such time as the coordination entities in the neighboring states agree to these reduced co-channel separations, the 120 statute spacing requirement still applies in the Illinois border areas. The Wisconsin Association of Repeaters has agreed to this reduced cross-border co-channel repeater spacing.

4. Cross-border coordinations with Wisconsin may require coordination of remote receivers.

**CONDITIONS OF COORDINATION**

1. The licensee/trustee is the holder of record of a coordination. All requests for coordination or for changes in listing, call sign, sponsorship, or licensee/trustee information must be submitted in writing over the signature of the licensee/trustee. Club sponsors may make trustee changes provided the request is signed by the former trustee, the new trustee, and a club officer.

2. All major facility changes affecting the coverage of a given repeater output, or the area from which the repeater will attract input transmissions are cause for a new frequency coordination. All of the following changes require recoordination: transmitter location change, primary receiver location change, installation of additional receivers, effective radiated power change, antenna elevation change, radiation pattern change, and repeater ownership change.

3. New frequency coordinations are expected to be operational within 6 months.

a. Written notification, from the Applicant, is required to be sent to the IRA Frequency Coordinator when the frequencies are placed in use. If the system is not in operation at the end of the construction period, the coordination is withdrawn and the frequency reissued.

b. A sixty (60) day construction extension may be requested in writing from the frequency coordinator if extenuating circumstances arise. Reasons need to be outlined in detail as to why extra time is needed.

c. The total length of time for construction may not exceed 240 days.

The frequency assignment will be withdrawn if not completed at the end of this extended period.

4. Frequency Coordinations are not transferable. Coordinations are not the property of the holder of coordination (HOC), or the repeater owner. They not assignable or transferable to other persons. If the repeater is moved, coordination is automatically withdrawn. A new application must be made to the coordinator for the new location. The coordinator shall, whenever possible, reassign the originally held frequency pair to the applicant. In the event of the sale of a coordinated repeater, the coordination of that repeater shall have a pending status for a period of 60 days, until the holder of coordination relinquishes the frequency coordination, in writing, and the new holder of coordination agrees to all the coordination parameters, 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.

5. If a repeater is going to be off the air for more than sixty (60) days, it is necessary to notify the IRA Frequency Coordinator, in writing, explaining the reasons why operation has ceased and when normal operation is expected to be restored.

**COORDINATION PROCEDURES**

1. An individual or organization desiring to establish a repeater system should make a request for coordination, in writing, to the IRA Frequency Coordinator. All communications regarding coordination must be by mail or email for logging in. Upon receipt of a written request for coordination, the member state coordinator shall, within thirty (30) days, respond with the following:

- a. IRA Application for Coordination form
- b. IRA Coordination Guidelines
- c. List of all frequencies in use within 150 miles of proposed location (if requested by applicant as an aid to frequency selection)

2. Upon receipt of a properly filled out and signed Application for Frequency Coordination form, the coordinator will continue the coordination process. Incomplete applications will be returned to applicant for necessary information. Applicant will receive a written notice indicating that the request was received and if all information is complete, when it is going to be sent to adjacent coordinators.

3. Letters shall be sent to adjacent State Frequency Coordinators on the 15th of each month notifying them of the proposed operation or changes to an existing coordination. Comments received within 30 days regarding the proposed coordination will be considered by the IRA Frequency Coordinator.

4. Depending upon the response received from step #3, above, the IRA Frequency Coordinator shall either issue a written coordination approval or shall repeat steps #2 and #3 for an alternate frequency.

5. If an applicant cannot find a frequency pair that meets the spacing guidelines as specified

by the IRA, a procedure called *Self Coordination* may be followed. It is explained in the following section.

## SELF-COORDINATION PROCEDURES

This procedure is intended to allow a repeater owner to work out an acceptable coordination and have it verified by the IRA. It provides a means to gain full coordination status on a frequency pair of his choice, by obtaining the written agreement of all involved parties. The responsibility for obtaining written agreement from all involved parties rests solely with the repeater sponsor. The IRA's involvement at this stage will be to provide the owner with a list of affected co-channel, adjacent channel, and - if required - adjacent State Frequency Coordinators.

It should be noted that the other involved parties are under no obligation to support or agree to the proposed new system or to justify or explain any objections they may have. They may say no for any reason or they may impose certain conditions or limitations on the new repeater in order to obtain their approval. Such conditions may include reduced deviation, limited transmitter power, directional antenna patterns, coded access, etc. Any conditions that can be agreed upon between the new owner and the other involved parties will become conditions to the coordination.

