

Radio Communications and the CIBA Hilly Hundred Weekend

Radio communications support for the Central Indiana Bicycle Association (CIBA) Hilly Hundred Weekend is provided by independent volunteer amateur radio operators. These include members of Bloomington Amateur Radio Club, the Indiana University Amateur Radio Club, the Monroe County ARES-RACES Group (an affiliate of ARRL and local Emergency Management), and the Monroe County Repeater Association, as well as other amateur radio operators from across the state.

1. **Volunteer.** Radio amateurs volunteer for service at Hilly Hundred Weekend through both CIBA and the amateur radio groups. CIBA oversees organizing supplies and support, while local hams then organize the communications assignments in collaboration with CIBA.
2. **Assignments.** Minimum requirements are five (5) radio operators each day: Net Control, three (3) rest stops, and one (1) roving SAG (support and gear). Radio amateurs typically provide enough volunteers to backup all four stationary positions, as well as radio support in upwards of six roving SAG vehicles. Often, additional hams will accept assignment as stationary SAGs at the rest stops. Additionally, volunteers may change locations, be reassigned, and fill in as needed as the event unfolds.
3. **Responsibilities and Duties.** CIBA is responsible for operation of the Hilly Hundred Weekend events. Radio amateurs are responsible for communication. SAG duties are part of the CIBA structure, but hams doing double duty as SAGs are also part of the communications structure. It is important to maintain this dichotomy of responsibility.
 - . **Net Control:** It will be the duty of the Net Control Operator to organize the traffic to and from the remote stations, to communicate information to and from CIBA Command Center and CIBA volunteers on the route, to direct traffic between radio amateurs both on the route and on station in a manner that best serves the needs of CIBA. It is also the duty of the NCO to maintain and operate the *Net Control Station* in a manner that best serves the needs of the radio amateurs, consistent with FCC regulations.
 - . **Station Hams:** Communications to and from the six (6) rest areas will be through assigned stationary radio operators. It will be the duty of such Station Ham to check in with the rest stop director at least 15-30 minutes prior to posted opening time and advise that the ham will organize traffic to and from the CIBA workers at the rest stop and the CIBA Command Center, will maintain communication between Command Center and CIBA SAGs, and will pass traffic from bicyclists to and from Command Center. It is the duty of the Station Ham to maintain and operate the remote station in a manner consistent with FCC regulations and best ham practice.
 - . **SAG Hams:** Radio amateurs will provide communication between CIBA Command Center and SAGs (either as ride-along ham, as SAG driver/ham, or as a Stationary SAG). It will be the duty of the SAG Ham to maintain either a base or mobile station at the SAG location consistent with FCC regulations and best ham practice.

4. **Radio Frequencies.** Hilly Hundred Weekend will use two primary frequencies. The repeater net frequency will be 146.64 (- .600 offset). The simplex tactical frequency will be 146.58. The backup net frequency will be either the N9TC 146.895 (- .600 offset, PL 136.5 Hz) repeater or the WB9HZX 147.18 (+ .600 offset, PL 136.5 Hz) repeater. Tactical traffic is sometimes passed using 443.775 (+ 500 offset, PL 136.5 Hz). Determination will be directed by NCS. The selection of these, or other, frequencies by Hilly Hundred Weekend in no way prohibits their use by other radio amateurs. Proper amateur operation and courtesy shall be observed at all times.
5. **Net Operations.** The Hilly Hundred Weekend is a *Directed Net*. All communications traffic will be channeled through the Net Control Station. NCO will not attempt to start the net until the frequency is clear. WB8TLH (146.64) will be placed in net mode (no PL tone, single courtesy beep) unless band conditions warrant a protective PL tone. At such time, and at appropriate intervals, Net Control will announce that a PL of 136.5 Hz would be required to access the net. “Emergency” or “Priority” traffic, whether from the event or from other sources, will have priority over all other traffic.
6. **Prioritizing Traffic/Words.**
EMERGENCY--Any message having life and death urgency to any person or group of persons, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be *very rare*. When in doubt, do not use it.
PRIORITY--This is for a) important messages having a specific time limit, b) official messages not covered in the emergency category, c) press dispatches and emergency-related traffic not of the *utmost* urgency, d) notice of death or injury in a disaster area, personal or official.
WELFARE--This refers to either an inquiry as to the health and welfare of an individual in the disaster area or an advisory from the disaster area that indicates all is well. Welfare traffic is handled only after all emergency and priority traffic is cleared.
ROUTINE--99 out of 100 messages will be *Routine* traffic/words and will be prioritized by NCS depending upon the needs of CIBA. In disaster situations, traffic labeled Routine should be handled last, or not at all when circuits are busy with higher precedence traffic. NCS will typically use “Wait” or “Stand by” to line up calling stations during high traffic periods or while consulting with appropriate authorities, such as CIBA Command Center.
7. **Simplex Tactical Frequency.** When within range, mobile SAGs and hams may contact the Station Hams using the simplex frequency 146.58. These shall be informal contacts using standard station-to-station protocols and requiring no net discipline. Where possible, at least one station at each location will be monitoring the simplex frequency. If it is difficult to make contact, rely on NCS to pass the traffic on the Hilly Hundred net. “*Rest Area 2. Please meet SAG [callsign] on simplex*” or “*ARL ELEVEN on 146.58*” – see ARRL Radiogram, the “check” is “ARL,” not ARRL.
8. **Accuracy and Brevity.** Hams will endeavor to limit transmissions to 20-30 seconds and will pause between transmissions in order to allow traffic of higher priority to be passed on the net. *Writing down (or logging) both incoming and outgoing messages facilitates accuracy and brevity.*

