Cherokee County, GA
Amateur Radio Emergency Service®
Operations Manual

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Revision History

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Review and Updates

This manual should be reviewed by the Cherokee County Emergency Coordinator (or designee) annually or whenever there have been changes that warrant such review. If no changes were needed, the version number can be appended with a letter (a, b, c, etc.), the copyright date and publication date refreshed and the document re-published.

Copyright Information

Updates and revisions to this document will be posted on the Cherokee County ARES web site http://www.cherokee-ares.org/

Table of Contents

1 Introduction

1.1 Welcome

Welcome to the Cherokee County, Georgia Amateur Radio Emergency Service® (CC-ARES) Operations Manual. This manual is a living and breathing document that is intended to be both a guide that gives the reader a basic understanding of how we implement amateur radio emergency communications within our organization and a general reference book.

While amateur radio is a hobby, we encourage you to participate in our weekly nets, various drills/exercises throughout the year, and be prepared to answer the call from our community when emergency communications are needed. We request that you print this manual along with 10 blank copies of each form. We request that you familiarize yourself with the contents of this manual.

We are NOT storm-chasers, nor are we First-Responders. We are a dedicated group of amateur radio operators that follow a chain of command. We deploy only when requested by our served agency, and only when approved by your Emergency Coordinator of Cherokee County, or one of the delegated Assistant Emergency Coordinators.

We encourage you to participate and give back to your community and remain prepared to answer the call to service when requested.

1.2 ARES and RACES

There are two principal groups that handle emergency communications using Amateur Radio, ARES® and RACES. The Amateur Radio Emergency Service (ARES) is a volunteer group organized through the American Radio Relay League (ARRL). You do not need to be a member of the ARRL to be part of ARES. The only requirements are to possess an Amateur Radio licensee and have a desire to serve. ARES members enjoy no special privileges and must comply with all FCC and other government rules when operating. If the President chooses to limit access to the Radio Spectrum under the War Powers Act, or another emergency declaration, ARES members must fully comply with these rules.

The Radio Amateur Civil Emergency Service (RACES) was created to deal with just this situation. Amateur Radio Operators must register with the state or local government in advance of an emergency to be part of RACES. There are many special regulations in part 97 of the FCC rules dealing with this service (§97.407). Other than limited drills, RACES can only operate during an officially declared emergency.

Many operators are registered with both organizations so that they can just “change hats” to meet the requirements of any given situation. You must submit an FSD-98 as well as a RACES form to become a member of ARES, as well as comply with additional training requirements covered later in this document. Based on your level of training, your participation in ARES will be adjusted.

1.2.1 ARES and RACES Comparison

Aspect	ARES	RACES
Activation	Operations can take place in advance of an emergency, during the emergency, and an indefinite time after the emergency has cleared.	Except for drills, starts as a result of an emergency, active during the emergency, and deactivated shortly after the emergency has cleared.
Operator Registration	Does not have to be registered for Level 0. Suggested to register with local ARES Emergency Coordinator. By submitting the CC FSD98 Registration Form, this requirement will be met.	Must be registered with the local emergency management agency. By submitting the CC RACES Registration Form, this requirement will be met.
Communications	Limited only by standard Amateur Radio rules.	Restricted to/from other RACES stations.
Messages	Limited only by standard Amateur Radio rules. Example: Health and Welfare would be allowed in ARES, but may not be allowed in RACES.	Communications must be specifically authorized by the civil defense organization for the area served. Generally limited to public safety, immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need.
Drills	Limited only by standard Amateur Radio rules.	Cannot exceed a total time of one hour per week. With proper authorization, drills may be conducted twice in a calendar year for a period not to exceed 72 hours.
Served Agencies	Emergency management organizations as well as other non-profit organizations.	Limited to emergency management organizations.
Restricted Operations	May be restricted from operating in some communication emergencies.	May be allowed to operate in a communication emergency when other amateur radio stations are restricted from doing so.

1.3 Our Mission

One of the primary responsibilities of the Amateur Radio Service, as established by Part 97 of the Federal Communications Commission's regulations, is the performance of public service communications for the general public, particularly in times of emergency when normal communications are not available. To that end, the Cherokee County Georgia Amateur Radio Emergency Service members, under the oversight of the American Radio Relay League, will equip themselves and train to provide communications as a direct service to the general public through government and relief agencies of Cherokee County Georgia, the State of Georgia, and Federal Agencies when requested by those agencies.

Cherokee County ARES supports our primary served agency, Cherokee County EMA- Emergency Management Agency. We also support throughout the year various other activities including:

1. Field Day along with our Club-WX4CAR.ORG
2. The Georgia Death Race
3. The Georgia Jewel
4. NW GA District ARES
5. The Annual ARRL Simulated Emergency Test (SET)
6. As needed SKYWARN nets or Activations

1.4 Our Charter

"The Amateur Radio Emergency Service (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization is eligible for membership in the ARES. The only qualification, other than possession of an Amateur Radio license, is a sincere desire to serve. Because ARES is an amateur service, only amateurs are eligible for membership. The possession of emergency-powered equipment is desirable but is not a requirement for membership."

-- ARRL Public Service Communications Manual

1.5 The Amateur's Code

The Radio Amateur is:

CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL…offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation, and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED...radio is an avocation, never interfering with duties owed to family, job, school, or community.

PATRIOTIC...station and skill always ready for service to country and community.

--The original Amateur's Code was written by Paul M. Segal, W9EEA, in 1928.

1.6 Emergencies and Safety

During any activation or exercise, your first responsibility is to ensure your own safety and that of your family. Make sure that your family, home, and other property is safe and secure before responding as an ARES volunteer.

Once you have responded, keep your personal safety first and foremost in your mind. Do not perform any activities that you do not feel comfortable with. Even common activities can become dangerous during some types of emergencies. Just walking down the street during an ice storm could be a recipe for problems or injuries!

As a professional, you should strive to have and use the correct personal protective equipment (PPE). Do not let a macho attitude keep you from wearing a hard hat, safety glasses, safety shoes, climbing belt/harness or gloves, as needed for the task at hand. If the correct safety equipment is not available, seriously consider postponing the task until correct equipment is available.

1.7 Directed Response

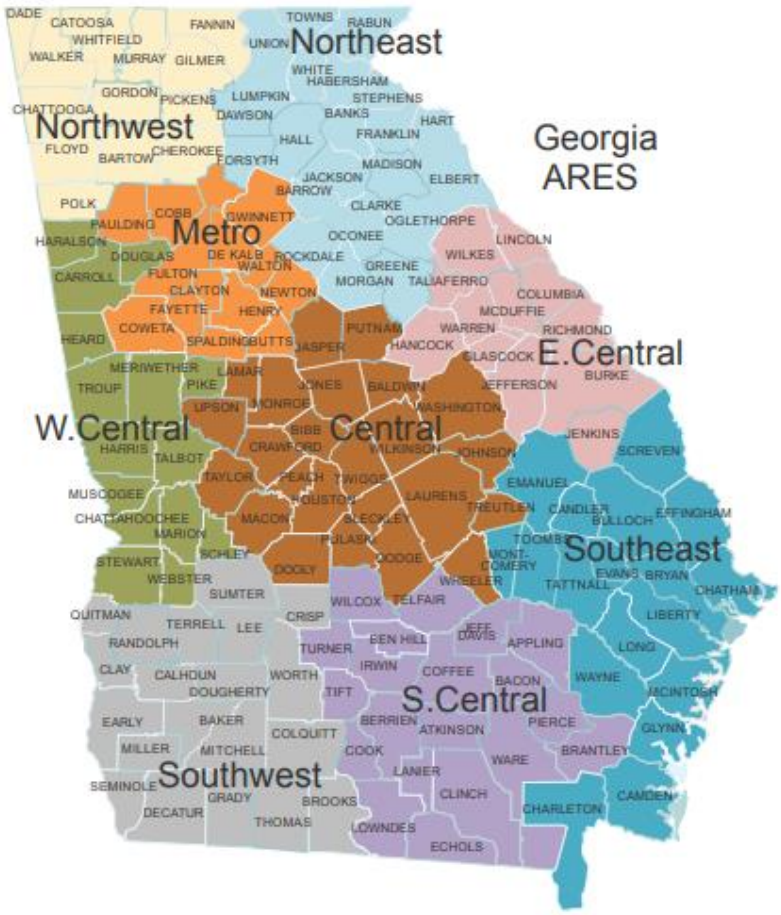
All response efforts should be coordinated through the served agencies. Do not just "show up" on-scene to help. You will be removed from the scene and removed from ARES. Uncontrolled and uncoordinated arrival of resources at an incident causes significant accountability issues, safety issues, and legal issues. Self-dispatched or freelancing resources will cause safety risks to responders, community members, and others who are operating within the incident management structures.

In some cases, predesignated CERT teams will self-deploy within a predetermined area.

All ARES members should monitor the designated repeater, simplex, and if capable HF frequencies and check in to any active nets whenever there is an emergency or severe weather. If a call out is required, this is where it will be coordinated from.

2 ARES Organization

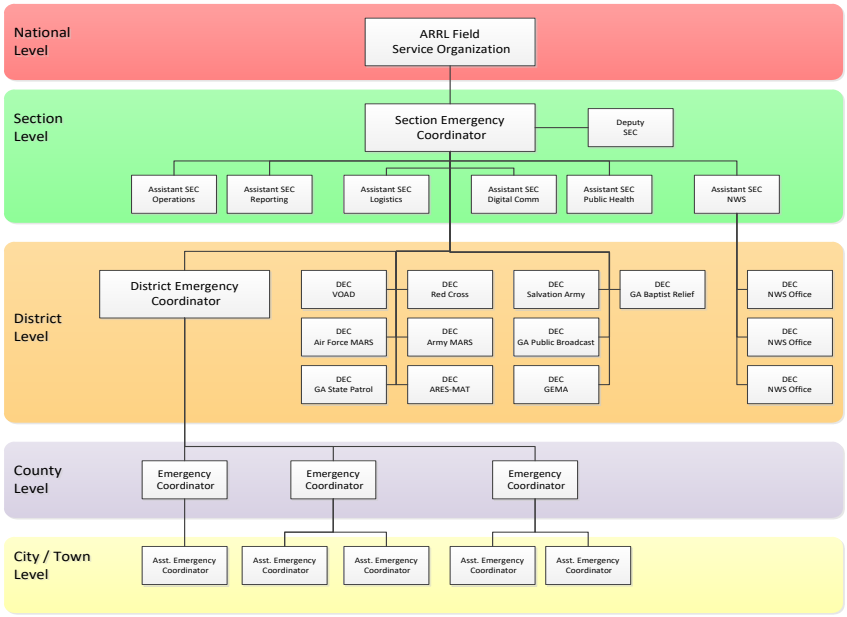
The American Radio Relay League's Amateur Radio Emergency Service is divided into four levels, national, section, district and local. There are 71 sections in the USA. The Georgia section is broken into 8 districts that are illustrated below. Our group is part of the Georgia Section, Northwest District. Each of Georgia's 159 counties has an Emergency Coordinator. In some cases, a single EC will cover 2 or more counties.



Georgia Section
Northwest District

- Bartow
- Catoosa
- Chattooga
- Cherokee
- Dade
- Fannin
- Floyd
- Gilmer
- Gordon
- Murray
- Pickens
- Polk
- Walker
- Whitfield

The local level organization is led by the Emergency Coordinator and covers 1 or more counties. This is the level where most of the real work happens. The EC works with the county and local governments as well as other groups to actually provide communication services. The EC may appoint assistants to oversee specific areas, roles, or other duties.


National Level
ARRL Field Service Organization
Section Level
Section Emergency Coordinator
Deputy SEC
Assistant SEC Operations
Assistant SEC Reporting
Assistant SEC Logistics
Assistant SEC Digital Comm
Assistant SEC Public Health
Assistant SEC NWS
District Level
District Emergency Coordinator
DEC VOAD
DEC Red Cross
DEC Salvation Army
DEC GA Baptist Relief
DEC NWS Office
DEC Air Force MARS
DEC Army MARS
DEC GA Public Broadcast
DEC NWS Office
DEC GA State Patrol
DEC ARES-MAT
DEC GEMA
DEC NWS Office
County Level
Emergency Coordinator
Emergency Coordinator
Emergency Coordinator
City / Town Level
Asst. Emergency Coordinator
Asst. Emergency Coordinator
Asst. Emergency Coordinator
Asst. Emergency Coordinator
Asst. Emergency Coordinator

3 Served Agencies

3.1 National Level

3.1.1 American Red Cross

ARRL and the Red Cross have had cooperative agreements since 1940. The current statement was signed in 2002. Chartered by Congress in 1905, the Red Cross provides relief to victims displaced by disaster, from the onset of disaster conditions to the recovery phase.

3.1.2 Association of Public-Safety Communications Officials- APCO International

The Association of Public-Safety Communications Officials (APCO)—International comprises communications professionals in emergency medical, law enforcement, fire, search-and-rescue and other public safety fields.

3.1.3 Civil Air Patrol (CAP)

Members of ARRL and the Civil Air Patrol (CAP) share common goals of serving the public through efficient and effective use of radio communications. To this end, members of both organizations engage in regular training to prepare for emergency and disaster communications. Members of both organizations provide important communications capability to the Homeland Security programs of the United States.

3.1.4 Department of Homeland Security – Citizen Corps

In June 2003, ARRL became an official affiliate program of Citizen Corps, an initiative within the Department of Homeland Security to enhance public preparedness and safety. ARRL has worked very closely with FEMA since 1984 when an MOU was signed that helped ARRL volunteers coordinate their services with emergency management at all levels of government. FEMA's job was as a "last responder," as opposed to first responders (the local, county and state emergency management agencies). Today, Citizen Corps groups are at the community level and state level to assist first responders.

3.1.5 National Association of Radio and Telecommunications Engineers

Founded in 1982, the National Association of Radio and Telecommunications Engineers (NARTE) offers an accredited certification program to qualified engineers and technicians, many of them Amateur Radio operators. Its other activities include participation as a commercial operator license examination manager. Its primary mission is to promote professional excellence within the telecommunications industry and related areas.

3.1.6 National Communications System

The National Communications System (NCS) is a unique organization. It is a confederation of 23 organizations across the Federal Government tasked with ensuring the availability of a viable national security and emergency preparedness telecommunications infrastructure.

3.1.7 National Weather Service

Amateur Radio is almost synonymous with the SKYWARN program, the "eyes and ears" of the National Weather Service (NWS), providing "ground truth" during severe weather emergencies. Hams comprise the majority of SKYWARN volunteers, who report to local NWS offices, supplementing their sophisticated weather monitoring equipment.

3.1.8 Quarter Century Wireless Association

The Quarter Century Wireless Association (QCWA) and the ARRL recognize each other's efforts to support, protect, promote and advance the Amateur Radio Service.

3.1.9 REACT International

ARRL and REACT (Radio Emergency Associated Communication Teams) share common goals in terms of emergency communication. The primary mission of REACT is "to provide public safety communications to individuals, organizations, and government agencies to save lives, prevent injuries, and give assistance wherever and whenever needed."

3.1.10 Salvation Army

The Salvation Army has provided services to victims of disasters for decades, and it's particularly active in the recovery stage of disasters. Along with many other agencies, the ARRL and the Salvation Army also are member organizations to the National Voluntary Organizations Active in Disaster (NVOAD).

3.1.11 Society of Broadcast Engineers

ARRL is committed to helping develop future careers in RF Engineering and related technological fields. The alliance with the Society of Broadcast Engineers (SBE) will help many hams gain the informational resources necessary to make sound career choices, as well as strengthen the exchange of technological innovation between hams and engineering professionals.

3.1.12 United States Power Squadrons

The United States Power Squadrons (USPS), a national boating and educational organization, is dedicated to making boating safer and more enjoyable. USPS formalized an MOU with ARRL in 2005 linking the two services in their efforts to better serve the public. USPS is a world leader in speaking out for and promoting the needs of all recreational boaters.

3.2 Section Level

3.2.1 Georgia Emergency Management and Homeland Security Agency

The Georgia Emergency Management and Homeland Security Agency, a part of the Office of the Governor, has primary responsibility in the State of Georgia to provide overall direction and coordination of emergency and disaster planning and operations, as stated in the Georgia Emergency Management Act of 1981.

GEMA has responsibility for maintaining the Georgia Emergency Operations Plan (GEOP), which is organized, based on the authority of the state government for emergency management and contains specific Emergency Support Functions (ESFs).

Standard Operating Procedures (SOPs) are the responsibility of the primary state agency or organization for each ESF in coordination with other supporting agencies and organizations.

3.2.2 American Red Cross

All American Red Cross activities in the State of Georgia are coordinated through the Southeastern Region/Georgia Unit Headquarters in Atlanta. The Metropolitan Atlanta Chapter and the Georgia Hurricane Watch Team are also located in the same location.

The American Red Cross has primary responsibility for the GEOP ESF #6, Mass Care and is coordinated with other Georgia state and private agencies through the GEMA SOC. Although not listed in the GEOP, the ARRL provides support to the American Red Cross under ESF #6 through a statement of understanding between the two organizations.

3.2.3 National Weather Service

The majority of SKYWARN activity in the State of Georgia is coordinated through the NWS Peachtree City (NWS-PTC) office in Peachtree City. NWS-PTC has a county warning area (CWA) of 96 of the 159 counties in Georgia, but issues forecasts for most of the state. The remaining counties fall under the jurisdiction of the Jacksonville, Greenville, Columbia, Charleston, or Tallahassee offices.

The amateur station WX4PTC is located at the National Weather Service office in Peachtree City, GA. You will find during severe weather, WX4PTC may link to one of our local Repeaters VHAM13 and/or VHAM18. When this occurs, listen carefully to the information WX4PTC is broadcasting or requesting, while also monitoring our local Cherokee County SKYWARN net. Do Not interrupt a SKYWARN net or provide information that does not meet the criteria that WX4PTC is requesting. WX4PTC is looking for critical ground truth to overlay with additional reports or radar indicated activity, in order to adjust the National Weather Service alerts for the affected area.

