Volunteer Emergency Communications Plan

for Monroe County, Indiana

Monroe County ARES – RACES Group

Amateur Radio Emergency Service
Radio Amateur Civil Emergency Service

Serving our community through Amateur Radio

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Purpose

The purpose of this plan is to provide broad written guidelines with a minimum of information needed in an emergency and to define the roles and responsibilities of the licensed amateur radio operators volunteering for Emergency Communications service in Monroe County.

Monroe County ARES – RACES Group
Emergency Management Agency
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Dedication

Amateur radio involvement in Monroe County volunteer emergency communications and the initial connection with local emergency response agencies centered around Steven Settle (WD9EVK) and Millard Qualls (K9DIY). Settle served as communications officer for the Emergency Management Agency committee and was instrumental in selecting amateur radio equipment for the newly-constructed city-county Justice Building. Qualls succeeded Settle as the Amateur Radio Emergency Services [ARES] Emergency Coordinator and focused on the radio amateur's role in disaster recovery and welfare communications.

The growing role of VHF-UHF repeaters has been facilitated by the *Indiana University Amateur Radio Club [IUARC]* -- Daniel Miller (KQ9I) and Jay Sissom (KA9OKT), the *W9WIN* linked 440 system -- Mike Poe (KB9SGN), but especially by the *Monroe County Repeater Association* -- Brian Crouch (N9LKT), Richard Landgrebe (WB9HXP), Dwight Hazen (WB9TLH), and Russell Ryle (N9DHX), who served as net manager on the K9OK (now WB8TLH) repeater and as liaison with National Weather Service, Central Indiana Skywarn, and the Indiana Karst Conservancy Cave Search-Rescue Team for many years.

Millard Qualls (K9DIY)
[*ARES Emergency Coordinator, Emeritus*],
operating as Net Control Station
at Red Cross Shelter,
St. John's Catholic Church, Ellettsville,
during September 20-21, 2002, tornado recovery.

Emergency Management Director John Hooker and then-Bloomington-Monroe County American Red Cross Director of Disaster Services Ed Vande Sande suggested a formal cooperative arrangement following the startling events of September 11, 2001, that resulted in the formation of the MONROE COUNTY ARES-RACES GROUP, giving the county a seamless sequence of emergency response from individual radio amateurs, through radio support for non-governmental agencies, to formal Emergency Management Agency involvement – supported in no small way by the membership of *Bloomington Amateur Radio Club [BARC]*, which provides considerable meeting time and space (with *Bloomington Hospital*).

This plan is dedicated to those individuals, organizations and institutions by the

MONROE COUNTY ARES-RACES GROUP Emergency Committee

Monroe County

Monroe County, Indiana, is located at approximately 39° 9' N, 86° 25' W and covers nearly 412 square miles. It has 11 townships, one (1) city and eight (8) towns within its jurisdiction. According to the 2000 Census, Monroe County had a population of 120,563.

Monroe County has one (1) airport. There are approximately 300 public buildings and recreational facilities located in Monroe County. These are State, County, City, and Township offices and facilities, the Indiana University and the Ivy Tech State College campuses, United States Postal Service offices, and Richland-Bean Blossom Community School Corporation (RBB) and Monroe County Community School Corporation (MCCSC) facilities. Monroe County has 27 tornado sirens serving the county, with additional locations planned.

Law enforcement offices include the Indiana State Police, Monroe County Sheriff, Bloomington Police, Ellettsville and Stinesville town marshals, Indiana University Police, Indiana Conservation Office – South Region, and local office of the Federal Bureau of Investigation (FBI). The City of Bloomington has five (5) fire stations and an Operations Center, Ellettsville has two (2), and there are 11 fire stations located in seven (7) of the townships. There are cooperative response agreements among these departments which assure coverage of all townships. There is a Hazmat Team located at the Old SR 37 North station of the Bloomington Township Fire Department. Monroe County has one (1) general hospital, a university health center, and approximately 12 special purpose medical facilities and clinics.