1. IRA will issue a temporary coordination for a 180 day test period upon submission of verified copies or originals of the written agreement from all of the involved parties.
2. A permanent coordination will be issued at the end of this 180 day period if:
  - a. The new system has been in full operation as described in the coordination for a period of not less than 90 days.
  - b. No objections or complaints of interference have been received from any involved party.
3. The temporary coordination will expire if the above conditions are not met. The new owner may request and be granted a single time extension of up to 90 days if an adequate reason can be given.

**REPEATER OPERATION CANNOT BEGIN UNTIL AFTER A WRITTEN COORDINATION HAS BEEN ISSUED TO THE OWNER BY THE IRA.**

## COORDINATION WITHDRAWAL

1. A frequency coordination may be withdrawn by the coordinator for any of the following reasons:
  - a. If the operation is in violation of applicable FCC rules.
  - b. If no working system is operational within 6 months of coordination.
  - c. If a repeater is inoperative for more than 180 days.
  - d. If the station location, frequency,

sponsor, antenna height, ERP, or other provisions of coordination are changed without notifying IRA or requesting recoordination.

- e. If the sponsor fails to respond to written inquiries from IRA within a reasonable period of time. All IRA correspondence will be addressed to the most recent address of record. It is the ultimate responsibility of the owner/trustee to keep IRA informed of the correct mailing address.

## COORDINATION WITHDRAWAL PROCEDURES

### Frequency Coordination Agreement Violation Notice

1. Upon proper authentication of the coordination agreement violation(s) listed above, two copies of a Frequency Coordination Agreement Violation Notice (FCAVN) shall be sent (one by certified mail, with a return receipt requested) by the IRA Frequency Coordinator, or the IRA Technical Committee Chairman, to the frequency coordination holder of record who shall have thirty (30) days from the date of mailing to respond, in writing, to the notice. One copy of this notice shall be mailed to the address listed in the IRA Frequency Coordination Database, and the other shall be mailed to the address listed in the latest annual edition of the *Radio Amateur Callbook*.

### Frequency Decoordination Hearing Notice

2. If the violation(s) have not been resolved within sixty (60) days of the mailing of the FCAVN, a Frequency Decoordination Hearing Notice shall be sent by certified mail, with a return receipt requested, to the coordination holder of record a minimum of thirty (30) days in advance of the hearing.

### Frequency Decoordination Hearing

3. The Frequency Decoordination Hearing shall be conducted by the IRA Board of Directors at which the IRA Frequency Coordinator must be present. All other involved parties should be in attendance and the hearing shall be scheduled to optimize said attendance as long as it is not unduly delayed.

### Frequency Decoordination Action

4. All action(s) taken by the IRA Board of Directors must be supported by solid evidence. This evidence shall be validated by competent witnesses, verified correspondence, and/or physical inspection of the repeater(s) in question by at least two IRA officials.

5. All frequency decoordination action(s) taken by the IRA Board of Directors shall be published in the first *IRA Newsletter* following the hearing.

### Frequency Decoordination Action Reversal

6. A minimum fifteen percent (15%) of the IRA members in good standing may petition for a referendum vote to reverse a Frequency Decoordination Action by the IRA Board of

Directors. Such a referendum request shall be sent by certified mail to the IRA Secretary/Treasurer no later than thirty (30) days after the hearing results have been published in the *IRA Newsletter*.

7. The IRA Secretary/Treasurer shall mail a referendum ballot to all IRA members in good standing no later than three (3) weeks after receipt of the petition. Ballots shall be returned in sealed envelopes to the IRA Secretary/Treasurer no later than two (2) weeks after they are mailed. A teller committee of three IRA members in good standing shall tally the ballots in the presence of two IRA officers. The percentage of votes to reverse the Board's decision shall be the same as is required to amend the IRA By-Laws. The referendum results shall be published in the next *IRA Newsletter*.

## Frequency Recoordination

If there is no referendum on the IRA Board of Directors' action(s). Decoordinated frequency pair(s) shall not be re-coordinated for a minimum of sixty (60) days following the decoordination hearing. If there is a referendum vote taken, and the IRA Board of Directors' action(s) are not reversed, the re-coordination of the frequency(s) in question shall not be done until a minimum of thirty (30) days after the tallying of the referendum ballots.

## INTERFERENCE RESOLUTION POLICY

1. The Illinois Repeater Association is engaged in trying to make maximum use of the available spectrum with a minimum of harmful interference. While minimizing interference is a primary goal, there are no guarantees of interference free use of any Amateur frequency.