3.2.4 Georgia Baptist Disaster Relief Communications

In Georgia, the Southern Baptist Disaster Relief Communications groups have two well-equipped mobile communications trailers. In a disaster, they provide communications support for the feeding units, and other disaster relief operations.

Although no formal memorandum of understanding exists between ARES and Southern Baptist Disaster Relief Communications, they work very closely in many disaster situations. Several members of the section ARES leadership are also actively involved with the Disaster Relieve Communications groups. This can only serve to enhance the amateur radio response to the community in a disaster, as each group can rely upon the strengths of the other.

3.2.5 Military Amateur Radio Service (MARS)

The Georgia Section ARES has District Emergency Coordinators assigned to both MARS groups, Army Mars (AMARS) and Air Force Mars (AFMARS), with the specific responsibility to establish liaisons with MARS in the event of a disaster. Although any necessary traffic will be passed, health and welfare traffic is expected to be the predominant type of message flow on 60meters. If you have 60m capability, you may respond to QST requests for information made by MARS stations. Speak in plain language with no Q-CODES.

3.2.5.1 USB-PHONE

Channel 1: 5330.5 kHz
Channel 2: 5346.5 kHz
Channel 3: 5357.0 kHz
Channel 4: 5371.5 kHz
Channel 5: 5403.5 kHz

3.2.5.2 USB-PSK31 (1500 Hz on Waterfall)

With PSK31 you must operate on the following channel center frequencies:
Channel 1: 5332.0 kHz
Channel 2: 5348.0 kHz
Channel 3: 5358.5 kHz
Channel 4: 5373.0 kHz
Channel 5: 5405.0 kHz

3.2.6 Hurricane Watch Net

The Georgia Section ARES does not have a formal liaison to the Hurricane Watch Net, since its primary mission is to disseminate advisory and gather weather information from affected areas. As such, it is a very narrow focused net. All ARES members should monitor the net whenever it is in operation on 14.325 MHz or 3.950 MHz (as band conditions warrant). When a liaison to the HWN (or National Hurricane Center in Miami, Florida) is required, that liaison will be assigned as needed by the Section Emergency Coordinator (or appropriate District EC as needed).

3.3 Local Level

It is at the local level where most of the real emergency organizing gets accomplished, because this is the level at which most emergencies occur and the level at which ARES leaders make direct contact with the ARES member-volunteers and with officials of the agencies to be served. The local Emergency Coordinator is therefore the key contact in the Amateur Radio Emergency Service. The EC is appointed by the SEC, usually on the recommendation of the DEC. In Georgia, EC's have responsibility for one or more counties in their local area. The EC is in charge of all ARES activities in his or her area, not just one interest group, one agency, one club or one band.

3.3.1 Cherokee County Emergency Management Agency / EMA

The Cherokee County Emergency Management Agency falls within the Marshal's Office, and is tasked with supporting all emergency responses during a severe weather or disaster situation effecting Cherokee County, GA.

Support provided by the Cherokee County Amateur Radio Emergency Service:

- Train its members in the conduct of emergency communications following established guidelines for amateur radio operators.
- Maintain a roster of trained volunteers that may be called upon in the time of emergency, severe weather or disaster.
- Provide trained communicators and equipment to augment communications needs during an emergency, severe weather or disaster situation at the request of the Cherokee County Emergency Management.
- Work with the Cherokee County Emergency Management personnel to identify missions within the disaster planning of Cherokee County, GA that are within the capabilities of Cherokee County ARES.
- Develop Cherokee County Radio Emergency Services operations plan(s) to support missions agreed upon and tasked by the Cherokee County Emergency Management.
- Provide trained amateur radio personnel to staff and operate county owned amateur radio equipment inside the emergency operations center.
- Provide communications at shelter locations across the county as tasked by Cherokee County Emergency Management.

3.3.2 Cherokee County Community Emergency Response Team (CERT)

Local government prepares for everyday emergencies. However, during a disaster, the number and scope of incidents can overwhelm conventional emergency services. The Community Emergency Response Team (CERT) program is all-hazard training. This valuable course is designed to help citizens protect themselves, their family, and their neighbors in an emergency situation.

CERT is a positive and realistic approach to emergency and disaster situations where citizens may initially be on their own and their actions can make a difference. While people will respond to help others in need without the training, one goal of the CERT program is to prepare them to do so effectively and efficiently without placing themselves in unnecessary danger

4 Operator Levels and Training Policy

Our operations must comply with the National Incident Management System (NIMS). We operate under the Incident Command System (ICS) when activated.

The Department of Homeland Security (DHS) now requires all volunteers, including Amateur Radio operators to complete IS 100, IS 200, IS 700 and IS 800 course material. For non-governmental employees and others without access to classroom instruction, these courses are available as on-line independent-study courses that are free of charge.

THOSE AMATEUR OPERATORS WHO MAY BE DEPLOYED TO EMERGENCY OPERATIONS CENTERS (EOCs), COMMAND POSTS, PUBLIC SAFETY ANSWER POINTS (911 CENTERS), SHELTERS, PODS OR OTHER POINTS WHERE INTERFACE WITH EMERGENCY MANAGEMENT OR GOVERNMENT OFFICIALS AT ANY LEVEL IS EXPECTED, ARE REQUIRED TO COMPLETE IS 100, IS 200, IS 700, and IS 800.

This document serves to clarify the policy of Cherokee County ARES®/RACES. No one is compelled to take these courses However, any registered ARES/RACES volunteers who have not completed the required training, but registered, will be listed in our internal records as “Level 1” and will not be deployed to any site during any activation or drill without being directly paired with a “Level 2” member for field training purposes. Any operators who "self-deploy" will be removed from ARES and subject to additional discipline and legal action. ARES/RACES operators who complete the requirements at any time will be updated as "Level 2" in our internal records.

Any amateur radio operator that does not register, may participate on ARES nets, from home station as Level 0.

This is not intended to be an affront to any individuals or groups. It is, however, intended to bring our overall organization into compliance with DHS, State and Local EMA requirements.

The required FEMA training (as well as a lot of other optional training) is available on-line at the following web site: http://training.fema.gov/is/crslist.aspx.

4.1 ARES Communicator – Level 1

Requirements

- ☐ Licensed Amateur Radio Operator
- ☐ Completed Cherokee ARES/RACES Orientation
- ☐ Current ARES FSD-98 and RACES form on file
- ☐ Approval of the Cherokee County ARES Emergency Coordinator (EC)
- ☐ Maintain active membership in good standing with the Cherokee County ARES/RACES organization
  - Attends a minimum of 2 Monday Night Cherokee ARES/SKYWARN Nets per Quarter.
  - Attends a minimum of 2 Tuesday Night NW GA District ARES Nets per Quarter.
  - Attends a minimum of 1 Drill/ARES Exercise per year. (Field-Day, GA Death Race, GA Jewel, GA SET, or real-world Activation)
- ☐ Maintains minimum radio equipment to communicate:
  - Portable handheld radio, dual band (2m, 70cm) preferred
    Programmed with current Cherokee County and NW GA District ARES suggested frequencies
  - Ability to manually program Simplex, or Repeater Frequency into personal radio.
  - Magnetic mount or base station antenna
  - Coax cable with appropriate connectors
  - Elevation or mounting device for antenna
- ☐ Completed Level 1 ARES Standardized Training Plan Task Book- Sign off
- ☐ OPTIONAL- Current SKYWARN Spotter certificate

4.2 ARES/RACES Communicator – Level 2 (Deployable)

Requirements

- ☐ Completion of all ARES Communicator Level 1 requirements
- ☐ Completion of the following FEMA self-study courses:
  - IS-100, Introduction to the Incident Command System
  - IS-200, ICS for Single Resources, and Initial Action Incidents
  - IS-700, National Incident Management System (NIMS), An Introduction
  - IS-800, National Response Framework, An Introduction
- ☐ Completed requirements for and holds current Cherokee County EMA- Amateur Radio ID Badge
- ☐ Completed and maintains current SKYWARN Spotter certificate
- ☐ Maintains additional minimum radio equipment to communicate:
  - Mobile or portable base station with HF capabilities (if licensed)
  - Highly recommended – Digital communications capabilities and training
- ☐ Completed Level 2 ARES Standardized Training Plan Task Book- Sign off
- ☐ 72 Hour Go Kit
  - Supplies for a 72-hour deployment including food, water, medications, power for radio(s) and clothing

4.3 ARES / RACES – Level 3 (EC, AEC, and EMA Staff)

Requirements

- ☐ Completion of all ARES Communicator Level 1 requirements
- ☐ Completion of all ARES/RACES Communicator Level 2 requirements
- ☐ Completed requirements for and holds current Cherokee EMA-Amateur Radio ID Badge w/ Public Safety building door access privileges
- ☐ Completed GEMA G-775 EOC Management and Operations Classroom course
- ☐ Completed Cherokee EMA WebEOC training
- ☐ Completed Level 3 ARES Standardized Training Plan Task Book- Sign off

Communicator Level 2 Members may work on Level 3 training, but Level 3 status will only be granted to a member when filling an open AEC or EMA Staff position and with approval of Emergency Coordinator.

5 Training

5.1 ICS and NIMS Training

All federal, state, local, tribal, private sector and non-governmental personnel with a direct role in emergency management and response must be National Incident Management System (NIMS) and Incident Command System (ICS) trained. This includes all emergency services related disciplines such as EMS, hospitals, public health, fire service, law enforcement, public works, utilities, skilled support personnel, and other emergency management response, support and volunteer personnel.

Cherokee County ARES, like most emergency response organizations, requires that their members have a basic understanding of the ICS and NIMS. Self-paced training is available at no charge from Federal Emergency Management Agency (FEMA) (www.training.fema.gov). The Independent Study Program course certificates never expire. However, if you want to refresh your skill, consider taking an updated course. IS-100.x, Introduction to the Incident Command System*

- IS-200.x, ICS for Single Resources, and Initial Action Incidents*
- IS-700.x, National Incident Management System (NIMS), An Introduction*
- IS-800.x, National Response Framework, An Introduction*

Although not required, the following courses are recommended:

- IS-1, Emergency Manager, An Orientation to the Position*
- IS-22, Are You Ready? An In-Depth Guide to Citizen Preparedness
- IS-26, Guide to Points of Distribution
- IS-102, Deployment Basics for FEMA Response Partners
- IS-120.a, An Introduction to Exercises*
- IS-130, Exercise Evaluation and Improvement Planning*
- IS-139, Exercise Design*
- IS-240.x, Leadership & Influence*
- IS-241.x, Decision Making & Problem Solving*
- IS-244.x, Developing and Managing Volunteers*
- IS-250.x, Emergency Support Function 15 (ESF15), External Affairs*
- IS-271.x, Anticipating Hazardous Weather & Community Risk
- IS-288.x, The Role of Voluntary Agencies in Emergency Management*
- IS-317, Introduction to Community Emergency Response Teams
- IS-394.x, Protecting Your Home or Small Business From Disaster
- IS-775, EOC Management and Operations

* These courses are required as part of the *ARRL EC 016 - Public Service and Emergency Communications Management for Radio Amateurs* course

Please note that these were the current courses at the time this document was published. FEMA regularly updates these courses and signifies this with a letter at the end of the course ID (for example, IS-100.b). The newest revision course should always be taken.

5.2 Amateur Radio Specific Training

5.2.1 Cherokee County ARES Training

The Cherokee County ARES group has created an ARES Orientation training course. All CC-ARES members are required to complete this course either in a live session or through self-study. The content can be found on the Cherokee-ARES Website: cherokee-ares.org/training.html.

All ARES members are expected to establish and complete ARES Training as outlined in the ARRL ARES Standardized Training Task Book.

The ARRL also offers the following emergency communications courses: Online Course Registration (arrl.org),

- ARRL EC001, Introduction to Emergency Communication
- ARRL EC016, Public Service and Emergency Communications Management for Radio Amateurs

5.3 Other Training

In the past, many Amateur Radio operators looked at themselves strictly as communicators. In the current environment, this is a needed skill that must be matched with other skills that the served agency needs. Most ARES members look at their job as anything that *includes* communications.

The Amateur Radio community must have the proper training and certifications to be fully utilized by other organizations. This section contains information about some of the training offered by agencies you may be called to work with.

5.3.1 CERT

The Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

More information can be found on the national CERT website (http://www.citizencorps.gov/cert/) and on the Cherokee County EMA website (http://www.cherokeega-ema.org/cert.cfm).

5.3.2 Red Cross

The Metro Atlanta Red Cross is part of a nationwide network of approximately 730 locally supported chapters dedicated to saving lives and helping people prevent, prepare for and respond to emergencies. The American Red Cross has nearly one million volunteers and 35,000 employees.

The Red Cross works closely with federal, state and local agencies such as the Department of Homeland Security, GEMA and the CDC to accomplish their mission.

Training is available in damage assessment, shelter management, mass care, feeding operations and client casework. If it is likely that you will be stationed as a communicator for a shelter location, the shelter operations courses will help put you on the same page as the Red Cross volunteers staffing it.

More information is available on the Metro Atlanta American Red Cross web site (http://atlantaredcross.org).

5.3.3 National Weather Service

The effects of severe weather are felt every year by many Americans. To obtain critical weather information, NOAA's National Weather Service (NWS), part of the U.S. Department of Commerce, established SKYWARN® with partner organizations. SKYWARN® is a volunteer program with nearly 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service.

Although SKYWARN® spotters provide essential information for all types of weather hazards, the main responsibility of a SKYWARN® spotter is to identify and describe severe local storms. In the average year, 10,000 severe thunderstorms, 5,000 floods and more than 1,000 tornadoes occur across the United States. These events threatened lives and property.

Free classes are offered by the National Weather Service each year between January and March.

More information is available at the NWS web site (http://www.weather.gov/SKYWARN/) and the Georgia SKYWARN site (http://www.georgiaSKYWARN.com/)

5.4 Weekly Training Nets

The current net schedule is posted on our web site (http://www.cherokee-ares.org/) containing assigned Net Control Operators and Contact information.

We are fortunate to have various local, state, and regional weekly nets available to our teams. You should consider participating in these nets, as time allows, to practice your communication skills and test your station capabilities. To help prioritize the nets for the Cherokee ARES teams, we are requesting that we participate, as time allows, on the Cherokee ARES, Cherokee CARS, and NW GA ARES weekly nets. By keeping focus on our County and District we are better able to mutually support one another during an activation or incident.
These 3 nets focus training with the assets and skills that most of our current members support, VHF and UHF communications. The nets test communications using various repeaters as well as the most important SIMPLEX mode that may be needed in the event the repeaters are offline. We have demonstrated, as recently as the week of 14 December 2021, that we can talk throughout our district and surrounding counties without the aid of a repeater. By leveraging key terrain, and operators capable of passing and relaying traffic from county to county, we can successfully communicate critical information across our district.

Monday

Cherokee ARES /SKYWARN

- 20:00 hours Net starts on UHAM41 WA4EOC Repeater (443.075 + PL 107.2) and Alternate Repeater KG4VUB (145.270 - PL 100.0)

Tuesday

NW GA ARES DISTRICT

- 1st Tuesday 19:30 District Simplex Net (Check NW GA ARES District Facebook weekly)
- 19:30 Winlink Net – Send Winlink Check-in form to W4NWG
- 19:30 DRATS Net – use the NW GA ARES Ratflector net:nwgaares.ddnsfree.com:9000
- 20:00 hours Net starts on VHAM13 KC4AQS Repeater 146.805 + PL 100.0 (Additional Instructions will be provided on the net or NW GA ARES District Facebook)
- Exercises varies including:
  - DSTAR using REF030B
  - Winlink (Telnet/Vara/Packet) to W4NWG
  - Winlink P2P- TBD
  - Simplex Testing VHF/UHF/HF- Based on weekly exercise
  - DRATS

Cherokee Area Preparedness Training Net (CAPTN)

- 20:00 EST via VHAM11 the KG4VUB Repeater (145.270mHz - PL 100Hz encode and decode)

Wednesday

Southeastern Linked Repeater Net

- Net meets at 21:00 EST Every Wednesday night via VHAM13 KC4AQS Repeater 146.805 + PL 100.0 (Additional frequencies are published on the Southeastern Linked Repeater Net website)
- During severe weather/SKYWARN activations, another outstanding frequency to monitor and only transmit requested information established by Net Control.

Thursday

Cherokee Amateur Radio Society Club Net (WX4CAR)

- 20:00 EST via VHAM11 the KG4VUB Repeater (145.270mHz - PL 100Hz encode and decode)

Sunday

GA ARES Statewide Nets

- HF Voice NET 3975kHz LSB (17:00 EST Winter / 18:00 EST Summer)
  - Requested First Sunday of Month to use backup power source

- Winlink - Send Winlink Check-in form to KX4MAT any mode your capable of, prior 16:00 to ensure you're in the roster

- D-RATS Check in and send ICS-213 if capable.
  - Monitor gaares.ratflector.com:9000 and watch for who is calling the NCS and respond accordingly
  - DRATS net is only for Odd Months: (Jan, Mar, May, Jul, Sep, Nov)

- FLDIGI:
  - FLDIGI Traffic Net 3.583 USB Center on 1500 for sending Traffic 16:00 EST Winter/17:00 EST Summer
  - FLDIGI Check-In Only 3.583 USB Center on 1000 to check in. Only for Even Months: (Feb, Apr, Jun, Aug, Oct, Dec) at 16:00 EST Winter/17:00 EST Summer

Florida Winlink Net

- (Days/Times/Modes Vary) Check Website: W4AKH Winlink Net
- Great opportunity to test Vara HF P2P Capability as well as VarAC

5.5 Individual Training Record

Name:		Call Sign:	
Address:			
Address 2:			
City, State, Zip:			
License Class:		Expiration date:	

Amateur Radio Emergency Training

Course	Date Completed	Course	Date Completed
CC-ARES Basic EMCOM Training		ARRL EC 001 Introduction to Emergency Communication	
Cherokee ARES/RACES Orientation		ARRL EC 016 Emergency Communications Management	
ARES TASK Book- Level 1			
ARES Task Book- Level 2			
ARES Task Book- Level 3			

FEMA Training

Course	Date Completed	Course	Date Completed
IS-100, Introduction to the Incident Command System			
IS-200, ICS for Single Resources and Initial Action Incidents			
IS-700, National Incident Management System (NIMS), An Introduction			
IS-800, National Response Framework, An Introduction			

National Weather Service Training

Course	Date Completed	Course	Date Completed
SKYWARN Spotter Class - Basic			
SKYWARN Spotter Class - Advanced			

6 Activation / Alert Levels

6.1 Activation of CC-ARES

Typical activation will be through the emergency net on the designated repeaters. Email broadcasts will also be sent out to the CC-ARES team distribution.