There are state and national forests, three sizeable (3) lakes, and numerous local recreational facilities located in and around Monroe County. The western part of the county features karst regions with a vast network of mapped and unmapped caves and caverns. Monroe County is within range of both the Wabash Valley fault system and the New Madrid fault system.

There are approximately 500 licensed amateur radio operators in Monroe County. That pool increases with participation of transient residents licensed outside Monroe County. At least 50 operators, including many from surrounding counties, regularly volunteer their capabilities and/or equipment for Emergency Communications service, organized under the auspices of the Monroe County ARRL ARES-RACES Group: Amateur Radio Relay League Amateur Radio Emergency Service (ARES) and Radio Amateur Civil Emergency Service (RACES). These include members of the Bloomington Amateur Radio Club (BARC) and the Indiana University Amateur Radio Club (IUARC) as well as unaffiliated operators.

The Role of Amateur Radio

Volunteer public service communications have been a traditional responsibility of the Amateur Radio Service since 1913. Amateurs at the University of Michigan and Ohio State University, as well as individual amateurs in and around the region, stepped up to provide communications in an area isolated by a severe Midwest windstorm. In the early days, the functions of such disaster work were spontaneously organized to meet the needs and circumstances of the event.

Today, Amateur Radio disaster work is highly organized and practiced. Communications support is implemented principally through the National Traffic System (NTS), the Amateur Radio Emergency Service (ARES), the Radio Amateur Civil Emergency Service (RACES), as well as independent nets and other amateur public service groups -- all recognized as part of the Amateur Radio Relay League (ARRL) public service efforts.

Internet and telephone service, as well as inexpensive Family Radio Service (FRS), General Mobile Radio Service (GMRS), Multi-Use Radio Service (MURS) and Citizens' Band (CB) radio service have the potential to parallel or supplant amateur radio and ham operators providing communications support for public service and emergency events. However, none are as organized or as practiced as amateur radio.

While Internet connectivity is becoming more common and easy to use. It still requires comparatively expensive equipment and reliable wired or wireless connections. Cellular and "plain old telephone service" (POTS) in addition to voice, can provide Internet connectivity. Internet messages can be either one-to/from-many or one-to-one. POTS and cell messages are one-to-one. Wired connections are not always conveniently or consistently available in all areas. Wireless connectivity is typically dependent upon transmit power, antenna gain, proximity to receivers or relay stations, and frequency or band characteristics. Many event leaders and participants use cell phones when possible.

Radio transmissions are one-to/from-many. FRS, GMRS, MURS and CB radio service may be used by any citizen for personal or business purposes. All are designed for short range communications by limiting either the frequency or transmit power. CB no longer requires a Federal Communications Commission (FCC) license, uses High Frequency (HF) channels on the 11-meter "shortwave" band, but is limited to 4 watts of power. FRS does not require an FCC license, is limited to less than 1/2 watt (500 milliwatts) of power and a non-detachable antenna, and uses UHF frequencies. GMRS radios require an FCC license because they generally transmit at higher power levels (1 to 5 watts is typical) and may have detachable antenna. Some radios are certified for use in both FRS and GMRS on the basis that some channels are authorized to both services, or a user of the radio may communicate with stations in the other service.

Since May of 2003, Multi-Use Radio Service (MURS) has been FCC-authorized to use VHF channels on 151.820-154.600 MHz with up to 2 watts of power. MURS stations are prohibited from operating as a repeater station, as a signal booster and as store-and-forward packet operations. During a public service event, many participants use these services for personal communication.

The FCC not only permits but encourages licensed amateur radio operators to assist in emergencies and "provide essential communications in connection with the immediate safety of human life and the immediate protection of property when normal communications systems are not available." If POTS, cell, or Internet connectivity is lost, radio transmissions can provide communications links.

While unlicensed radio is restricted, licensed amateurs have up to 1500 watts of "peak envelope power" (PEP) available for transmissions and may use both repeater stations and packet operations. Tactical communications in first-response circumstances typically use 2-meter frequencies in the VHF band, either on repeater-supported net frequencies or on simplex frequencies. However, more extensive emergency situations can involve any or all of the amateur frequencies from low band 160 meters through the HF and VHF frequencies to Ultra High 1300 MHz, and a variety of modes, including CW, packet, RTTY and television, as well as phone (voice). Public service activities provide operating and training opportunities of amateur radio emergency service.