2. Due to the continuing and increasing demand for spectrum space, the definition of interference needs to be reconsidered. Many hams consider a situation in which one station keys two repeaters simultaneously as an interference problem. Also, hearing a distant co-channel repeater when the local repeater is not on the air has been considered by some people to be "interference". These attitudes no longer apply under the present level of crowding. Unless one is using a good, selective receiver, one can expect to hear nearby adjacent channel signals as well as the standard run of intermodulation products and de-sensitization problems. This is especially true of repeaters using 15 KHZ channel separation. It is unlikely that these problems will diminish over time.

3. The best defense against these problems includes the following:

- a. Voluntary cooperation with IRA coordination efforts.
- b. Use of the minimum possible power to maintain communications, both at the repeater site and on the part of the users.
- c. Use of receivers having performance consistent with today's conditions, both at the repeater and on the part of users. This will help prevent many de-sense, intermodulation, and adjacent channel problems.

4. Harmful interference is defined as

"interference which seriously degrades, obstructs or repeatedly interrupts the operation of a radiocommunication service" (FCC 97.3(a-21)) when operating within the coordinated service of the system in use. No interference protection can be provided to repeater users outside the coordinated service area of any repeater.

5. The Illinois Repeater Association adheres to the following policy for dealing with interference between repeaters, owners, trustees, and users. This policy is in accordance with NFCC guidelines, and FCC rulings and guidelines.

- a. If an uncoordinated repeater cause harmful interference to a coordinated repeater, the primary responsibility for correcting the interference lies with the trustee of the uncoordinated system.
- b. If both systems are coordinated, the primary responsibility for correction of interference lies with the most recently coordinated.
- c. If the alleged interfering repeater is outside of the IRA coordination service area, the IRA Frequency Coordinator and/or IRA Technical Committee Chairman will work with their counterparts in the adjoining state and follow the guidelines above.

6. If a repeater owner/operator changes any of the parameters on which coordination was based and harmful interference results, that owner/operator shall be responsible for correcting the interference.

#### INTERFERENCE RESOLUTION PROCEDURES

1. Repeater owners receiving harmful interference from another system or its operators, should document, times, conditions, call signs, and describe the type of interference. (Abnormal band conditions should not be considered a reason for complaint.) The trustee of the repeater receiving interference should contact the trustee of the interfering repeater with a letter outlining the problems and include documentation.

2. If all attempts at resolution fail, IRA will attempt to resolve disputes if requested. Contact both the IRA Frequency Coordinator and the IRA Technical Committee Chairman and send all pertinent documentation for reference. This includes a documented history of both repeaters and all information available on coordination and interference. Both of these officials will need cooperation from the individuals involved.

3. If the Technical Committee Chairman cannot resolve the problem, and the operator bearing the responsibility for interference will not cooperate, or take reasonable steps to solve the problem all documentation will be turned over to the IRA Board of Directors for further action. They have the option to investigate further and/or arbitrate with all parties. Non-resolution may lead to frequency decoordination proceedings and/or notification of the FCC Field Office for final action.

#### Addendum

#### LPH FREQUENCY PAIR

January 25, 1997

1. At various times over the past couple of years, Indiana, Missouri, Wisconsin, and Illinois have discussed the feasibility of establishing a common shared-not protected (SNP) frequency pair that could be used by licensed amateur for low-power repeater experiments, temporary operations at hamfests, public service communications, etc., without being coordinated.

2. However, the requirement to protect coordinated first and second adjacent channel frequency pairs would still require that use of such a SNP pair would not be practical in congested areas. Therefore, the IRA Board of Directors unanimously approved the establishment of a Low Power/Height (LPH) frequency pair on 442.125 MHz that would still have to be coordinated using the following parameters:

- a. 30 miles minimum separation for co-channel assignment
- b. 50 ft. maximum AGL antenna height
- c. 50 watts maximum ERP
- d. Mandatory CTCSS or equivalent encode/decode system
- e. 5 miles minimum separation for 1<sup>st</sup> adjacent channel assignment
- f. 1 mile minimum separation for 2<sup>nd</sup> adjacent channel assignment

Robert J. Koch, KA9FCF  
Secretary/Treasurer  
Illinois Repeater Association, Inc.

These policies and procedures have been worked out over the years by unpaid volunteers serving many hours to help us all make better use of our scarce frequencies.

If you have any suggestions for improvement or advancing the state of the art, please contact any Board Member and attend the Annual Meeting April 17, 2004, in Bloomington.