The email distribution is managed through the Cherokee ARES Groups.IO

Members must setup a Groups.IO Account and will only be given access to the site after submitting an FSD-98 ARES Registration Form and approved by the Cherokee County EC or AEC.

CC-ARES activations for the EOC are initiated by the EOC Staff by notifying the EC or designated AEC(s). An email is sent via Cherokee ARES Groups.IO and repeater net activations follow with a Net Control Operator.

CC-ARES members should monitor the repeater frequencies for any formal or informal nets during potential severe weather events or Level 1 or 2 activations listed below.

6.1.1 Activation Procedures

1. Establish an ICS-214 Activity Log. Record your activation date/time, any major significant event that occurs, and when mission is over, record the deactivation date/time.
2. If instructed by your chain of command to deploy, report your departure to the mobilization site, arrival, and on demobilization, record the time you leave the area and report to your home station. This is important for accountability. Report these major milestones to your leadership via Voice, Text, Email, any method you can for near real-time tracking.
3. Follow the deployment and demobilization instructions you are provided.
4. Upon completing the mission, develop your internal After-Action Report feedback. Identifying areas to Improve as well as Sustain. We will incorporate this is our formal/overall After-Action Report. We must take advantage of every opportunity to identify areas to improve before the next activation. Submit that report to your Emergency Coordinator and team leader if assigned.

6.2 Cherokee County EM Alert Levels

These are the activation levels defined by the Cherokee County Office of Homeland Security – Emergency Management. There are no “standard” definitions for EOC activations, so the recommendation would be to use the terms, no activation, partial activation, and full activation instead of the Level 1, 2 or 3 designations.

6.2.1 Normal

This level is the normal state where there is no emergency, and no activation is expected.

6.2.2 Level Three (3) – No Activation

Level 3 is typically a "monitoring" phase. Notification will be made to the Emergency Support Functions (ESF) who would need to take action as part of their everyday responsibilities. The EOC will be staffed only with normal OHS-EM staff during assigned working hours during this level.

6.2.3 Level Two (2) – Partial Activation

This is partial agency activation. All primary Emergency Support Function (ESF) leaders will be notified. The EOC will be staffed by OHS-EM Management personnel and necessary Emergency Support Function personnel.

6.2.4 Level One (1) – Full Activation

In a full-scale activation, all ESF agencies are notified. The EOC will be staffed by OHS-EM Management personnel and all Emergency Support Functions that are required to actively manage the emergency, as determined by the Director.

7 Emergency Net Guide

7.1 Types of Emergency Nets

There are four types of formal nets which might be set up during an ARES or RACES event. These are the TACTICAL NET, RESOURCE or LOGISTICS NET, TRAFFIC NET and the COMMAND NET. What type of net or nets get activated will be determined by the size and complexity of the event.

There may also be one or more informal INFORMATION NETs operating on different frequencies.

7.1.1 Tactical Net

The tactical net is the principal net during an incident. This type of net is typically used by a single agency to manage amateur radio operations within their operational area. There may be several tactical nets for a single operation depending on the volume of traffic. Types of traffic which might exist on this net could be anything from traffic handling to coordination of ARES/RACES efforts, to recruiting of additional resources. When an event grows beyond the boundaries of a single agency to the point where mutual aid is necessary, it becomes necessary to create the next type of net, the resource net.

7.1.2 Resource or Logistics Net

A resource net is principally used to recruit resources (both operators and equipment) in support of mutual aid operations. The resource net evolves as a natural outgrowth of the size of the incident. This net may also be used as a check-in point before an assigned responder leaves for his/her assignment.

7.1.3 Traffic Net

The traffic net exists when the amount of traffic that needs to be passed goes beyond what can be handled on the tactical net. The net will typically have a net controller and pass only formal traffic. This net may also interface with other nets (primarily on the HF bands) allowing the use of the National Traffic System (NTS) or even international traffic.

The NTS typically uses the ARRL Radiogram format for traffic.

7.1.4 Command Net

As the size of an operation increases and more ARES/RACES jurisdictions become involved in the incident, a command net may become necessary.

This net allows the ARES/RACES leadership to communicate with each other to resolve amateur radio operations-related problems. This is also the net which would be used to allow cities or counties to talk to each other and to the state agencies. It is conceivable that this net could become cluttered with a high volume of traffic; it may be necessary to create further tactical nets to allow this traffic to flow efficiently.

As an added note, when other agencies such as Red Cross establish their own nets they are considered tactical nets. Each such tactical resource should have someone monitoring the main Command Net so that they can respond to agency-to-agency requests.

7.2 Being Part of an ARES/RACES Net

Taking part in an ARES/RACES net and learning how to handle traffic are perhaps the major qualifications required of an ARES/RACES team member. Being a successful participant of an ARES/RACES net requires exercising some discipline, and observing a few basic rules of the road:

- Report to the Net Control Station (NCS) promptly as soon as you arrive at your station.
- Ask the NCS for permission before you use the frequency.
- Only use the frequency for traffic, not for chit-chat.
- Answer promptly when called by the NCS.
- Use tactical call signs whenever possible.
- Follow the net protocol established by the NCS.

7.2.1 Basic Traffic Handling

Getting on and off the net is important, but traffic handling techniques are important also. The first step in the process is getting all the information needed for the message:

- Get the name, exact title, address, telephone number and any other needed information about the recipient from the sender. This is extremely important to guarantee the accurate prompt delivery of the message.
- Get an exact title of the sender. If a response is required, the exact name and title of the sender will become very important.
- Make the message as short and concise as possible when originating your own message traffic. If handed a message originated by someone else, do not modify it. Send the message exactly as it is written. It is not as important that you understand the message content, as it is important that the recipient receives an unaltered message.
- Number, log, and time stamp the messages as you send them. This will allow you to reference the messages more easily later.

It is strongly recommended that the CC-ARES standard forms (contained in Appendix J) be used whenever possible. Blank copies of these forms are available on the CC-ARES web site (http://www.cherokee-ares.org/). These forms should be printed in advance and carried as part of your go kit.

For message handling the following forms will be helpful:

- Standard Cherokee County ARES Communications Plan, ICS Form 205-AR
  This form is used to document all of the frequencies in use during an incident and their assigned function. CC-ARES has pre-assigned our standard frequencies and usage.
- Standard Cherokee County ARES General Message, ICS Form 213-AR
  This form is used to record formal general message traffic. Copies should be sent to your EC for consolidation and safeguarding for all real-world incidents/activations.
- Standard Cherokee County ARES Communications Log, ICS Form 309-AR
  This form is used to document all formal traffic in and out of a station. Copies should be sent to your EC for consolidation and safeguarding for all real-world incidents/activations.

7.2.2 Checking into a Directed Net Procedures

When checking into a Directed/Formal Net, the below procedures shall be followed. These procedures ensure that we minimize doubling/talking over one another, ensures Net Control always has accountability of all resources available on the net, and ensures we are most efficient in passing traffic:

1. After you are requested by Net Control to check in, use the following procedure:

    a. **THIS IS**… [unkey mike and listen for a second, if no one is doubling with you then continue to transmit slowly] Full **Callsign**, then **Full Callsign, Callsign Phonetically**, **Name,** and **Location**, **OVER.**

    (*Remember NCS is writing this down, so again, speak clearly and slowly, allow NCS to fully capture the data.)*

    b. Anytime you check-into a net, you must notify Net Control if you shall leave the net or station for any period of time during the net. This is important for Net Control to know who is available to relay and pass-traffic.

    c. When providing your callsign or spelling a word, you must use standard ITU Phonetics. Do not use any of the non-standard Phonetics you hear or may have used contesting. See Section 13 of the Cherokee County, GA Amateur Radio Emergency Service Operations Binder for details.

    d. When checked into a Directed Net or submitting ICS reports, do not utilize Q Signals, 10 Codes, etc. speak normally in clear language. For Example, do not use *QSL* to Acknowledge a message, instead use the word, **'Acknowledge-Over'**. This is important as we will be working with many different Served Agencies and the communications must be fully understood by all parties. (Including National Weather Service, MARS, American Red Cross, Georgia Emergency Management Agency, Local County and City agencies, etc.)

7.2.3 Common Prowords

Below is a list of Common Prowords we shall utilize. Emergency Communications requires clearly spoken language to avoid any confusion or miss-interpretation of meaning:

i. **CORRECT / WRONG**. The proword **CORRECT** means "what you transmitted is correct". The opposite is **WRONG**.

ii. **NEGATIVE / AFFIRMATIVE**. The proword **NEGATIVE** means "No". The Opposite "**AFFIRMATIVE**" meaning "Yes".

iii. **SAY AGAIN**. The proword **SAY AGAIN** is used to request a repetition of something that was transmitted. The Proword **I SAY AGAIN** means I am about to restate something I have already transmitted.

iv. **WAIT and WAITOUT**. The proword **WAIT** is used when a pause is required and will last less than five seconds. Wait should not be over-used; you may simply pause a second or two without saying it. **WAIT OUT** means I must pause for longer than five seconds before continuing/responding, in the meantime other stations can transmit as normal.

v. **WILCO**. The proword **WILCO** is a contraction of the phrase "will comply". It is used in response to a request or tasking and means that you understand the tasking and agree to accomplish the task. Because it implies you understand the request, it is never used with the proword **ROGER** as that would be redundant.

vi. **OVER.** The proword **OVER** means, I have finished my transmission, go ahead and transmit.

vii. **OUT.** The proword **OUT** means, I have concluded my transmission, no reply is expected.

viii. **ROGER**. The proword **ROGER** means, "I have received the information by you" without indicating approval or disapproval, agreement or disagreement. Do not confuse **ROGER** for **WILCO**.

ix. **THIS IS**. The proword **THIS IS** means, "The current transmission is from the station whose call sign follows." This proword can be omitted after communications are established.

x. **THIS IS A DIRECTED NET**. This proword **THIS IS A DIRECTED NET**, spoken by NET Control, means that until further notice the NET is directed. This means that all stations need permission of NET CONTROL to call other stations. The Opposite is **FREE NET**. In a FREE NET, any station may call any other station without NCS Permission.

7.2.4 Auxiliary Communications Field Operations Guide (AUXFOG)

The AUXFOG is a collection of technical reference and training information intended to increase efficiency in establishing communications during incidents and provide a pre-planning tool for communications training and exercises.

The contents of this guide are designed to support the goals of local, county, region, or state government officials. It should not be used in any way to circumvent or override those established goals. Direction for the use of auxiliary communications, under NIMS/ICS, will come from either a Communications Leader (COML) or a member of the emergency management or public safety agency being supported.

The AUXFOG is also available as a mobile app on Apple® iOS™ and Google® Android™ devices. The eAUXFOG app gives users easy access to AUXFOG information, offering a content index with shortcuts to reference sections, tables, figures, or images. Navigation links allow users to jump directly to regional quick references as well as bookmark favourites to develop personalized access to critical information for their region. The eAUXFOG can be downloaded and then taken to the field as an offline reference, to be used without the need of a cellular or data connection.

AUXFOG URL: https://www.cisa.gov/publication/fog-documents

7.3 CC-ARES Emergency Repeater Net Script

This is a suggested script that can be followed for a formal emergency net. Since each incident will be different, the script may need to be modified to meet the needs of the served agency.

Please use the Standard Cherokee County ARES Check in list, ICS Form 211-AR to record the station check-ins

QST, QST, QST – This is the Cherokee County Amateur Radio Emergency Service Net. This channel is designated as UHAM41 and will be utilized for the <*type of net, tactical, resource, traffic, command*> net.

This is <*call-sign*>, my name is <*name*> and I am your Net Control Operator, with a tactical call of NET.

This is a directed net. All contacts and traffic must go through net control. This net has been started to <*Describe the reason for the net and current incident status*>

All emergency traffic will be handled with top priority during this net. We break now for any emergency traffic, emergency traffic only. Please call NET.
<*Break*>

Are there any stations holding traffic or announcements for the net? Please call NET.
<*Break*>

<*Now let stations with traffic or announcements pass their traffic*>

We will now accept station check-ins in order by prefix. Please indicate your call sign, name, location and if you are using commercial power. We also need to know
<*Other needed information such as weather, availability of power or damage assessment*>.

Portable or Mobile Stations please call now
<*Record call-sign, name and location of each station checking in*>

ALPHA Call-signs please call now
<*Record call-sign, name and location of each station checking in*>

KILO Call-signs please call now
<*Record call-sign, name and location of each station checking in*>

NOVEMBER Call-signs please call now
<*Record call-sign, name and location of each station checking in*>

WHISKEY Call-signs please call now
<*Record call-sign, name and location of each station checking in*>

We request that all stations notify NET if you must change your status or secure.

<Briefly go back through the list and solicit incident specific traffic>

<Repeat the reason for the net and current incident status>

<At this point you may want to assign tactical call signs to key stations.>
<The net will now begin passing traffic as needed.>

Routinely ask if there are any other stations that want to check in to the net as follows:
This is the Cherokee County Amateur Radio Emergency Service Net. This channel is designated as UHAM41 and will be utilized for the *<type of net, tactical, resource, command>* net.
All emergency traffic will be handled with top priority during this net. We break now for any emergency traffic, emergency traffic ONLY. Please call NET.
<Break>

Are there any stations holding traffic or announcements for the net? Please call NET.
<Break>

Are there any stations wishing to check in to the net? Please call now.
<Break>
<Record call-sign, name and location of each station checking in>

<Continue handling traffic and net check-ins until the net can be secured. The net should only be secured after guidance from the Emergency Coordinator, assigned Assistant Emergency Coordinator, served agency representative or other authority.>

We will now secure the Cherokee County ARES *<net name>* on UHAM41. We would like to thank all of the stations that participated in this net.

<Include any instructions for stations such as checking in to a different net that will continue.>

All stations are released from this net. We will now return this frequency to normal Amateur Radio usage.

This is *<your call sign>*, Clear.

8 Frequency Guide

8.1 Amateur Frequencies

The Southeastern Repeater Association is the official coordinating agency for amateur radio in Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. The frequencies listed in this section are based on their recommendations.

8.1.1 Cherokee County ARES Standard Frequencies

The NIMS Incident Command System (ICS) prescribes a standard format (ICS Form 205 and 217) to record active frequencies that will be used for an incident. There are copies of these forms in Appendix J.

Form 217A Communications Resource Availability Worksheet is designed to serve as a resource listing of all available channels/frequencies that may be assigned to an incident or event. The ICS Form 205 is the Communications Plan that is used to assign channels/frequencies to a specific incident or event. Form 217A is used for reference when preparing an ICS 205 for a specific incident or event. The ICS Form 205 normally becomes part of an Incident Action Plan disseminated to incident/event personnel.

The ICS-217 attachment is to be used by all Cherokee ARES members. It is recommended that all CC-ARES members program these settings into their radios. If the radio is not dual band capable, program the channels that the radio can utilize, leaving the others empty to preserve the numbering scheme.

8.2 Public Safety Frequencies

Public safety frequencies, channels, or talkgroups listed in this document are purely for reference purposes only. FCC regulations specify requirements for authorized use of public safety frequencies under Part 90. These frequencies are not authorized for use by Amateur Radio Service licensees which is governed by Part 97 of FCC rules. It is possible that a public safety agency representative may authorize the use of public safety radio system resources, but this would only be during an incident or event where amateur radio operators are directly supporting that agency.

Public safety agencies in Cherokee County utilize the Cobb County regional P25 trunked radio system which uses frequencies in the 700 and 800 MHz spectrum. This is a multi-county regional public safety radio system managed by Cobb County. Law enforcement, Fire, and EMS agencies in Cherokee County utilize encryption on the majority of their primary talkgroups, therefore it is not possible to monitor public safety operations in Cherokee County with consumer grade scanners.

8.2.1 Lake Arrowhead Preparedness Project (CERT)

Name	Frequency	Input	CTCSS	Mode	Description
CERT	451.0375	456.0375	67.0	FM-N	Repeater - WQQI363
CERT1D	451.0375	451.0375		FM-N	Simplex
CERT2D	451.6250	451.6250		FM-N	Simplex
CERT3D	454.4750	454.4750		FM-N	Simplex

8.3 National Interoperability Channels

There are a number of channelsaside to be used for interoperability between Federal, State, Tribal and Local agencies.

Nationwide interoperability channels are allocated in the VHF, UHF, 700, and 800 MHz frequency bands.

The interoperability channels and policies for their use are listed in the latest version of the National Interoperability Field Operations Guide (NIFOG) that is available online at: https://www.cisa.gov/publication/fog-documents

A best practice is to download a copy of the “rotated for viewing” PDF version to your smartphone or laptop for easy access. The eNIFOG is also available as a free app for both iOS and Android devices.

8.4 FRS / GMRS / MURS Frequencies

The use of FRS and GMRS frequencies is governed by Part 95 of FCC rules, Personal Radio Services.

Note: These frequencies are listed to allow monitoring and facilitate open communications. No transmitting or cross-band repeating on FRS/GMRS frequencies, except where permitted by FCC regulations. No license is required for FRS usage, but GMRS usage does require a separate license.

8.4.1 FRS (Family Radio Service)

There are 14 UHF frequencies for simplex operation. CTCS may be used. Two kinds of use operation allowed.

1) Unlicensed operation on any channel using FRS type-certified radios. These are hand-held, ½ watt max, 2.5 KHz deviation allowed, with permanently attached rubber antenna.

2) Licensed operation on channels 1-7 by any GMRS license holder, 5 watts max, 5 KHz deviation allowed, any antenna, using any equipment type certified for GMRS. GMRS users may talk with unlicensed FRS users. GMRS users must transmit their GMRS call signs when using non-FRS type-certified equipment.