NTS operates daily to handle local and remote written traffic, in a standard ARRL message format, over nets at four levels, connected through liaisons that assure systematic point-to-point flow, in the shortest possible time consistent with organizational objectives and mass handlings. ARES consists of licensed amateurs who have registered the availability of themselves and their equipment and are trained for emergency operations in the public interest under the operational leadership of local and district Emergency Coordinators (EC).

RACES consists of licensed amateurs registered and trained through local emergency management agencies to serve government civil preparedness entities at local, state and federal levels under the leadership of licensed amateur leadership, appointed by the government agencies as RACES officers.

Individual Amateur Radio operators participate as members of other public service support groups as well as volunteer as communicators in support of those functions. At the organizational level, formal relationships on the local and national level between Amateur Radio and other public service groups provide structures that facilitate volunteer emergency communications support for a wide variety of events and circumstances. Part 97 of the Federal Communication Commission's (FCC) Rules and Regulations states, as the first principle under "Basis and Purpose," the following: "Recognition and enhancement of the value of the amateur service to the public as a voluntary, non-commercial communication service, particularly with respect to providing emergency communications."

Emergency Service and Training

Government and Relief Agencies
Local, State, and Federal Emergency Management Association
National Weather Service
Central Indiana Skywarn
American Red Cross
Salvation Army

Public Service Events
Message Centers
Parades
Sports Events

Natural Disasters and Catastrophes
Precipitation Reports
Severe Weather Spotting and Reporting
Weather Warnings
Hurricanes
Tornadoes
Floods, Mudslides, Tidal Waves
Winter Storms
Brush and Forest Fires
Earthquakes and Volcanic Eruptions

Shelter Operations
Health and Welfare Traffic
Property Damage Surveys

Accidents and Hazards
Vehicle Accidents

Assistant ARES EC/ RACES Officer,
[Simplex Manager] Maynard Raggio
(N9PTG), operates at Field Day.

Tom Busch (WB8WOR) aligns
antenna for satellite operations at
Field Day, 2004

Emergency Condition Alerts

The various Monroe County emergency communications groups will be notified of an emergency by their own activation methods and advised of the status with the following condition alerts:

Condition 1: Standby [Mitigation]

A potential emergency exists and there is the possibility of a tornado, flooding, wildfire, or other natural or man-made emergency.

Receive notification by telephone tree plan and/or radio net.
Secure home. And family
Monitor designated frequencies for information and liaison assignments.
Charge batteries
Assemble radio and personal equipment for deployment
Have a full tank of gas in vehicle.
Be ready to respond.

Condition 2: Primary Mobilization [Preparedness]

Threat is imminent - shelters opening, evacuation begins.

Designated agency members report to agency centers/headquarters.
ARES-RACES members and volunteers respond to NCS. For a RACES event, only RACES members should respond.
Designated ARES-RACES members and volunteers report to liaison locations— local shelters, area hospitals, law enforcement stations, etc
Remainder of ARES-RACES volunteers standby for relief at primary locations or assignment to secondary locations as they are opened.

Limited or local emergency - tornado, explosion, fire, plane crash, chemical spill, etc.

Designated ARES-RACES volunteers report to assignments as directed.

Condition 3: Full Emergency [Response]

Event or serious emergency is in progress.

All ARES-RACES volunteers assigned are on standby status, depending on the severity and duration of the emergency.
Emergency traffic only; repeaters and simplex frequency are closed to all but necessary emergency traffic.
The simplex frequencies will be assigned for tactical traffic as needed.

Condition 4: Aftermath [Recovery]

Assist as necessary with cleanup.
Assist government agencies as necessary to supplement their communications and/or substitute for inoperative equipment.
Assist with damage assessment.
Deliver messages to and from outside areas