#### Illinois Repeater Association, Inc. Board and Appointees, 2003-2004

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## Annual Meeting Minutes

...continued from page 2

- ARRL is encouraging activity in schools to educate young people about radio in general. It is hoped that this could spark interest in Amateur radio. Specifics on ARRL plans will be published in the near future. Closely related is the need to defend our spectrum and improve the image of Amateur radio. We all need to do a better job of informing the news media of emergency communications and other public service activity and interesting others, especially young people.

**Election of Officers/Directors:** To serve terms of two years. The office of President, Vice President, Secretary/Treasurer and two directors must be filled. Dick, W9GIG, long time Vice President stated that he was not available for re-election due to other time consuming obligations.

**For President:** Robert Hajek, W9QBH was nominated by KA9FCF the nomination was seconded by N9TZ. After further unanswered calls for nominations W9GIG moved that nominations be closed the motion was seconded by N9JWI. The motion carried by voice vote. Therefore, W9QBH is declared elected as President.

**For Vice President:** Larry Schroeder, KA9KDC, was nominated by W9GIG seconded by WD9HSY. Mike McCarthy, N9EAO, was nominated by WA9VGI seconded by KB9WWS. A secret ballot was taken and a committee headed by W9UH was appointed to count the ballots. They reported that the vote resulted in Larry Schroeder, KA9KDC, receiving the majority of the votes. Therefore KA9KDC is elected as Vice President

**For Secretary/Treasurer:** Bob Koch, KA9FCF, was nominated by W9GIG seconded by WD9HSY. After further unanswered calls for nominations N9JWI moved that nominations be closed seconded by KB9APW. Motion

carried by voice vote. Therefore KA9FCF is declared elected as Secretary/Treasurer. Bob stated that this will be the last term in office and would like some help as needed. Nick Lauerman, KB9WWS, volunteered to assist as requested.

**For Director, Two to be elected:** W9UH nominated Tim Childers, KB9FBI for director N9MAF seconded the nomination. KA9SZX nominated Al Wolfe, K9SI for director KA9KDC seconded the nomination. After unanswered calls for further nominations, W9GIG moved that nominations be closed the motion was seconded by N9JWI and carried by voice vote.

**Board for 2003-2004:** The board for the 2003-2004 year will, therefore, be; President-Robert Hajek W9QBH Vice President- Larry Schroeder, KA9KDC Secretary/Treasurer-Robert Koch, KA9FCF Directors- Jack Frank, KE9WS Rich Ranson, N9YAY Tim Childers, KB9FBI Al Wolf, K9SI

**Additional election information:** N9EAO moved that Dick, W9GIG, be thanked for many years of dedicated service to the Illinois Repeater Society. KB9FBI seconded the motion and **the approval was obvious by the extended applause from all in attendance. Thanks Dick!!!!**

**Old Business:** There is still a need to recruit new leadership. Others currently on the board will step down in the next few years so "new blood is still needed. Any interested contact any of the current board.

The possibility of moving the meeting location was discussed but no firm changes were outlined. Wherever the meeting is held there will be considerable travel for some to attend.

**New Business:** The board proposed to the general membership the following change in coordination policy: "All future repeater co-ordinations shall include coded squelch

(encode/decode) and **existing co-ordinations shall meet the same operating requirements by December 31, 2005"** Considerable discussion of the proposal resulted in the addition of the word repeater as included above. Other proposed amendments failed to pass. **The motion to approve the change was made by W9GIG, seconded by KB9FBI and passed with one nay vote.** Mike, N9EAO asked if we had short spacing agreements with any states other than Wisconsin. Carl, K9VXW reported that there were not, but that he is continuing to work with coordinators from adjoining states.

**Adjournment:** There being no further business before the body a motion to adjourn was made by N9EAO and seconded by N9JWI and approved by a unanimous voice vote. The meeting was adjourned at 12:41 P.M.

Respectfully submitted,  
Robert J.Koch-KA9FCF  
Secretary /Treasurer

Illinois Repeater Association Inc.

## April 2004 I R A Annual Meeting Notice

The annual meeting of the Illinois Repeater Association will be held on **Saturday, April 17, 2004** at the Best Western Eastland Suites Lodge and Conference Center, 1801 Eastland Drive, Bloomington, IL. The Best Western is located at Eastland Drive and Prospect just off Veterans Parkway (Business 55). Exit Veterans Parkway at Route #9, which is also Empire Street. Proceed east approximately one block to Prospect then south to Eastland. IRA Delegate check-ins and any dues payments will start at 0900 local, with the meeting starting at 1000 sharp. When dues are paid in advance the check-in process is quicker and eliminates much of the delay. As in the past we anticipate the meeting to conclude around 1300 to 1400. An IRA "Membership Information" form on file listing the delegates (max of two) and signed by the president and/or trustee and showing paid up dues for 2004 are all that are needed to vote at the meeting.