Frequency	Input	CTCSS	Description
462.5625			FRS Channel 1 (GMRS allowed, 5 watt maximum power)
462.5875			FRS Channel 2 (GMRS allowed, 5 watt maximum power)
462.6125			FRS Channel 3 (GMRS allowed, 5 watt maximum power)
462.6375			FRS Channel 4 (GMRS allowed, 5 watt maximum power)
462.6625			FRS Channel 5 (GMRS allowed, 5 watt maximum power)
462.6875			FRS Channel 6 (GMRS allowed, 5 watt maximum power)
462.7125			FRS Channel 7 (GMRS allowed, 5 watt maximum power)
467.5625			FRS Channel 8 (GMRS not allowed)
467.5875			FRS Channel 9 (GMRS not allowed)
467.6125			FRS Channel 10 (GMRS not allowed)
467.6375			FRS Channel 11 (GMRS not allowed)
467.6625			FRS Channel 12 (GMRS not allowed)
467.6875			FRS Channel 13 (GMRS not allowed)
467.7125			FRS Channel 14 (GMRS not allowed)

8.4.2 GMRS (General Mobile Radio Service)

There are 16 UHF frequencies, eight for simplex and repeater outputs, and eight for repeater inputs. Inputs and outputs are usually paired 5 MHz apart, but any pairing of an input and output frequency is legal. CTCS (Control Tone Coded Squelch) is usual on repeaters. An FCC license is required and may be obtained by any individual for personal communications. Equipment must be type-certified for use in the 450-470 MHz band (part 90), 50 watts maximum power with any antenna. Note that most Ham equipment is not part 90 certified, they are part 15 certified.

Frequency	Input	CTCSS	Description
462.5550	467.5550		GMRS Channel 1 (Repeater Output or Simplex)
462.5750	467.5750		GMRS Channel 2 (Repeater Output or Simplex)
462.6000	467.6000		GMRS Channel 3 (Repeater Output or Simplex)
462.6250	467.6250		GMRS Channel 4 (Repeater Output or Simplex)
462.6500	467.6500		GMRS Channel 5 (Repeater Output or Simplex)
462.6750	467.6750		GMRS Channel 6 (Repeater Output or Simplex)
462.7000	467.7000		GMRS Channel 7 (Repeater Output or Simplex)
462.7250	467.7250		GMRS Channel 8 (Repeater Output or Simplex)
467.5550			GMRS Channel 9 (Repeater Input) (Typically paired with GMRS 1)
467.5750			GMRS Channel 10 (Repeater Input) (Typically paired with GMRS 2)
467.6000			GMRS Channel 11 (Repeater Input) (Typically paired with GMRS 3)
467.6250			GMRS Channel 12 (Repeater Input) (Typically paired with GMRS 4)
467.6500			GMRS Channel 13 (Repeater Input) (Typically paired with GMRS 5)
467.6750			GMRS Channel 14 (Repeater Input) (Typically paired with GMRS 6)
467.7000			GMRS Channel 15 (Repeater Input) (Typically paired with GMRS 7)
467.7250			GMRS Channel 16 (Repeater Input) (Typically paired with GMRS 8)
462.7250	467.72500	107.2	K9APD Cherokee County GMRS Repeater
			Cherokee SAR
			NW GA GMRS

8.4.3 MURS (Multi-Use Radio Service)

The FCC formally defines MURS as "a private, two-way, short-distance voice or data communications service for personal or business activities of the general public."

- There is a 2 watt transmitter power output limit in this service.
- MURS stations may transmit voice or data signals as permitted in 47 CFR 95.631(j).
- A MURS station may transmit any emission type listed in 47 CFR 95.631(j).
- MURS frequencies may be used for remote control and telemetering functions. MURS transmitters may not be operated in the continuous carrier transmit mode.
- MURS users shall take reasonable precautions to avoid causing harmful interference. This includes monitoring the transmitting frequency for communications in progress and such other measures as may be necessary to minimize the potential for causing interference.
- MURS stations are prohibited from operating as a repeater station or as a signal booster. This prohibition includes store-and-forward packet operation.
- MURS stations are prohibited from interconnection with the public switched network. Interconnection Defined. Connection through automatic or manual means of multi-use radio stations with the facilities of the public switched telephone network to permit the transmission of messages or signals between points in the wire line or radio network of a public telephone company and persons served by multi-use radio stations. Wire line or radio circuits or links furnished by common carriers, which are used by licensees or other authorized persons for transmitter control (including dial-up transmitter control circuits) or as an integral part of an authorized, private, internal system of communication or as an integral part of dispatch point circuits in a multi-use radio station are not considered to be interconnection for purposes of this subpart.
- The highest point of any MURS antenna must not be more than 18.3 meters (60 feet) above the ground or 6.10 meters (20 feet) above the highest point of the structure on which it is mounted.

Frequency	Input	CTCSS	Description
151.8200	Simplex		11.25 kHz Authorized Bandwidth
151.8800	Simplex		11.25 kHz Authorized Bandwidth
151.9400	Simplex		11.25 kHz Authorized Bandwidth
154.5700	Simplex		20.00 kHz Authorized Bandwidth (old “blue dot”)
154.6000	Simplex		20.00 kHz Authorized Bandwidth (old “green dot”)

8.5 Business Band

8.5.1 VHF Business Band

Frequency	Input	CTCSS	Description
151.5050			Itinerant
151.5125			Itinerant
151.6250			Itinerant – Red Dot
151.6550			
151.6850			
151.7000			Itinerant
151.7150			
151.7450			
151.7600			Itinerant
151.8050			
151.8200			MURS – 2 Watts, 20 KHz Bandwidth
151.8350			
151.8650			
151.8800			MURS – 2 Watts, 20 KHz Bandwidth
151.8950			
151.9250			
151.9400			MURS – 2 Watts, 20 KHz Bandwidth
151.9550			Purple Dot
152.7000			
154.4900			
154.5150			
154.5400			
154.5700			Blue Dot - MURS – 2 Watts, 20 KHz Bandwidth
154.6000			Green Dot - MURS – 2 Watts, 20 KHz Bandwidth
154.6550			
158.4000			Itinerant
158.4075			Itinerant

9 Weather Reporting – SKYWARN

9.1 SKYWARN Overview

The National Weather Service (NWS), in cooperation with other organizations, has established the SKYWARN local severe weather spotting network. The program is an effort to save lives and property during severe weather emergencies.

Although SKYWARN® spotters provide essential information for all types of weather hazards, the main responsibility of a SKYWARN® spotter is to identify and describe severe local storms. In the average year, 10,000 severe thunderstorms, 5,000 floods and more than 1,000 tornadoes occur across the United States. These events threatened lives and property.

Since the program started in the 1970s, the information provided by SKYWARN® spotters, coupled with Doppler radar technology, improved satellite and other data, and has enabled NWS to issue more timely and accurate warnings for tornadoes, severe thunderstorms and flash floods.

SKYWARN® storm spotters are part of the ranks of citizens who form the Nation's first line of defense against severe weather. There can be no finer reward than to know that their efforts have given communities the precious gift of time--seconds and minutes that can help save lives.

9.2 Weather Reporting Procedures

To report severe weather, call your NWS office via phone, NWSChat or via amateur radio and follow the format below when relaying a report.

- Who is reporting? Is it a relayed report? (Name, spotter network, trained spotter?)
- What type of event occurred? Give an event description (be as specific and detailed as possible)
- When did the event happen? (observed time or old report) State the start and end time of the event (be sure to differentiate between event time and report time)
- Where are you located or where did it occur? Give your exact location and location relative to the event. (Direction/distance from a city, road intersection, etc.).
- If event is still occurring, provide frequent updates (continuous updates for a tornado).

9.2.1 "TELE" System of Reporting

- T = Time of Observation (local time)
- E = Effect (Hail, Winds, Wall Cloud, Etc.)
- L = Location (Check your map before reporting! KNOW WHERE YOU ARE!)
- E = Estimated or Measured

A sample report would be:

At 4:35 pm we had ¼ inch size hail, winds estimated at 40 miles per hour, with moderate cloud-to-ground lightning. I am 2 miles southeast of downtown Canton, and observations are estimated.

9.2.2 Your Location

To have the most value, the forecasters at the National Weather Service need to know the location that the report is from. In most cases the county, street reference and city are sufficient. For example: Cherokee County, Univeter Road and Chattin Drive in Canton or Cherokee County, Highway 92, ¾ mile west of I-575 in Woodstock.

Having the GPS coordinates can also be useful but can be difficult or cumbersome to share verbally.

9.2.3 Estimated or Measured

When reporting a value such as temperature, wind speed or rainfall you should specify if this is a measured or estimated value. Measured values should always come from a measuring device such as a thermometer for temperature or an anemometer for wind speed.

In many cases an estimate is the best information you can provide, so please do so, just identify the value as an estimate.

9.2.4 NWSChat

- AEC's and SKYWARN NCS Leads shall register for NWSChat - NOAA's National Weather Service
- NWSChat is an Instant Messaging program utilized by NWS operational personnel to share critical warning decision expertise and other types of significant weather information essential to the NWS's mission of saving lives and property.
- This information is exchanged in real-time with the media and emergency response community, who in turn play a key role in communicating the NWS's hazardous weather messages to the public.
- NWS partners can use NWSChat as an efficient means of seeking clarifications and enhancements to the communication stream originating from the NWS during a fast-paced significant weather or hydrologic event.

9.2.5 Weather Monitoring Tools

The following links should be added to your browser, as they are to long to print and type:

- Georgia ARES Situational Awareness Map This web map is designed as a tool to help Amateur Radio operators in the State of Georgia visualize emergency communications and emergency response infrastructure across the State. All information in this map is drawn from open or public domain sources.

- N3FJP WX Warning Program. This program, while outdated and no longer supports WXSpts, is a valuable tool. You may add filters for our State, Counties, and get alerted near-real-time when Severe Watches or Warnings are issued. (Typically leave this on in the background while running SKYWARN net as another source of information).

- NWS-Peachtree City Weather Briefings for Severe Weather

- Watches, Warnings or Advisories for Cherokee (GA057 Georgia)

9.3 Weather Net Procedures

As severe weather reports come into the net, the Net Liaison will relay those reports to the NWS by Linked Repeater System, APRS, Packet, or by phone, as deemed necessary. This will free the NCS from having to leave the net to relay this information on to the NWS.

Net control may be established at a home station or a mobile station, until the weather situation threatens life and limb, or the continued operation of that station is jeopardized. Net control should then be moved to, or at least backed up by, a station located at Cherokee County EOC, where radar pictures, emergency power, and other resources are available.

Mobile spotting units can elect to go to areas lacking base station reports, or where high visibility vantage points can be established (high elevation, or flat areas). Mobile units with experienced spotters can also go to check damage reports, etc. Often the damage can be surveyed and isolated to straight-line or rotational type winds, and trees that have been toppled can be assessed as healthy or diseased. The NWS is interested in this type of information.

9.3.1 Severe Weather Activation Matrix

National Weather Service	ARES Response
Watch	Activate Cherokee SKYWARN, only if requested by EMA or EC/AEC If requested by EMA, send Team to EOC
Winter Storm Warning	Activate SKYWARN if requested by EMA or EC/AEC, Monitor WebEOC If requested by EMA, send Team to EOC
Tornado Warning	Activate Cherokee SKYWARN, Monitor WebEOC If requested by EMA, send Team to EOC
Tropical Storm Warning	Activate Cherokee SKYWARN, Monitor WebEOC If requested by EMA, send Team to EOC

9.4 Weather Terms and Definitions

9.4.1 Winter Weather

The following definitions are applicable for watches, advisories and warnings issued by the National Weather Service Atlanta office (Peachtree City) and may not have the same criteria used by other NWS offices.

9.4.1.1 Watches

Issued 12 – 48 hours in advance of an event with a 50% or greater likelihood of occurring.

Wind Chill Watch - Issued 12-48 hours in advance of an event for a 50% or greater chance of wind chill values of -10°F or less.

Winter Storm Watch - Issued 12-48 hours in advance of an event for a 50% or greater chance of conditions favorable for a significant winter storm (including heavy sleet, heavy snow, or ice storm). Winter storm conditions include 2 or more inches of snow, 1/2 inch or more of sleet, or 1/4 inch or more of freezing rain.

Blizzard Watch - Issued 12-48 hours before an event for a 50% or greater chance of blizzard conditions. Blizzard conditions include sustained or frequent wind gusts of 35mph or greater and considerable falling and/or blowing snow reducing visibility to less than 1/4 mile for 3 hours or more.

9.4.1.2 Advisory

Issued up to 36 hours in advance of an event with an 80% or greater likelihood of occurring. The difference between a warning and advisory is the severity of the event; warnings have a greater severity than advisories.

Winter Weather Advisory - Issued up to 36 hours before an event for an 80% or greater chance of a winter precipitation event (snow, freezing rain/drizzle, sleet or blowing snow) which causes inconveniences but does not meet warning criteria.

Freezing Rain Advisory - Issued up to 36 hours before an event for an 80% or greater chance of a freezing rain event which causes inconveniences but does not meet warning criteria.

Wind Chill Advisory - Issued up to 36 hours before an event for an 80% or greater chance of wind chill values less than or equal to 5°F but does not reach warning criteria (less than or equal to -10°F).

9.4.1.3 Warning

Issued up to 36 hours in advance of an event with an 80% or greater likelihood of occurring. The difference between a warning and advisory is the severity of the event; warnings have a greater severity than advisories.

Wind Chill Warning - Issued up to 36 hours before an event for an 80% or greater chance of wind chill values less than or equal to -10°F.

Winter Storm Warning - Issued up to 36 hours before an event for an 80% or greater chance of a winter weather event that meets at least one of these criteria: 2 or more inches of snow, 1/2 inch or more of sleet, or 1/4 inch or more of freezing rain.

Ice Storm Warning - Issued up to 36 hours before an event for an 80% or greater chance of a 1/4 inch or more of freezing rain.

Blizzard Warning - Issued up to 36 hours before an event for an 80% or greater chance of sustained or frequent wind gusts to 35mph or greater and considerable falling and/or blowing snow reducing visibility to less than 1/4 mile for 3 hours or more.

Frost / Freeze Warning - Below freezing temperatures are expected and may cause significant damage to plants, crops, or fruit trees in areas unaccustomed to freezing temperatures. This is usually issued for first the frost/freeze of the season and again in the spring for late frosts/freezes.

9.5 Severe Weather Reporting Criteria

Emergency Operations in Cherokee County may want to know about weather beyond what the National Weather Service would want reported. Things such as heavy rainfall or small hail are information that the county emergency managers may need but the NWS is not interested in. The National Weather Service uses the following criteria to determine if a thunderstorm is severe or not:

- Hail 3/4 of an inch in diameter or larger (largest hailstones)
- Wind gust of 50 knots or 58 mph or greater
- A tornado

Note that thunderstorm winds that bring trees, large tree limbs or power lines down would be considered severe. Also damage to certain structures would be considered severe.

Note: While 58 MPH still remains the official threshold for severe, the Atlanta NWS office has a new local policy on issuing warnings for damaging winds. Statistics show trees start falling at 35-40 MPH. Since the goal is to warn the public of potentially damaging weather, the PTC NWS will issue severe thunderstorm warnings when Doppler estimates show the wind to be around 40 MPH.

Other items to Report that do not meet Severe Weather Criteria:

- Washed out roads
- Water touching or overflowing a bridge
- Dam breaks or breaches
- Street flooding that results in a street closure
- Water flowing over streets and roadways
- Blocked storm drains when water rises to the level of the bottom of cars
- Any other flooding that is more than just a nuisance

When making the report, it is essential to tell the meteorologist an exact location and time you observed the event. Also important is whether the water is just rising or flowing or both. If you can safely measure the depth, that is also good information. Remember, flooding is the number one killer and the number one dollar-loss natural event.

9.5.1 Wind Speed Estimating

Wind Speed	Estimate Method
25 – 31 MPH	large branches in motion
32 – 38 MPH	whole trees in motion
39 – 54 MPH	twigs break off, wind impedes walking
55 – 72 MPH	damage to chimneys and TV antennas, large branches broken, and some trees uprooted
73 – 112 MPH	removes shingles, windows broken, trailer houses overturned, trees uprooted
113 + MPH	roofs torn off, weak buildings and trailer houses destroyed, large trees uprooted

9.5.2 Winter Weather Reporting Criteria

NET Control is looking for first-hand reports only, that included:

- Change over from Rain to Freezing Rain
- Change over from Sleet to Snow
- Snow – 1-3" in 12 hours
- Freezing Rain -- greater than 1/4 inch accumulation
- Sleet -- greater than 1/2 inch accumulation
- Freezing drizzle -- light accumulation
- Combination of any of the above elements, none of which meets warning criteria
- Potential injuries or loss of life due to extreme cold and wind chill (Motorists stuck on roadways)
- Impacts on the transportation networks (Down trees blocking roadways, Impassible bridges/roadways)
- Damages to utility infrastructure (Power lines down, Power outages)
- Commercial and personal property damages or loss.