Tactical Callsigns. The use of tactical callsigns to save time and assist in location will be encouraged. Mobile hams and SAGs may use suffixes as tactical callsigns. FCC regulations requiring full call identification at the end of each contact (and at 10 minute intervals) will be strictly followed.

*Rest Area one, this is Net Control ...Net Control, this is Rest Area one
[traffic/words]
... [callsign], Rest Area one, clear ...[callsign], Net Control, clear*

Direct Contact and Third Party Traffic. These tactics can save valuable airtime and are often more accurate than voice relays through the NCS.

Direct Contact. NCS will honor requests for “...*permission to go direct with [callsign].*” This is similar to National Traffic System (NTS) “Tactical dispatching,” except, for expediency, the transmitting station, rather than the receiving station, shall initiate the direct call. Both stations will end *Direct Contact* with “[callsign] clear.”

Third Party Traffic. When passing traffic between non-hams (such as between a CIBA official and a CIBA volunteer) or between a ham and a non-ham, operators may use “third party traffic” techniques to facilitate the information exchange. The control operator should inform the third party of FCC rules, instruct them to keep transmissions short, and maintain control of the PTT switch. Hams operating *Third Party Traffic* will clear with “[callsign] ending third party traffic.” If possible, a better choice would be to use “formal” NTS messages and ARRL Radiograms.

9. **Code and Ciphers.** Amateur radio operators may not hide the meaning of communications by putting them in codes or ciphers – except for a few specific exceptions cited in FCC Part 97. CW is one of the exceptions; another is the ARRL “numbered Radiograms.” These may prove useful for events. However, since this is a “phone” net, reading the entire Radiogram may be cumbersome. Balance the use of these numbered communications for instances in which accuracy and radio security are more important than expediency.

ARRL Numbered Radiograms for Emergency Use: [adapted]

ONE -- Everyone safe here. Please don't worry.

TWO -- Coming home as soon as possible.

THREE -- Am in ____ hospital. Receiving excellent care and recovering fine.

FOUR -- Only slight property damage here. Do not be concerned about disaster reports.

FIVE -- Am moving to new location. Send no further mail or communication. Will inform you of new address when relocated.

SIX -- Will contact you as soon as possible.

EIGHT -- Need additional ____ mobile or portable equipment for immediate emergency use.

NINE -- Additional ____ radio operators needed to assist with emergency at this location.

TEN -- Please contact _____. Advise to standby and provide further emergency information, instructions or assistance.

ELEVEN -- Establish Amateur Radio emergency communications with _____ on ____ MHz.

THIRTEEN -- Medical emergency situation exists here.

FOURTEEN -- Situation here becoming critical. Losses and damage from ____ increasing.

FIFTEEN -- Please advise your condition and what help is needed.

SIXTEEN -- Property damage very severe in this area.

EIGHTEEN -- Please contact me as soon as possible at _____.

NINETEEN -- Request health and welfare report on _____.

(State name, address and telephone number.) [Transmit this ONLY after request from NCS.]

TWENTY -- Temporarily stranded. Will need some assistance. Please contact me at _____.

TWENTY ONE -- Search and Rescue assistance is needed by local authorities here. Advise availability.