**Please take time to attend and give your input to your Association.**



**Illinois Repeater Associaton**  
**333 Hubbard Avenue**  
**Elgin, IL 60123-3431**

**Annual Meeting Notice**  
**April 17, 2004**

**Coded Squelch Needed**  
**For Coordination**  
**Details Inside**

Aaron A. Collins-N9OZB  
 N9OZB/R-2003  
 1338 So. Arlington Heights Rd.  
 Arlington Heights Il 60005

**First Class Mail**



**How To Get Coordinated**

By Aaron A. Collins, N9OZB  
 IRA Technical Committee Chair

Many people have asked me what the steps required are to go about finding a useable frequency pair in Illinois. The answer varies based on where you want to set up a repeater. In the Central and Southern parts of the state, there is usually no problem finding an open repeater pair, but the story is different further North. There are no unassigned pairs available Northeast IL, particularly so around the downtown Chicago area. So, IRA has adopted the following policies, with essentially 3 ways to get a frequency pair:

1. If you want a pair and none are available, you can be placed on a waiting list we maintain. There are a few people (2-4 depending on band) already on this list, we can add you if you like. Pairs become available due to either someone voluntarily rescinding a pair, or because of decoordination resulting from infractions of IRA policies. The IRA rules and bylaws clearly state the conditions that could result in this action, such as lack of current contact information, failure to file annual renewal paperwork, failure to respond to official communications, etc. The pairs that become available in this manner are put into a "pool" of available frequency pairs, and are made available to persons on the waiting list, if they can use the newly available pair in their geographic area. The first person on the list may not always be able to use that pair in their area. If not, then we go down the list until we can find someone who can use that pair in their particular area.

2. Because we can't actively monitor the existence of all of the 400-odd coordinated repeaters in IL, if someone finds a pair that is inactive, and brings it to our attention, then as long as the holder of the coordination has not filed a notice of maintenance with IRA (giving them a grace period for site construction or repairs) we can begin investigating that pair for decoordination proceedings. This involves confirming the site is off the air, then attempting to contact the pair's coordination holder, and ascertain whether or not the pair is still wanted, and if so, why it is not on the air. If the coordination holder still wants their pair, at that point they must file a maintenance notice with IRA in order to prevent further decoordination proceedings. If there is no contact, or the holder does not return to the air within the time allowed by the maintenance grace period, then the repeater is slated for decoordination. There is a de-coordination hearing then, to approve the de-coordination action, if it is not an automatic de-coordination due to IRA rules violations. Finally, the pair would be put into the "pool" of available frequency pairs and offered preferentially to persons waiting on the list. Although this process may seem a bit involved and lengthy, try to look at the opposite side of the coin: You will want your new coordination to share these same protections and graces, so someone can't try to make a "grab" for your frequency pair the first time you go off the air.

3. The third method is called "Self-Coordination". This means if you find a frequency pair you think you can use, you can enter into a short-spaced agreement (usually called a "waiver of non-interference") with

another existing repeater owner. That allows you to operate a repeater on the same frequency pair as an existing one, while being closer to it than what we would normally allow to be coordinated. This has both pros and cons. Pro: You bypass the waiting list. Con: Your coordination is revocable and conditional on the agreement of non-interference. Typically, such an agreement is worded so that the coordination would be contingent on your not interfering with the existing repeater system, and usually would place the responsibility of insuring that no interference occurs completely upon you. If any interference results, you must either resolve the conflict, or "pull the plug". If you would like to have some possible pairs suggested, so you may contact the coordination holders to see if they will agree to a waiver, they can be provided at your request. Note that such an agreement is between you and the other coordination holder, and you must provide IRA with a signed copy of the agreement for us to consider such a short-spaced coordination.

In closing, don't get discouraged. You may be surprised to find out the wait is shorter than you thought. New pairs become available from time to time, sporadically, and if you want to be considered, be on the list! Also, note that prospective applicants should file an application for coordination with the IRA Frequency Coordinator. This way we have your information on file pertaining to coordinates, antenna location and height, ERP, etc. All of the information may not apply (like frequency, for example) but fill out anything else you can on the form, the more information you can provide, the better we can help you.