9.6 Weather Reporting Methods

9.6.1 Linked Repeater Network

In North and Central Georgia there is a group of linked repeaters known as the Georgia SKYWARN Linked Repeater System. These repeaters are tied together during severe weather events and are monitored at the National Weather Service office in Peachtree City by WX4PTC (http://www.georgiaSKYWARN.com/wx4ptc/). Additional details are available at: http://www.georgiaSKYWARN.com/

Location	Frequency	Notes
Tyrone	444.675+ (77.0 Hz)	Hub and net control repeater. Emergency Power. South metro coverage. Battery backup at site. Also site of AB4KN-2 APRS digital. Linked to 444.600 via 220mhz link.
Fayetteville	444.600+ (77hz)	Backup Hub and net control / remote base repeater. Emergency Power. Good south metro coverage and down into Coweta, Fayette, Henry, Spalding, and Pike Counties. Mobile coverage into parts of north metro Atlanta as well. Generator and large UPS battery backup on site.
Peachtree City	442.500+ (77hz)	Backup remote base repeater. Covers Fayette, Coweta, Spalding and parts of Pike Counties. Some coverage into the southern metro Atlanta area. This repeater is also the NCS repeater for all public events in PTC where extra communications are requested.
Fayetteville	145.210- (131.8hz)	Hardwired to 444.600+ repeater controller. Good south metro Atlanta coverage. Same site as 444.600.
Madris	147.165+ (131.8 Hz)	Links to 444.675+ repeater. Good south metro coverage.
Griffin	145.390- (110.9 Hz)	Links to 444.600 repeater. Good south metro coverage.
Atlanta	146.820- (146.2 Hz) **VHAM18**	Atlanta Radio Club Repeater Good metro coverage. Links to 444.675+ or 444.600 repeaters.
Dalton	224.680- (118.8hz)	Links to Jasper 146.805+ repeater.
Jasper	146.805+ (100hz) **VHAM13**	Links to 444.675+ repeater and 444.600+. Wide north Georgia coverage. Also covers Atlanta Metro area. Emergency Power with generator and battery backup on site.
Sawnee Mtn.	441.900+ (141.3hz)	Links to 444.675+ repeater. Wide north Georgia coverage.
Covington	146.925- (88.5hz)	Links to 444.675+ repeater. Wide north Georgia coverage.
Dallas	146.895+ (77hz)	Links to 444.675+ repeater. Coverage into the northwestern part of the state (Rome down to Carrolton and over to N. Atlanta), improved mobile coverage even in the south metro area. Battery backup at site.
Dallas	224.880- (77hz)	Fulltime link to 146.895+.
Thomaston	147.390+ (131.8hz)	Links to 444.675+. Good coverage south of the metro area. (Also links to 444.600+)
Pine Mtn.	145.190-	Links to 444.600+. Great coverage south of the metro area.
LaGrange	147.330-	Links to 444.675+ Good coverage throughout the LaGrange and surrounding counties.
Warm Springs	144.920+ (DStar +2.5000)	Location: Pine Mountain, Warm Springs, Georgia DV C 144.9200 +2.5000 Normally linked to Reflector 30c Coverage: 50 miles
Dahlonega	146.835+	Links to 444.675+ repeater. Great coverage on the northeast corner of the state. Can hit from various parts of Atlanta. Battery backup at site.

Location	Frequency	Notes
Concord	145.250- (110.9hz)	Links to 444.600+ repeater. Great coverage over South Metro Atlanta area. Mobile coverage in Fayette, Coweta, Henry, Spalding, Pike, Troup and other surrounding counties.
Forsyth	147.315+	Links to 444.600+ repeater. County coverage includes; Parts of Southern Fayette, South Henry, Butts, Monroe, and Lamar. Also the Lake Juliette area (cities of Forsyth, Jackson, High Falls, Bolingbroke) Part of the Cherry Blossom Intertie.
Macon	145.430-	Good coverage over the Macon area and most all of Central Georgia. Part of the Cherry Blossom Intertie.
Macon	443.200+	Covers Bibb/Twigg and surrounding counties. Part of the Peach State Intertie.
Macon	147.015+ (88.5hz)	Covers Bibb and surrounding counties. Part of the Peach State Intertie.
Irwinton	147.240+ (77hz)	Wide coverage area. Counties include Jones, Twiggs, Wilkinson, and Washington. (Cities include Dublin, Gordon, McIntyre, and Sandersville. Part of the Peach State Intertie.
Irwinton	444.925+ (77hz)	Wide coverage area. Counties include Jones, Twiggs, Wilkinson, and Washington. (Cities include Dublin, Gordon, McIntyre, and Sandersville. Part of the Peach State Intertie.
Cochran	145.110-	Covers Bleckley and surrounding counties. Part of the Peach State Intertie.
Laurens County	145.150-	Wide Coverage repeater covering Dublin and surrounding counties. Part of the Cherry Blossom Intertie.
Eastman	145.210- (103.5hz)	Covers Eastman over into Bleckley County (Including the city of Cochran) Part of the Peach State Intertie.
Cedar Grove	147.150+ (123hz)	Covers Laurens and surrounding counties. Part of the Peach State Intertie.
Wayside	145.370- (88.5hz)	Covers Jones and Baldwin Counties (Including the cities of Gray and Milledgeville) Part of the Cherry Blossom Intertie.
Milledgeville	147.135+ (123hz)	Covers Baldwin and surrounding counties. Part of the Peach State Intertie.
Warner Robins	146.850-	Covers Jones and Baldwin Counties (Including the cities of Gray and Milledgeville) Part of the Peach State Intertie. (This repeater is linked on a part time basis.)
Warner Robins	146.670- (82.5hz)	Covers Houston and surrounding counties. Part of the Peach State Intertie.
Eatonton	444.425+ (186.2hz)	Covers south of I-20 into the counties of Morgan, Greene, and Putnam. Part of the Cherry Blossom Intertie.
Twin City	147.000+ (156.7hz)	Located near Statesboro. Wide coverage repeater. Part of the Cherry Blossom Intertie.
Macon	443.075+ (88.5hz)	Covers Bibb and surrounding counties. Part of the Peach State Intertie.
Warner Robins	443.150+ (82.5hz)	Covers Houston and surrounding counties. Part of the Peach State Intertie.
Crawford County	145.290- (82.5hz)	Covers Peach and surrounding counties. Part of the Peach State Intertie
Irwinton	443.275+ (77.0hz)	Wide coverage area. Counties include Jones, Twiggs, Wilkinson, and Washington (Cities include Dublin, Gordon, McIntyre, Sandersville). Part of the Peach State Intertie.
Montezuma	146.640- (97.4hz)	Covers Macon and surrounding counties. Part of the Peach State Intertie.
Bolingbroke	146.835- (77.0hz)	Covers Monroe and surrounding counties. Range north of Forsyth to McDonough area. Part of the Peach State Intertie

9.6.2 APRS

APRS is located on 144.390 here in Georgia. The NWS in PTC operates under the call sign of WX4PTC. Please, only send severe weather reports to this station. Please do not send test messages or other information here.

9.6.3 NWS Internet Storm Reporting

You can submit a storm report to the National Weather Service over the Internet using the following URL: http://www.srh.noaa.gov/StormReport/SubmitReport.php?site=ffc

There is an easy-to-understand form on the page that will collect your report information and forward it to the NWS staff.

9.6.4 eSpotter System

eSpotter is a system to facilitate the submission of spotter reports online. The system is being developed to enhance and increase timely and accurate online spotter reporting and communications between spotters and their local weather forecast offices.

More information is available at: http://espotter.crh.noaa.gov/ or http://www.srh.noaa.gov/ffc/?n=strmsubm1

9.6.5 Telephone

The National Weather Service – Atlanta (Peachtree City) Storm Reporting Hotline is (866) 763-4466

9.6.6 Social Media

The National Weather Service Atlanta Office monitors Twitter during a weather event. Add the @NWSAtlanta username in the Tweet so they will be copied, even if they do not follow you. As a general convention, the hash tag #gawx is used to identify weather information for the state of Georgia.

9.6.7 mPING

The NOAA Severe Storms Laboratory and the University of Oklahoma have developed the mPING application to gather simple crowd sourced “ground truth” about weather events. Running on a smart phone or tablet, the app allows the user to quickly and anonymously report what they are seeing at ground level, such as it is raining, or it is snowing. The GPS coordinates of the device along with the reported condition are quickly sent to the mPING server where it can be seen on a map.

Version of the application are available for both Android and iOS operating systems. The web site is http://mping.nssl.noaa.gov/

National Weather Service Peachtree City Severe Weather Information

www.weather.gov/atlanta

To Become an Active Spotter, Please Register at: spotternetwork.org

Who to Contact…

Meteorologist-in-Charge:
Keith Stellman
Keith.Stellman@noaa.gov

Storm Spotter Program Leaders
Alexander.Gibbs@noaa.gov
Nikole.Listemaa@noaa.gov
Patricia.Atwell@noaa.gov

Our Office Address…
4 Falcon Drive
Peachtree City, GA 30269

For Routine Weather Information, Call…
770.486.1133
(Monday-Friday 8 am-4 pm)

Monitor…
- Hazardous Weather Otlk
- 7-Day Forecast
- Short-Term Forecast
- Watches/Warnings

SEVERE WEATHER REPORTING PROCEDURES:

What to report…

TORNADOES FUNNEL CLOUDS WALL CLOUDS	Organized, persistent rotation
HAIL	Half Inch in diameter or larger
DAMAGING WINDS	Large branches, trees, powerlines, or signs blown down. Roof damage and structure damage.
FLOODING	Flooding of streets or highways. Is it posing a risk to life or property?
WINTER WEATHER	Any ice/snow accumulation
LIGHTNING	Injuries or damage caused by lightning

How to report…
- Keep your report **very brief**
- **Identify yourself** as a trained spotter
- Give your **exact location**
- Tell us **what** you saw
- Give the event's **time**

If you are in doubt as to whether or not an event is severe, make the report anyway.

Never assume someone has already made the report!

Spotter Guidebook: http://www.nws.noaa.gov/os/brochures/SGJune6-11.pdf

HAM Radio
- http://georgiaskywarn.com/

TO REPORT SEVERE WEATHER 24 HOURS A DAY, ANY DAY OF THE YEAR:
Call 1.866.763.4466

NOAA Weather Radio

STATION	LOCATION	FREQ. (MHz)
WXJ72	Taylor's Ridge	162.450
WWH23	Buchanan	162.425
KXI76	LaGrange	162.450
WXM32	Columbus	162.400
WXJ30	Americus	162.425
WXJ31	Thomaston	162.500
KEC80	Atlanta	162.550
WXK52	Chatsworth	162.400
KXI75	Blue Ridge	162.475
KXI22	Brasstown Bald	162.500
WXJ53	Cleveland	162.525
WXK56	Athens	162.400
KXI89	Eatonton	162.525
KXI28	Sandersville	162.450
KPS506	Washington	162.500
WXK71	Macon	162.475
KXI77	Eastman	162.400

On the Internet:	*Through Email…*	Via Cell Phone:
www.weather.gov/atlanta	SR-FFC.webmaster@noaa.gov	mobile.weather.gov

Spotter Certificates:
http://www.srh.noaa.gov/images/ffc/pdf/spotter_cert_web.pdf

10 Message Formats

When dealing with messages you need to consider the following:

- Single or Multiple Destinations – Is this message intended for a single station or everyone on a given net?
- Precision – How precise must the transmission be? For lists of numbers of names, every letter or digit must be copied exactly. For other types of messages, the partial or complete loss of words may not affect the meaning of the message.
- Complexity – How complex is the message? Long lists of items can be difficult to transmit using voice modes. Digital modes where the information is typed and printed at the receiving side can be very useful.
- Timeliness – How quickly must the message reach the intended recipient?
- Sensitivity – Does the message contain information that should not be shared with the general public? Since FCC regulations prohibit the encryption or use of codes to obscure the meaning of a message, sensitive information should be transmitted using methods other than amateur radio.

10.1 Types of Emergency Messages

Message Type	Appropriate Communications Modes
Tactical Messages	The most likely kind of message that will need to be handled. Tactical messages may be local (related to incident command) or may need to be exchanged between a remote EMA office and the GEMA SOC in Atlanta; these messages must be accurately transmitted. Because Georgia is so large propagation paths for the various modes become an issue. The following modes, in priority/preference order have been tested. Most appropriate mode for local tactical messages is FM phone (VHF) Second most appropriate mode is FM phone via linked-repeater network; note that this has some advantages of FM phone (most esp. quieting), but some of the disadvantages of HF SSB propagation (noise on the channel, introduced by various links and controllers; multiple courtesy tones; dropped links). For intra-state traffic of this type, HF SSB is currently the most used. For most traffic it is appropriate, however, at times, specifically during the day, the communications channels suffer from poor propagation paths. Experiments show that there are times that a CW mode can successfully transfer the information when the phone modes cannot. The Signal-to-Noise requirements of PSK31 are so much better than other modes that it may be an effective mode, especially when all the others fail
Manpower Requests	Second most likely kind of message to be expected. These usually come in the form of tactical messages; as such, the tactical discussion above applies. For more complex requests, packet radio modes (APRS is most common of the packet modes in Georgia) are most appropriate. PSK31 should be considered a fallback mode when other digital modes cannot propagate messages between southeast and northwest.
Welfare Inquiries	Best handled by store-and-forward modes; most requests come early in a disaster, but Red Cross and others do not take H/W for 36 hours after a disaster. Note that NTS is one form of store-and-forward mode; when relay operators are available, this can effectively handle this kind of traffic. However, precision IS important, since an H/W inquiry is usually directed at a particular individual; mistaken identity can create serious problems under many circumstances (at least, it can cause unnecessary worry for the people involved).
Medical Information	Rarely handled; best left to a secure mode. There are federal regulations (such as HIPAA and HiTECH) that have severe penalties for un-authorized release of private health information. Red Cross & by GEMA have asked at times for totally secure communications, but Part 97 rules do not allow this. Digital modes (including Digital Voice, such as D-STAR) while not completely secure may be helpful modes for secure traffic. RMS Express and Winlink in a peer-to-peer mode may also be useful for transmitting carefully selected sensitive information.

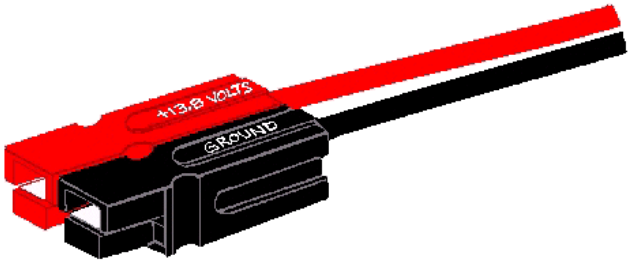
Message Type	Appropriate Communications Modes
Casualty Lists	Rarely handled; best left to a secure mode. Red Cross & by GEMA have asked at times for totally secure communications, but Part 97 rules do not allow this. Digital modes (including Digital Voice, such as D-STAR) while not completely secure may be helpful modes for secure traffic. RMS Express and Winlink in a peer-to-peer mode may also be useful for transmitting carefully selected sensitive information.
Requests for Supplies	Best handled by one of the digital modes, because of the complexity and need for precision; priority and urgency may dictate that some requests fall into the category of tactical messages
Shelter Resident Lists	Same discussion as medical and casualty lists; these require secure channels
Disaster Assessments	Typically, these are very much like tactical messages; best handled by FM phone, due to portability; GPRS-tracked APRS stations can also be very effective in assisting with these assessments.

11 Equipment and Technical Information

11.1 Power Distribution

Cherokee County ARES prescribes the Anderson Powerpole as the standard dc power connector for use by CC-ARES personnel. This standard, highly reliable connector allows quick and easy installation and substitution of radios, power supplies, batteries, and other equipment.

Both the 15-ampere or 30-ampere sizes may be used. The plastic parts are the same for both sizes, so they will mate with one another. The barrel area (which holds the wire) of the 15-ampere silver-plated contact is smaller than that of the 30-ampere contact, but the contact area is the same. The connectors dovetail together as a compact unit.



Housings should be mated according to the diagram above, viewing from the contact side (opposite the wire side), tongue (contact) down, and hood up, RED on the LEFT, BLACK on the RIGHT. The use a roll pin is not recommended as they can fall out and short a battery or power supply. In most cases the dove tailing of the connector will hold it together, if needed, a drop of super-glue will keep the housings from sliding apart.

The 15-ampere contacts are designed for 16-20 AWG wire and the 30-ampere contacts are designed for 12-16 AWG wire. The contacts can be soldered or crimped to wires.

There are many pre-assembled power cables available through the amateur radio supply houses or at ham fests. It would be a good idea to have at a minimum, a power cable for each piece of equipment you might deploy with, fitted with a Powerpole at one end.

11.2 Antenna Connections

All standard antenna coax will be terminated in a UHF connector. These connectors are also known as PL-259 (male, with the center pin) and SO-259 (female, with the center socket). The antenna coax installed at the Cherokee County EOC and shelters will be terminated in this connector.

An adapter will be needed to connect many types of handheld radios to the SO-259 connection point. Most handheld radios utilize a BNC or SMA connection for the antenna. A short jumper cable, 3 – 10 feet in length, terminated with a UHF connector on one end and the correct connector for your radio on the other is recommended.

You should also have a 50-foot roll of RG8 type coax (LMR400 or Belden 9913 low loss preferred) along with a 2 meter / 70 centimeter portable antenna (yagi, small vertical such as the Diamond X50 or other) to take along on any deployment.

11.3 Recommended Home Station Set-Up

After many ham operator experiences, the following equipment is recommended for optimum performance of your home station.

- Dual band VHF/UHF radio
- The shortest length runs of low loss coax such as LMR400 (recommended) or Beldin 9913 between the antenna and radio. Standard RG 8/U exhibits very high loss on VHF and UHF, typically as high as 4.7 dB at 500MHz (that is well over half of the transmitted or received signal).
- Base station dual band antenna for VHF/UHF (Diamond X200 or X300 recommended). Mount the antenna high on the house or a 30 foot push up pole (available at Lowes) as height is your best friend. Make sure that you ground the antenna base and the coax where it enters the shack. The National Electrical Code (NEC) requires all grounds to a facility be bonded, so please ensure that any local ground rod is bonded to the house primary ground point.
- For high frequency work, a 100-watt transceiver is recommended (can be multi-band like the Yaesu FT 857 or FT 897).
- A 10-160m dipole (the Cobra brand is recommended) or homemade Delta Loop for 80 meters. The propagation patterns of a vertical HF antenna make them impractical for local ARES use.
- A manual antenna tuner such as the MFJ 969.
- Some type of emergency power. This could consist of a battery and charger system or a generator. Use safe practices when working with batteries to vent any gasses that could be created during charging or use.
- Power supply(s) as needed for your equipment

11.4 Recommended Basic Communications Response Kit

The following list covers an average response kit for deployment to an emergency location. We realize that everyone may not have all of this equipment available, but it is something to strive for.

Ideally this equipment should be easy to grab in an emergency. Consider some type of packaging that allows normal use of the equipment but is very easy to transport.