TWENTY TWO -- Need accurate information on the extent and type of conditions now existing at your location. Please furnish this information and reply without delay.


TWENTY THREE -- Report at once the accessibility and best way to reach your location.

TWENTY FOUR -- Evacuation of residents from this area urgently needed. Advise plans for help.

TWENTY SIX -- Help and care for evacuation of sick and injured from this location needed at once.

ARRL Message Form

In times of emergency, radiograms may be used to communicate information critical to saving lives or property or to inquire or learn about the health or welfare of a disaster victim. During these times, NTS works in concert with ARES and other emergency and disaster relief organizations. In some cases, the message form also serves as a log of the operation. Multiple copies of this form will be distributed to volunteers and ARS operators.

	<p>The American Radio Relay League RADIOGRAM Via Amateur Radio</p>						
	Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed
To:				This Radio Message was received at:			
				Amateur Station _____			
				Date _____ Phone _____			
				Name _____			
				Street Address _____			
				City, State, Zip _____			
Telephone Number:							
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
Signature							
REC'D	From	Date	Time	SENT	To	Date	Time
A licensed Amateur Radio Operator, whose address is shown above, handled this message free of charge. As such messages are handled solely for the pleasure of operating, a "Ham" Operator can accept no compensation. A return message may be filed with the "Ham" delivering this message to you. Further information on Amateur Radio may be obtained from ARRL Headquarters, 225, Main Street, Newington, CT 06111.				The American Radio Relay League, Inc. is the National Membership Society of licensed radio amateurs and the publisher of QST Magazine. One of its functions is promotion of public service communication among Amateur Operators. To that end, The League has organized the National Traffic System for daily nationwide message handling.			

In accordance with FCC regulations, the contents of messages handled by amateur radio are not divulged to any unauthorized persons. These communications are furnished without any form of compensation. This form is more efficient than many "relays" which may be incorrectly "translated" by the operators, especially if there is a high percentage of special agency terminology or technical terms.

ARRL FSD-3 contains Relief *Emergency Recommended Procedures* which allow for the use of "numbered" Radiograms. FCC rules and regulations allow for these ARRL numbered shortcuts as they are not intended to obscure the contents of the message, but rather to further reduce the possibility of ambiguity or error. These "numbers" refer to the following shortcuts in **Group One for Possible Relief Emergency** traffic – not to the "message number" box on the Radiogram:

10. **Personal Supplies.** Hilly Hundred Weekend assignments and duties create different scenarios for each operator's need for personal supplies. Monroe County ARES-RACES members have an "Emergency Response Preparation" list which can be adapted to the Hilly Hundred Environment, depending upon assignment. ARRL provides suggestions for such supplies in publications and on the www.arrl.org website.

Operators assigned to Rest Areas 1, 3, 4 and 6 will have access to snacks, fruit, and water; the Lunch Stops (Rest Areas 2 and 5) will have full lunches available. Operators assigned to a critical location or reassigned to meet needs may not have immediate access to food and water. Mobile hams and SAG support operators will probably be able to reach an appropriate rest stop.

If you have specific meal times or need to have particular meals, plan on packing a meal and liquids at least as back-up to whatever is available on the route. Volunteers must not rely on meals being delivered by the mobile operators. SAGs are responsible for supporting the riders.

Basic Deployment Equipment Checklist [adapted]

- HT (or mobile) with 2-meter TxRx capability
 - Multi-band HTs should have at least 70 cm TxRx and wide-band Rx capability.
 - Appropriate portable/mobile gain antenna, connections and adapters
 - Earphone and/or speaker mic
 - Extra batteries and auxiliary power adapters
- Pencil and paper (including logging sheets)
- Callsign and location roster.
- Wireless telephone and emergency telephone numbers.
- An appropriate map of the locale
[route and area maps supplied by CIBA Hilly Hundred]
- Identification:
 - Laminated wallet-size copy of the FCC amateur operator/station license
 - ARES and/or RACES photo ID card
 - Participating agency ... ID card(s)
[CIBA Hilly Hundred hang-tag and meal bracelet strap]
 - BARC Communications and/or EMA Emergency vehicles sign(s)
[appropriate Hilly Hundred-supplied SAG, Communications, First Aid signage]
- Appropriate clothing, sunscreen, insect repellent, camp stool or folding chair
- Food and water.
- Appropriate prescriptions and necessary OTC drugs. It is a good idea to carry some description of any personal physical or medical condition that may be needed to assist you in an emergency.
- Cooler and dry pack.