- County issued Amateur Radio Operator ID card
- State ARES issued identification card
- Copy of your current FCC licenses (Amateur, GMRS, etc.)
- Weather radio receiver (independent or included in one of the other radios)
- Two FRS/GMRS radios
- Dual band handheld radio (2m/70cm)
- Dual band mobile radio (2m/70cm) (higher power than HT)
- Headphones (very important for noisy or corroded locations)
- 30-foot mast (push up) and material to brace it (rope or other guy wire)
- 2m/70 cm external antenna (Diamond X30, X50, X200 or X300 recommended)
- 30’ – 50’ low loss RG8 type coax (LMR400 or Belden 9913) with connectors and adapters
- D.C. power supply, 30 amps
- FLDIGI and FLMSG loaded on a laptop computer with sound card and interface
- ARES Field Resources manual. This is available at HRO, through the ARRL
- A copy of this manual
- Copies of all needed paperwork and forms, such as those in appendix J
- A pad of paper and pens
- Florescent safety vest (preferably with ARES markings)

11.5 Additional Items for the Advanced Communications Kit

Some may have already technically reached this level. Others may wish to know what technology is there for the offering. Here is a list of items you can add to your kit.

- HF Radio
- C.B.
- Portable repeaters (VHF & UHF) duplexers loosely tuned
- Computer printer
- G5RV or B & W Folded Dipole (Cobra brand recommended)
- Linear amplifier.
- Spare batteries and chargers
- Antenna analyzer
- Watt meter
- Tri-band antenna (20-15-10) with rotor
- Antenna switch
- Additional D.C. power supplies
- AC Generator
- Dummy load
- C.W. keys
- Additional coax and connectors
- RF connector adapters (such as TNC to BNC, TNC to PL-259, N to PL-259, etc.)
- General tool kit for maintenance
- Brightly colored flagging tape to mark guy wires and such
- Necessary supplies and hardware to support the above equipment

11.6 Personal Protective Equipment

We cannot stress safety enough. Each of us must take responsibility for our own safety and that of our team. Having, and using, the correct personal protective equipment (PPE) is part of this. Keep in mind that PPE should be considered a last line of defense. Understanding how to perform a task safely and taking advantage of engineering controls (such as a safety switch that disconnects power when an amplifier case is opened) should be the first steps.

Here is a list of suggested PPE. Make sure it is in good condition and you understand how to correctly use it!

- Lime green safety vest, preferably with ARES markings (available from ARRL)
- Hard hat
- Gloves, type based on task
- Eye protection (safety glasses, goggles, face shield)
- Safety shoes or boots (toe protection, puncture resistant, electrical safe)
- Climbing belt or harness
- Safety ropes for tower work

11.7 Other Items

The list of other items could go on forever. We can take a lesson from the Boy Scout motto; *Be Prepared.* The amount of equipment is directly tied to the length of the deployment. Many more items are needed for a one-week deployment than for a 2 hour community event.

Here are some items you should consider:

- First aid kit
- Copies of your training documentation (FCC issued licenses, FEMA training, NWS training, etc.). This should be both physical copies and electronic copies (JPEG or PDF)
- Hat or other head cover
- Change of clothing, appropriate for expected weather
- Personal toiletry kit
- Spare eyeglasses and/or sun glasses
- Extra personal medications
- Food, water or other beverages
- Snacks (energy bars, trail mix, etc.)
- Rain gear
- Portable shelter such as a tarp and poles or 'pop-up' canopy
- Area maps, compass and/or GPS unit
- Flashlight
- Selection of batteries (AA, C, D, specialty)
- Notebook with pens and/or pencils, other office supplies
- Toilet tissue
- Magnetic mount VHF/UHF antenna
- Folding chair
- Folding table

12 Appendix A – National Incident Management System (NIMS) and Incident Command System (ICS)

The National Incident Management System (NIMS) is a structured framework used nationwide for both governmental and non-governmental agencies to respond to natural disasters and or terrorist attacks at the local, state, and federal levels of government. A 2003 presidential directive required all federal agencies to adopt the NIMS and to use it in their individual domestic incident management and emergency prevention, preparedness, response, recovery and mitigation programs and activities. The directive also required federal departments to make adoption of NIMS by state, tribal, and local organizations a condition for federal preparedness assistance.

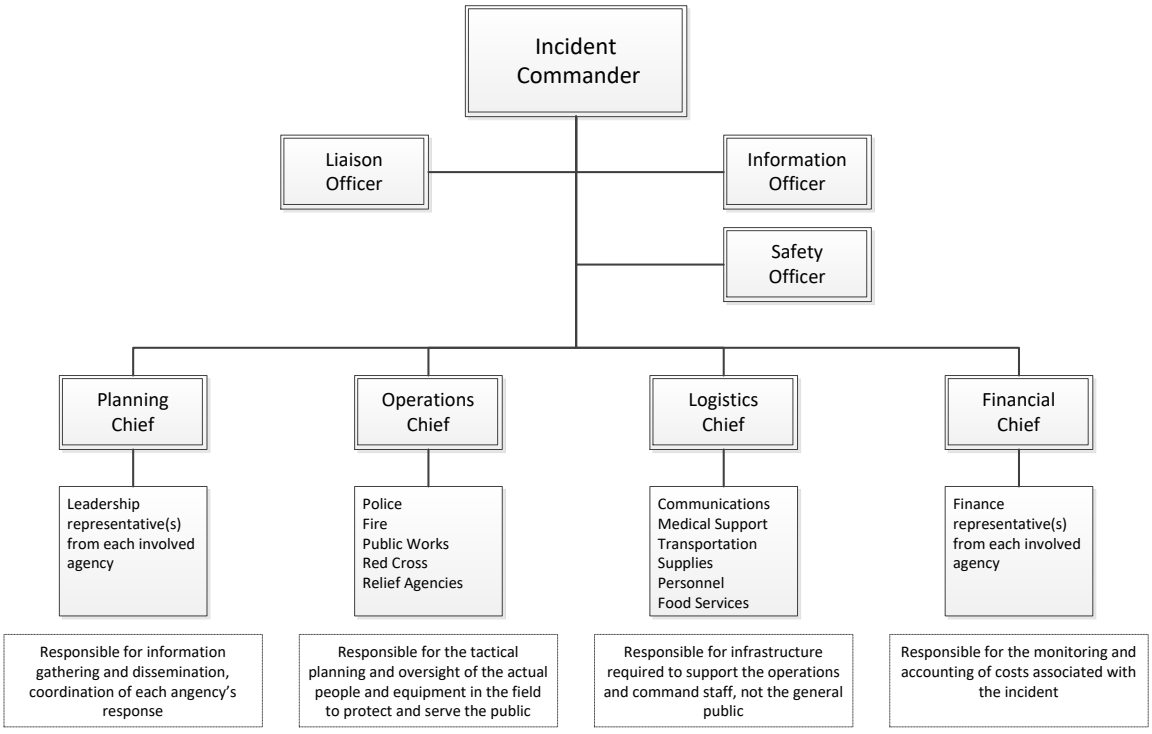
NIMS standard incident command structures are based on three key organizational systems:

- The Incident Command System
- Multi-agency Coordination (MAC) System
- Public Information Systems

The Incident Command System (ICS) consists of a standard management hierarchy and procedures for managing temporary incident(s) of any size. ICS procedures should be pre-established and sanctioned by participating authorities, and personnel should be well-trained prior to an incident.

ICS includes procedures to select and form temporary management hierarchies to control funds, personnel, facilities, equipment, and communications. Personnel are assigned according to established standards and procedures previously sanctioned by participating authorities. ICS is a system designed to be used or applied from the time an incident occurs until the requirement for management and operations no longer exist.

https://www.fema.gov/emergency-managers/nims/components



ICS is interdisciplinary and organizationally flexible to meet the following management challenges:

- Meets the needs of a jurisdiction to cope with incidents of any kind or complexity (i.e., it expands or contracts as needed).
- Allows personnel from a wide variety of agencies to meld rapidly into a common management structure with common terminology.
- Provide logistical and administrative support to operational staff.
- Be cost effective by avoiding duplication of efforts and continuing overhead.
- Provide a unified, centrally authorized emergency organization.

12.1 Emergency Support Functions (ESF)

The NIMS / ICS define a number of standard support functions that may be required for any given incident. Not every incident will need all of the functions. ARES emergency communications are generally part of ESF #2 (Communications) and falls under the Logistics Section.

While Deployed at the Cherokee County EOC, ARES operates under ESF #2

ESF #	Description	ESF #	Description
ESF #1	Transportation	ESF #9	Urban Search & Rescue
ESF #2	Communications	ESF #10	Oil & Hazardous Materials Response
ESF #3	Public Works and Engineering	ESF #11	Agriculture and Natural Resources
ESF #4	Firefighting	ESF #12	Energy
ESF #5	Emergency Management	ESF #13	Public Safety and Security
ESF #6	Mass Care, Housing, and Human Services	ESF #14	Long-Term Community Recovery
ESF #7	Resource Support	ESF #15	External Affairs
ESF #8	Public Health and Medical Services		

13 Appendix B – Useful Tables

13.1 ITU Phonetic Alphabet

A	Alfa	J	Juliet	S	Sierra
B	Bravo	K	Kilo	T	Tango
C	Charlie	L	Lima	U	Uniform
D	Delta	M	Mike	V	Victor
E	Echo	N	November	W	Whiskey
F	Foxtrot	O	Oscar	X	X-ray
G	Golf	P	Papa	Y	Yankee
H	Hotel	Q	Quebec	Z	Zulu
I	India	R	Romeo		

13.2 Appendix B – R-S-T System

	Readability	Signal Strength	Tone
1	Unreadable	Faint signals, barely perceptible	Sixty cycle AC or less, very rough and broad
2	Barely readable, occasional words distinguishable	Very weak signals	Very rough AC, very harsh and broad
3	Readable with considerable difficulty	Weak signals	Rough AC tone, rectified but not filtered
4	Readable with practically no difficulty	Fair signals	Rough note, some trace of filtering
5	Perfectly readable	Fairly good signals	Filtered rectified AC but strongly ripple-modulated
6	N/A	Good signals	Filtered tone, definite trace of ripple modulation
7	N/A	Moderately strong signals	Near pure tone, trace of ripple modulation
8	N/A	Strong signals	Near perfect tone, slight trace of modulation
9	N/A	Extremely strong signals	Perfect tone, no trace of ripple or modulation of any kind

13.3 International Q-Signals (Not to be used in ARES or Emergency Communications)

Q-Signals are not to be used for Emergency Communications, ARES Drills/Exercises, or MARS, etc.
The below listing is a reference should you encounter a Q Signal.

A Q-Signal followed by a question mark (?) asks a question. A Q-Signal without the question mark (?) answers the question affirmatively, unless otherwise indicated.

Q Signal	Meaning	Q Signal	Meaning
QRA	What is the name of your station?	QRZ	Who is calling me?
QRG	What is my exact frequency?	QSA	What is my signal strength? (1-5)
QRH	Does my frequency vary?	QSB	Are my signals fading?
QRL	Are you busy?	QSK	Can you work break-in?
QRM	Is my transmission being interfered with?	QSL	Can you acknowledge receipt?
QRN	Are you troubled by static?	QSO	Can you communicate with _____ direct?
QRO	Shall I increase transmitter power?	QSP	Will you relay to _____?
QRP	Shall I decrease transmitter power?	QSX	Will you listen for _____ on _____ ?
QRS	Shall I send slower?	QSY	Shall I change frequency? (Answer negative)
QRT	Shall I stop sending?	QTC	How many messages have you to send?
QRU	Have you anything for me? (Answer negative)	QTH	What is your location?
QRV	Are you ready?	QTR	What is your time?
QRX	When will you call again?		

13.4 Standard Procedural Signals (CW and FLDIGI)

In Morse code, prosigns or procedural signals are dot/dash sequences that have a special meaning in a transmission: they are a form of control character. They are normally written as if they were composed of one, two or three ordinary alphabetic characters but they are sent "run together", omitting the normal inter-character spaces that would occur if they were being sent as normal text.

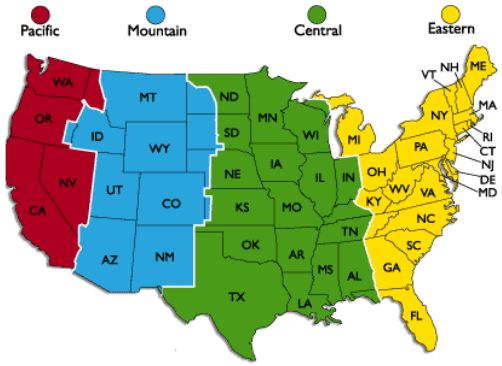
Prosign	Meaning	Prosign	Meaning
FPK	Go ahead	R	Roger (Transmission received in full)
AR	Over	SK	Clear
KN	Over (Specific Station)	CL	Leaving the air, Closing station
AS	Stand by or wait		

13.5 CTCSS Tones

This table contains a list of the sub-audible tones used for Continuous Tone Coded Squelch Systems. This is system is often referred to as PL (Private Line) a trademark of Motorola or CG (Channel Guard, a trademark of General Electric. The user code refers to the ICOM / USFS-CDF designation.

Frequency (Hz)	User Code	Motorola Code	Frequency (Hz)	User Code	Motorola Code	Frequency (Hz)	User Code	Motorola Code
67.0	01	XZ	**107.2**	14 / 10	1B	**173.8**	28	6A
69.3		WZ	**110.9**	15 / 01	2Z	**179.9**	29	6B
71.9	02	XA	**114.8**	16 / 11	2A	**186.2**	30	7Z
74.4	03	WA	**118.8**	17	2B	**192.8**	31	7A
77.0	04	XB	**123.0**	18 / 02	3Z	**203.5**	32	M1
79.7	05	WB / SP	**127.3**	19 / 12	3A	**206.5**		8Z
82.5	06	YZ	**131.8**	20 / 03	3B	**210.7**	33	M2
85.4	07	YA	**136.5**	21 / 04	4Z	**218.1**	34	M3
88.5	08	YB	**141.3**	22 / 13	4A	**225.7**	35	M4
91.5	09	ZZ	**146.2**	23 / 05	4B	**229.1**		9Z
94.8	10	ZA	**151.4**	24 / 14	5Z	**233.6**	36	M5
97.4	11	ZB	**156.7**	25 / 06	5A	**241.8**	37	M6
100.0	12 / 09	1Z	**162.2**	26	5B	**250.3**	38	M7
103.5	13 / 08	1A	**167.9**	27 / 07	6Z	**254.1**		0Z

Time Conversion Chart



Difference from Universal Coordinated Time (UTC)

Time Zone	Standard Time	Daylight Time
Atlantic	+ 4 hours	+ 3 hours
Eastern	+ 5 hours	+ 4 hours
Central	+ 6 hours	+ 5 hours
Mountain	+ 7 hours	+ 6 hours
Pacific	+ 8 hours	+ 7 hours

Universal Coordinated Time (UTC) is the time at the zero or reference meridian. Time changes one hour with each change of 15 degrees in longitude. The five time zones in the US proper and Canada roughly follows these lines.

* 0000 and 2400 are interchangeable. (2400 is associated with the date of the day ending, 0000 with the day just starting.)

13.6 Standard Amateur Repeater Splits

This table shows the standard repeater splits of offsets for each band. The split could be positive (transmit above the listed receive frequency) or negative (transmit below the listed receive frequency).

Band	Split
10 Meters (28 – 29.7 MHz)	100 KHz
6 Meters (50 - 54 MHz)	1.0 MHz
2 Meters (144 - 148 MHz)	600 KHz
1.25 Meters (219 - 225 MHz)	1.6 MHz
70 Centimeters (420 - 450 MHz)	5.0 MHz
33 Centimeters (902 - 928 MHz)	25 MHz
23 Centimeters (1240 - 1300 MHz)	12 MHz

14 Appendix C – Cherokee County Dispatch Codes

Cherokee County does use dispatch signals and 10 codes for normal radio operations. For any type of multi-agency operation, NIMS and ICS mandate that plain English be used instead of codes.

14.1 Cherokee County Dispatch Signals

Signal	Description	Signal	Description	Signal	Description
1	Abandoned Vehicle	**34**	Gaming	**67**	Person Down (specify situation)
2	Silent Alarm	**35**	Report to Precinct / HQ	**68**	Person Screaming
3	Audible Alarm	**36**	Holdup in Progress	**69**	Armed With _____ (weapon type)
4	Ambulance Request	**37**	Illegal Parking	**70**	Prowler
5	Kidnapping	**38**	Illegal Liquor or Drugs	**71**	Public Indecency
6	Burglar in Residence	**39**	Information	**72**	Speeding / Reckless Driving
7	Burglar in Business	**40**	Threats	**73**	Rush your call
8	Call Radio	**41**	Traffic Accident / Injury	**74**	Trespassing
9	Call Extension ___	**42**	Burglary Already Occurred	**75**	Harassing / Obscene Phone Calls
10	Bomb Threat at Comm. Ctr.	**43**	Hit & Run	**76**	Sick Call
11	Bomb Device at Comm. Ctr.	**44**	Armed Robbery Already Occurred	**77**	Snatch Thief
12	Road Rage	**45**	Theft	**78**	Lookout
13	Gang Related Activity	**46**	Person Hit by Auto	**79**	Stealing of or from Auto
14	Child Custody/Exchange	**47**	Person Injured (explain type)	**80**	Hostage Situation
15	Administrative Detail	**48**	Person Dead	**81**	Street Hazard
16	Open Door	**49**	Rape/Sexual Assault	**82**	Request Prisoner Transport
17	Littering / Dumping	**50**	Person Shot	**83**	Wanted Person Located
18	Stranded Motorist	**51**	Person Stabbed	**84**	Work Traffic
19	SWAT Callout	**52**	Stolen/Recovered Property	**85**	Wrecker Request
20	Animal Investigation	**53**	Suicide or Suicide Attempt	**86**	Domestic Dispute
21	Business/Domestic Dispute	**54**	Suspicious Person/Auto	**87**	Make Contact with _____
22	Child Abuse/Neglect	**55**	Unknown Trouble/911 Hang up	**88**	Vandalism/Criminal Damage
23	Disorderly Children	**56**	Missing / Lost Person	**89**	Bomb Threat
24	Demented Person	**57**	Noise Violation (specify)	**90**	Aircraft Crash
25	Discharging Firearms	**58**	Assault	**91**	Riot / Civil Disorder
26	Discharging Fireworks	**59**	Meet with _____	**92**	Zone Patrol / Residence Check
27	Disorderly Person	**60**	Molesting Women/Children	**93**	Stalking
28	Person Drunk	**61**	Money Transfer/Escort	**94**	Deliver Message
29	Fight in Progress	**62**	O.B. Call	**95**	Inmate Disorder
30	Drunk in Auto	**63**	OFFICER NEEDS HELP	**96**	Welfare / Residence Check
31	Electric Wires Down	**64**	Panhandling / Soliciting	**97**	D-run
32	Escaped Prisoner	**65**	Holdup Alarm		
33	Fire (explain type)	**66**	Peeping Tom		

14.2 Cherokee County Dispatch 10 Codes

The “10” codes were originally developed by the Association of Public Communications Officers (APCO) in 1940 as project 4. The list of codes was expanded in 1973 as part of project 14.

There are no standard 10 codes or dispatch codes in the United States. This can be very troublesome during a wide scale disaster or exercise. For any type of multi-agency operation, NIMS and ICS mandate that plain English be used instead of codes.

APCO International current position is that plain speech communications over public safety radio systems is preferred over the traditional 10-Codes and dispatch signals.

Code	Description	Code	Description	Code	Description
10-0	Use Caution	**10-17**	Warrants (F/M)	**10-34**	Resume Normal Radio Traffic
10-1	Unable to Copy	**10-18**	Quickly	**10-35**	Vehicle Stop
10-2	Copy Well / Radio OK	**10-19**	Return to Last Call	**10-36**	Advise Time
10-3	Stop Transmitting	**10-20**	Advise Location	**10-37**	Advise Your Name
10-4	OK / Understood	**10-21**	Telephone (give # and info)	**10-42**	Officer's Residence
10-5	Relay	**10-22**	Cancel / Disregard	**10-74**	Negative
10-6	Busy	**10-23**	Arrived at Scene	**10-75**	Make Contact with
10-7	Out of Service	**10-25**	Make contact with _____	**10-76**	In route to Location
10-8	In Service	**10-27**	Driver’s License Check	**10-77**	Give E.T.A.
10-9	Repeat Last Traffic	**10-28**	Vehicle Registration Check	**10-80**	Chase in Progress
10-12	Stand-by	**10-29**	Warrant / Wants Check	**10-81**	Unit Status and Location Check
10-13	Weather Report	**10-30**	Unnecessary Radio Traffic	**10-99**	Wanted / Stolen Indicated
10-14	Escort / Convoy	**10-32**	Intoximeter Availability		
10-15	Prisoner in Custody	**10-33**	EMERGENCY		

14.3 Cherokee County Dispatch Status Codes

Code	Description	Code	Description	Code	Description
1	Emergency Call	**8**	Change Location to _____	**16**	Accident Report
2	Urgent Call	**9**	Surveillance / Stakeout	**17**	Traffic Ticket
3	Routine Call	**10**	Request Detective Unit	**18**	Written Warning Ticket
4	Everything is OK	**11**	Gone on Arrival	**19**	Turned over to Detective
5	Out of Vehicle	**12**	Unfounded	**20**	Wanted Person Located
5M	Meal Break	**13**	No Action Taken	**21**	Requesting Supervisor
6	Unable to Locate	**14**	Misc. Incident Report		
7	Backup Request / Dispatch	**15**	Incident Report		

15 Appendix D – Cherokee County Key Locations

15.1 General Addresses

Cherokee County Emergency Management Agency
498 Chattin Drive
Canton, GA 30115

E-911
498 Chattin Drive
Canton, GA 30115

Fire and Emergency Services
150 Chattin Drive
Canton, GA 30115

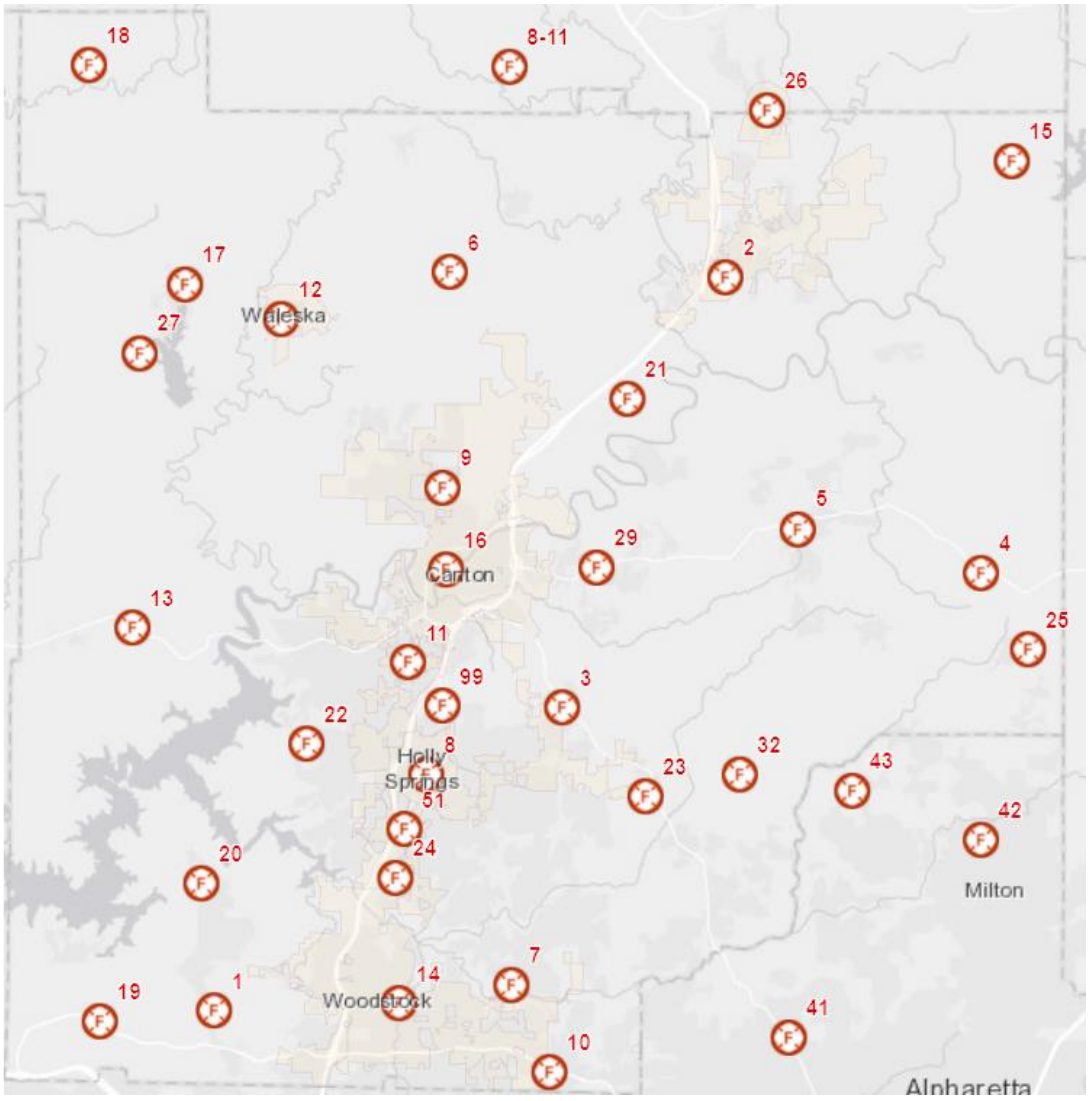
Sheriff's Office
498 Chattin Drive
Canton, GA 30115

Cherokee County Conference Center
1130 Bluffs Parkway
Canton, GA 30114

15.2 Cherokee County Fire Stations

Website: [Cherokee County Fire Department | Cherokee County, GA, USA]

Station Map: [CCFES FireView (arcgis.com)]



Fire Station	Address
Canton City Fire Department Station 11	2731 Marietta Highway Canton, GA
Canton Fire Department Station 16	190 West Main Street Canton, GA
Cherokee County Fire And Emergency Services Station 1	6276 Bells Ferry Road Acworth, GA
Cherokee County Fire And Emergency Services Station 12	9081 Fincher Road Waleska, GA
Cherokee County Fire And Emergency Services Station 13	2833 Knox Bridge Highway Canton, GA
Cherokee County Fire And Emergency Services Station 15	5804 Yellow Creek Road Ball Ground, GA
Cherokee County Fire And Emergency Services Station 17	125 Chickasaw Drive Waleska, GA
Cherokee County Fire And Emergency Services Station 18	5840 Salacoa Road Waleska, GA
Cherokee County Fire And Emergency Services Station 19	100 Ridge Mill Court Acworth, GA
Cherokee County Fire And Emergency Services Station 2	390 Groover Street Ball Ground, GA
Cherokee County Fire And Emergency Services Station 20	6724 Bells Ferry Road Woodstock, GA
Cherokee County Fire And Emergency Services Station 21	1190 Evenflo Drive Ball Ground, GA
Cherokee County Fire And Emergency Services Station 22	9550 Bells Ferry Road Canton, GA
Cherokee County Fire And Emergency Services Station 23	7625 Vaughn Road Canton, GA
Cherokee County Fire And Emergency Services Station 24	1000 River Park Boulevard Woodstock, GA
Cherokee County Fire And Emergency Services Station 25 - Substation	2250 Holbrook Campground Road Alpharetta, GA
Cherokee County Fire And Emergency Services Station 3	3624 Hickory Flat Highway Canton, GA
Cherokee County Fire And Emergency Services Station 32	3644 Sugar Pike Road Canton, GA
Cherokee County Fire And Emergency Services Station 4	9253 Freehome Highway Canton, GA
Cherokee County Fire And Emergency Services Station 5	10378 East Cherokee Drive Canton, GA
Cherokee County Fire And Emergency Services Station 6	3869 Lower Burris Road Canton, GA
Cherokee County Fire And Emergency Services Station 7	1530 Barnes Road Woodstock, GA
Cherokee County Fire And Emergency Services Station 8	260 Hickory Road Holly Springs, GA
Cherokee County Fire And Emergency Services Station 9	1398 Reinhardt College Parkway Canton, GA
Circle 5 Volunteer Fire Department	10378 East Cherokee Drive Canton, GA
City Of Woodstock Fire Department Station 24	105 Wigley Road Woodstock, GA
Clayton Fire Department	3869 Lower Burris Road Canton, GA
Georgia Forestry Commission Forest Fire Protection - Cherokee	3451 Cumming Highway Canton, GA
Lake Arrowhead Volunteer Fire Department	1216 Lake ArrowHead Drive Waleska, GA
Lake Arrowhead Volunteer Fire Department Station 17	125 Chickasaw Drive Waleska, GA
Mica Fire Department	5804 Yellow Creek Road Ball Ground, GA
Nelson Volunteer Fire Department	Dogwood Drive Ball Ground, GA
Woodstock Fire Department Station 14	225 Arnold Mill Road Woodstock, GA

15.3 Cherokee County Point of Distribution (POD) Locations

POD	Address
Cherokee High School	930 Marietta Highway, Canton, GA 30114
Woodstock High / Middle School	2010 Towne Lake Hills South Drive, Woodstock, GA 30189
Creek View High School	1550 Owens Store Road, Canton, GA 30115
Woodstock First Baptist Church	777 Neese Road, Woodstock, GA 30188

15.4 Cherokee County Emergency Shelters

15.4.1 North Area

Shelter	Address	Capacity Long Term	Capacity Short Term
Ball Ground Community Center	250 Civic Drive, Ball Ground, GA 30107	80	160
Waleska First Baptist Church	10657 Fincher Road, Waleska, GA 30183	68	136

15.4.2 Central Area

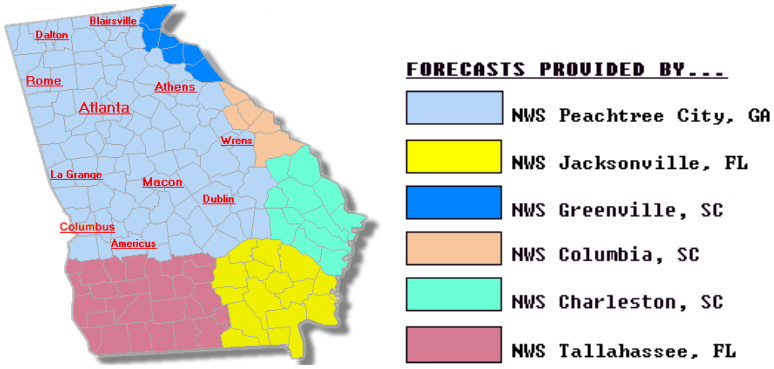
Shelter	Address	Capacity Long Term	Capacity Short Term
First Baptist Church of Canton	1 Mission Point, Canton, GA 30114	97	380
Canton First United Methodist	930 Lower Scott Mill Rd., Canton, GA 30115	60	120
Hopewell Baptist Church	75 Ridge Road, Canton, GA 30114	130	260

15.4.3 South Area

Shelter	Address	Capacity Long Term	Capacity Short Term
First Baptist Church of Woodstock	11905 Highway 92, Woodstock, GA 30118	166 (Bld. B) 141 (Bld. A)	600
His Hands Church	550 Molly Lane, Woodstock, GA 30188		650

16 Appendix E –Weather Radio Information

There are 5 Weather Service Offices that cover Georgia. Cherokee County would fall under the Peachtree City (Atlanta) office.



16.1 Weather Radio

The National Oceanic and Atmospheric Administration (NOAA) Weather Radio All Hazards (NWR) is a network of radio stations broadcasting NOAA's National Weather Service (NWS) warnings, watches, forecasts and other emergency information from nearby NWS offices 24 hours a day.

National Weather Service

NOAA Weather Radio

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by NOAA. As of July, 2010, the NWR network included 1013 stations covering an estimated 97% of the U.S. population. The NWR network provides coverage in all 50 states, Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, and the Northern Mariana Islands, including adjacent waterways and coastal waters.

As an "all hazards" radio network, NWR is a single source for comprehensive weather and emergency information. NWR broadcasts emergency warning and post-event information for severe weather events and non-weather emergency events. Warnings are broadcast for both natural (such as tsunamis and volcanoes) and man-made (such as Amber Alerts, toxic, chemical, and biological releases, and terrorist attacks) events as necessary. NWR is the primary actuator of the Federal Communications Commission's (FCC) Emergency Alert System (EAS). NWR is the only federally operated system broadcasting weather and emergency warnings to the public. Reception of NWR broadcasts depends on reliable signal reception. Typically, a reliable signal can be received up to 40 miles from a station, assuming level terrain. However, NWS stations in mountainous and urban areas may experience reduced signal reception due to signal blockage.

There are 3 weather radio transmitting stations that cover the Cherokee County area. They are detailed below.

Station	Channel	Frequency	Power	Covered Counties
Atlanta KEC-80	7	162.550	500W	Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Rockdale
Chatsworth WXK-52	1	162.400	200W	Bartow, Catoosa, Cherokee, Fannin, Gilmer, Gordon, Murray, Pickens, Walker, Whitfield
Cleveland WXJ-53	6	162.525	300W	Banks, Barrow, Cherokee, Clark, Dawson, Forsyth, Franklin, Gwinnett, Habersham, Hall, Hart, Jackson, Lumpkin, Madison, Oconee, Pickens, Stephens, Walton, White

16.1.1 Whole County SAME Codes

The NWS has created a system of Specific Area Message Encoding (SAME) codes that allow the restriction of alerts to specific areas. These are typically whole counties but could be smaller areas.

If the first digit of the SAME code is zero (0) than the whole county is specified, the next 2 digits specify the state (13 = Georgia) and the last 3 digits specify the specific county.

The SAME code for Cherokee County is 013067 on 162.550 MHz (Atlanta), 162.400 MHz (Chatsworth) and 162.525 MHz (Cleveland)

County	SAME Code	County	SAME Code
Bartow	013013	**Forsyth**	013117
Cherokee	013057	**Fulton**	013121
Cobb	013067	**Gordon**	013129
Dawson	013085	**Gwinnett**	013135
DeKalb	013089	**Pickens**	013227

17 Appendix F – Useful Telephone Numbers

17.1 Federal Agencies

Agency	Description	Telephone
Department of Homeland Security	Main Number	(202) 282-8000
Department of Homeland Security	NOC Senior Watch Officer	(202) 282-8001
Federal Communications Commission	Crisis Management Center	(202) 418-1122
Federal Communications Commission	Crisis Management Center - Fax	(202) 418-2813
Federal Emergency Management Agency	National Response Coordination Center	(202) 646-2828
National Communications System	NCC Radio Room/SHARES HF Radio	(703) 235-5080
National Communications System	Operations Center / NCC Watch	(703) 235-5080
National Communications System	SHARES Project Office	(703) 379-0021

17.2 National Weather Service

Agency	Description	Telephone
National Weather Service	Peachtree City – Main Office Number	(770) 486-1133
National Weather Service	Severe Weather Reporting	(770) 486-8535
National Weather Service	Severe Weather Reporting	(866) 763-4466

17.3 American Red Cross

Agency	Description	Telephone
American National Red Cross	24-hr Disaster Operations Center	(800) 526-3571
American National Red Cross	24-hr Disaster Operations Center	(202) 303-5555
American National Red Cross	Main Number	(866) 724-3577
American Red Cross - Atlanta	Atlanta Chapter - General Number	(404) 575-3163

17.4 American Radio Relay League (ARRL)

Agency	Description	Telephone
American Radio Relay League	Main Number	(860) 594-0200
American Radio Relay League	Fax	(860) 594-0259

17.5 Cherokee County

Agency	Description	Telephone
Cherokee County-Emergency Management	General Number	(678) 493-4001
Emergency Operations Center	Ham Radio Position operations room	(678) 493-4060
Emergency Operations Center	FAX in EOC operations room	(678) 493-4027
911 Center	911 Supervisor	(678) 493-4080
Cherokee County Sheriff	Switchboard	(678) 493-4200
Cherokee County Sheriff	Sheriff General Fax	(678) 493-4228
Cherokee County Fire	Fire Department - General Number	(678) 493-4000
Cherokee County Fire	Fire Department - General Fax	(678) 493-4034

17.6 City Police Departments

Agency	Description	Telephone
Woodstock Police	General Number	(770) 592-6030
Canton Police	General Number	(770) 720-4883
Nelson Police	General Number	(770) 735-2211
Ball Ground	General Number	(770) 735-2123
Holly Springs	General Number	(770) 345-5080

17.7 City Fire Departments

Agency	Description	Telephone
Woodstock Fire	General Number	(770) 926-2302

17.8 Health Care

Agency	Description	Telephone
Poison Control	General Number	(404) 230-8989
Suicide Hot Line	General Number	(770) 704-1600
Kennestone Hospital	General Number	(770) 793-5680
Northside Cherokee Hospital	General Number	(770) 720-5190
North Fulton Hospital	General Number	(770) 721-2555
Mountainside Medical Center	General Number	(706) 692-2441

17.9 Utilities

Agency	Description	Telephone
Georgia Power	General Number	(888) 891-0938
Amicalola Power	General Number	(800) 992-6471
Cobb EMC	General Number	(770) 429-3490
Sawnee EMC	General Number	(770) 887-2363
Cherokee County Water	General Number	(770) 720-6193
Canton Water	General Number	(770) 479-2392
Atlanta Gas Light	General Number	(800) 289-8151
Comcast Cable	General Number	(800) 266-2278
Windstream Telephone	General Number	(800) 800-6609

18 Appendix G – Common RF connectors

Some of the most common RF coax connectors are illustrated below. In most cases the 'male' connector will contain a center pin or pins and the 'female' connector will contain one or more receptacles.

Image	Designator	Description
	BNC (male)	BNC Connectors are miniature, lightweight connectors. BNC stands for Bayonet Neill Concelman and is named after Paul Neill and Carl Concelman. It features two bayonet lugs on the female connector. Be aware that the center connection is slightly different between the 50-ohm (radio) and 75 ohm (video) connectors.
	BNC (female	BNC Connectors are miniature, lightweight connectors. BNC stands for Bayonet Neill Concelman and is named after Paul Neill and Carl Concelman. It features two bayonet lugs on the female connector. Be aware that the center connection is slightly different between the 50-ohm (radio) and 75 ohm (video) connectors.
	UHF (male) PL-259	UHF Connectors were designed during the 1930s, when UHF referred to frequencies over 30 megahertz. The UHF series are general purpose connectors for use in low frequency systems from 0.6 - 300 megahertz. UHF connectors are generally usable through what is now known as the VHF and HF frequencies and can handle RF power levels over 1 KW. We do find this connector in use from HF through the 70-centimeter (440 MHz) bands.
	UHF (female) SO-259	UHF Connectors were designed during the 1930s, when UHF referred to frequencies over 30 megahertz. The UHF series are general purpose connectors for use in low frequency systems from 0.6 - 300 megahertz. UHF connectors are generally usable through what is now known as the VHF and HF frequencies and can handle RF power levels over 1 KW. We do find this connector in use from HF through the 70-centimeter (440 MHz) bands.
	N (male)	N connectors are one of the first connectors that could carry microwave frequency signals. This connector is named after Paul Neill of Bell Labs who invented it in 1940s. Originally designed for up to 1 GHz signals, it can now handle up to 11 GHz. The male connector is hand tightened and has an air gap between the center and outer conductors. The N connector conforms to MIL-C-39012 standards.
	N (female)	N connectors are one of the first connectors that could carry microwave frequency signals. This connector is named after Paul Neill of Bell Labs who invented it in 1940s. Originally designed for up to 1 GHz signals, it can now handle up to 11 GHz. The male connector is hand tightened and has an air gap between the center and outer conductors. The N connector conforms to MIL-C-39012 standards.
	SMA (male)	SMA Connectors are miniature connectors for RF applications from DC up to 18 GHz or higher. SMA is an acronym for SubMiniature version A and was developed in the 1960's. It uses a threaded interface. The main features are higher mechanical strength, high durability and low VSWR.

Image	Designator	Description
	SMA (female)	SMA Connectors are miniature connectors for RF applications from DC up to 18 GHz or higher. SMA is an acronym for SubMiniature version A and was developed in the 1960's. It uses a threaded interface. The main features are higher mechanical strength, high durability and low VSWR.
	TNC (male)	TNC connectors are a threaded version of the BNC Connectors. TNC stands for Threaded Neill Concelman. It has an impedance of 50Ω and operates best in the 0–11 GHz frequency spectrum. It has better performance than the BNC connector at Microwave frequencies. TNC connector was invented in the late 1950s and named after Paul Neill and Carl Concelman. TNC are miniature, threaded weatherproof connectors.
	TNC (female)	TNC connectors are a threaded version of the BNC Connectors. TNC stands for Threaded Neill Concelman. It has an impedance of 50Ω and operates best in the 0–11 GHz frequency spectrum. It has better performance than the BNC connector at Microwave frequencies. TNC connector was invented in the late 1950s and named after Paul Neill and Carl Concelman. TNC are miniature, threaded weatherproof connectors.
	SMB Jack (male)	SMB Connectors are a smaller version of the SMA with snap-on coupling. The SMB is an acronym for SubMiniature version B. The SMB connector was developed in the 1960's. It provides broadband capability from DC to 4 GHz.
	SMB Plug (female)	SMB Connectors are a smaller version of the SMA with snap-on coupling. The SMB is an acronym for SubMiniature version B. The SMB connector was developed in the 1960's. It provides broadband capability from DC to 4 GHz.

19 Appendix I – FCC Rules on Emergency Communications

The material in this section comes from ARECC EC003, Learning Unit 21.

19.1 Safety of Life and Property

First and foremost, in a situation involving the immediate safety of life and/or the immediate protection of property, and where no normal means of communication are available, the rules permit amateurs to use any means to send essential information [§97.403]. This rule is straightforward and needs little interpretation. If someone's life or property is immediately threatened and no telephone is available, the last thing you want to do is waste precious time worrying about government regulations. But, be prepared in the aftermath of an incident to justify your action in a possible FCC or local law enforcement inquiry. If other means of communication such as an emergency call box telephone or public communication system are available, they should be used first, before “anything goes”.

19.2 Stations in Distress

Another FCC rule states that “an amateur station in distress (is not prohibited from using) any means at its disposal to attract attention, make known its condition and location, and obtain assistance” [§97.405(a)]. Also, it states that an amateur station may use any means of radio communication at its disposal to assist another station in distress.

19.3 Disaster Communications

The rules say “When normal communication systems are overloaded, damaged or disrupted because a disaster has occurred, or is likely to occur, . . . an amateur station may make transmissions necessary to meet essential communication needs and facilitate relief actions” [§97.401(a)]. This rule is also straightforward: the FCC encourages the use of Amateur Radio for disaster communications.

19.4 Emergency Declarations

If a disaster disrupts normal communication, the District Director of the FCC Field Office for the area may restrict certain frequencies for use by stations assisting the stricken area only. All amateur transmissions with, or within, the designated area conducted on the FCC-designated emergency frequencies must pertain directly to relief work, emergency service or the establishment and maintenance of efficient networks for handling emergency traffic. If warranted, the FCC will declare a communications emergency. This usually happens several times each year, generally in connection with a severe hurricane, earthquake or other major event. The FCC may also set forth further special conditions and rules during the communication emergency. Only the FCC or its authorized representative can lift the conditions. Authorized amateurs desiring a declaration of a communication emergency should contact the FCC DD of the area concerned [§97.401(c)].

A word of caution about requesting a declaration by the FCC: the rules suggest that such protective declarations are intended to prevent or alleviate interference to emergency communications. If no interference is likely to occur, don't waste the FCC's time with a request for protection.

19.5 Confusion over "Business Communications"

When a large California forest was destroyed by wildfire, causing the evacuation of tens of thousands of mountain residents, hundreds of ham operators provided support communication for the US Forest Service, the California Department of Forestry, the American Red Cross and other relief agencies. This was a widespread emergency and normal fire and rescue channels were overloaded. Amateurs were called to provide assistance. Once the fires were out, several hams were asking, were we legal.

Of course, they were legal, under both §97.401(a) and §97.403 discussed above. The fact that this question was asked at all, under these circumstances, illustrates the confusing interpretations of the FCC rules within the amateur fraternity. As ARES and/or RACES leaders, you need to discuss these issues with your members as part of your planning efforts.

The confusion stemmed from some old FCC rules. Around 1970, when amateur repeaters first became popular, concerns about possible abuses by non-amateur and business interests led the FCC to prohibit amateur communications “to facilitate the business or commercial affairs of any party” or “as an alternative to other authorized radio services”.

Over time, the interpretations of these rules became progressively more literal until they had a chilling effect even on meritorious public service activities. Something had to be done to put things back on track.

In 1993, the FCC dropped the rather broad no business language, and replaced it with a more specific prohibition on communications for compensation, on behalf of one’s employer, or in which the amateur has a financial interest [§97.113(a)(2)(3)]. In place of the flat prohibition on providing an alternative to other radio services is a less restrictive one against doing so on a regular basis [§97.113(a)(5)]. These changes meant a great deal for public service-oriented amateurs. They removed the ambiguities that plagued amateur public-service communications for years and silenced the endless hair-splitting discussions about whether particular communications were permitted.

The focus now is on whether the amateur, or his or her employer, stands to benefit financially, rather than on the content of the communication. If so, then the communication is still prohibited. If not, then the remaining question is whether the communications need is one that ought to be met by some other radio service. Here, the rule of reason applies. Amateur Radio should not meet a need that arises on a regular basis, and for which other communications services are reasonably available. The FCC declined to define “regular”, but this shouldn't pose much of a problem for us since abuses will tend to be self-limiting.

Volunteers don't like being taken advantage of, and if they are, they should just say no. One popular activity, for which there is no practical communication alternative available, collecting data for the National Weather Service, was singled out by the FCC as an example of what is permitted under the new rules. The new rules do not represent a philosophical departure from our roots. In fact, they are almost identical to the regulations in effect prior to the no business communications rule. They provide latitude in our operating and especially in our public service communications, just as we had for decades before the onset of over-regulation in the early '70s. This is one of those rare times when we get to return to the good old days.

For a more general discussion of the business rules, see Chapter 2 of the ARRL's The FCC Rule Book.

19.6 Tactical Call Signs

Tactical call signs are often adopted during an emergency, or during large public-service activities.

Names like “Med Tent”, “Fire 1”, “Shelter 2” and “Red Cross Staging” quickly identifies each function and eliminates confusion when working with other agencies for which amateur call signs are meaningless. They also help prevent confusion when several operators may take turns at a position.

The use of tactical call signs is a good idea, but it in no way relieves you of the obligation to identify your operation under the FCC's Rules for normal station identification. You must still give your FCC assigned call sign at the end of your communication, and at least every 10 minutes during the contact [§97.119].

19.7 Working with the Broadcast Media

In a disaster situation where the immediate safety of lives or property is at stake, Amateurs may provide related communications to the broadcasters for dissemination to the public when no other means of communication is available. Otherwise, under normal conditions, Amateurs are prohibited from assisting in program production or newsgathering. [§97.113(b)]

19.8 Other Emergency-Related Transmissions

Amateurs may exchange messages with stations in other FCC radio services for emergency communications. [§97.111(a) (2)]

- Amateurs may make one-way transmissions for emergency communications [§97.111(b) (4)]. Generally, one-way transmissions are prohibited except for certain limited circumstances.
- Amateurs may also send one-way information bulletins, as long as they are directed to Amateurs only, with information of interest to Amateurs only. [§97.111(b) (6); 97.3(a) (25)] A good example would be a bulletin on the ARES net to ARES members during an emergency deployment.

19.9 Allowing Critical Responders to Speak Directly Over the Radio

During a Florida hurricane disaster a few years ago, a serious accident at a rural site brought an ARES response. A paramedic was already administering first aid. Because of the extent of the injuries, the paramedic asked to confer with a physician who happened to be in the vicinity of the amateur net control station at a hospital 10 miles away.

Strangely, the net control operator refused to allow the physician to speak directly over the radio. In spite of complicated medical terminology and the potential for mistakes, the net control operator insisted on verbally relaying each message. The control operator questioned whether it would be legal for the paramedic to speak directly with the physician.

Not only would this have been legal as communications in connection with the immediate safety of human life when normal communication systems are not available, but it would also have been permitted under normal circumstances by the third-party traffic rules as long as the control operators continuously monitored and supervised the doctor's and paramedic's participation. [§97.115(b) (1)] In this case, the ARES operators should have immediately handed over their microphones to the physician and paramedic.

20 Appendix J – Internet Resources

20.1 Weather

http://www.srh.noaa.gov/ffc/html/power.php
Power Page – National Weather Service, Peachtree City

http://www.accuweather.com/en/us/canton-ga/30115/weather-forecast/12856_pc
AccuWeather.com for Canton, GA

http://www.wunderground.com/cgi-bin/findweather/hdfForecast?query=30115
Weather Underground for Canton, GA

http://www.wunderground.com/wundermap/
Weather Underground WonderMap

http://www.intellicast.com/Local/Weather.aspx?location=USGA0093

Intellicast.com for Canton, GA

http://www.weather.com/weather/today/Canton+GA+USGA0093:1:US
The Weather Channel for Canton, GA

http://www.wsbtv.com/s/weather/
WSB-TV (Channel 2, Atlanta, GA) Weather

http://www.myfoxatlanta.com/weather
WAGA-TV Fox 5(Channel 5, Atlanta, GA) Weather

http://www.11alive.com/weather/
WXIA-TV 11 Alive (Channel 11, Atlanta, GA) Weather

http://www.cbsatlanta.com/weather

WGCL-TV CBS Atlanta (Channel 46, Atlanta, GA) Weather

21 Appendix K - Forms

This section contains a number of forms that will be useful during an emergency event. They can be printed out and modified as needed. These forms will also be available on CC-ARES web site.

21.1 ICF Forms Listing

The following is a list of the common FEMA recommended ICS forms. We have modified some of these for Amateur Radio use.

Form #	IAR Form #	Form Title	Typically Prepared By
ICS-201		Incident Briefing	Initial Incident Commander
ICS 202		Incident Objectives	Planning Section Chief
ICS 203		Organization Assignment List	Resources Unit Leader
ICS 204		Assignment List	Resources Unit Leader & Operations Section Chief
ICS 205	**ICS 205-AR**	**Incident Radio Communications Plan**	**Communications Unit Leader**
ICS 205A		Communications List	Communications Unit Leader
ICS 206		Medical Plan	Medical Unit Leader (reviewed by Safety Officer)
ICS 207		Incident Organization Chart	Resources Unit Leader
ICS 208	**ICS 208-AR**	**Safety Message/Plan**	**Safety Officer**
ICS 209		Incident Status Summary	Situation Unit Leader
ICS 210		Resource Status Change	Communications Unit Leader
ICS 211	**ICS 211-AR**	**Incident Check-In List**	**Resources Unit/Check-In Recorder**
ICS 213	**ISC 213-AR**	**General Message**	**Any Message Originator**
ICS 214	**ICS 214-AR**	**Activity Log**	**All Sections and Units**
ICS 215		Operational Planning Worksheet	Operations Section Chief
ICS 215A		Incident Action Plan Safety Analysis	Safety Officer
ICS 217		**Communications Resource Availability WS**	**Communications Unit Leader**
ICS 218		Support Vehicle / Equipment Inventory	
ICS 219		Resource Status Card (T-Card)	Resources Unit
ICS 220		Air Operations Summary Worksheet	Operations Section Chief or Air Branch Director
ICS 221		Demobilization Check-Out	Demobilization Unit Leader
ICS 225	**ICS 225-AR**	**Incident Personnel Performance Rating**	**Supervisor at the incident**

21.2 ICS Form 205-AR, Incident Radio Communications Plan

The ICS form 205 defines the frequencies that will be used for a specific incident, sort of a quick reference sheet. This form is available here pre-populated with the standard frequencies that we use.

- Block 1 will contain the name of the incident.
- Block 2 will show the date and time the form was prepared.
- Block 3 will show the operational period that this form is valid for. Typically, this will be the whole incident, but the frequencies in use could change as the incident grows or shrinks in complexity.
- Block 4 indicates the system or cache that the frequency is typically assigned to. This would typically be the FCC band allocation for most frequencies we would use. Examples would be Amateur Radio / VHF / Analog FM or GMRS / UHF / Analog FM.
- Block 5 is the assigned channel name or number. Referring to channels with names such as TAC1 can reduce confusion especially if you may use the same frequency as a repeater output and simplex.
- Block 6 contains the function for that channel. This could be a tactical net, logistic net, damage assessment, shelter operations or other uses.
- Block 7 has the frequency information for the channel. To avoid confusion, it is best to state the transmit and receive frequencies from the perspective of a user (not the repeater). This would avoid issues if a repeater used a nonstandard split or direction. You should also indicate any CTCSS tone and if the signal is wide band or narrow band.
- Block 8 is used to capture the normal assignment of this channel. This could be the club or ARES group that normally be using it.
- Block 9 allows you to record any remarks about the channel. If it is a repeater, you can put the call and tower location here.
- Block 10 records who prepared the form. Enter your name and call here.

21.3 ICS Form 211-AR, Incident Net Check-In List

ICS form 211 is used to track people and equipment as they arrive at an incident. We have modified this form to track the net check-ins during an incident.

- Block 1 will contain the name of the incident
- Block 2 has the information about the specific net being tracked. There could be many nets going on at the same time during a large incident. Each net should keep a separate record.
- Block 3 is the date and time that the log was started. This would typically be at the start of the net or when there is a shift change. It is good practice to conduct a roll call at each shift change if traffic volume permits.
- Block 4 is the call sign of the station checking in to the net.
- Block 5 is the name of the operator checking in to the net.
- Block 6 would be the location of the station that is checking in to the net.
- Block 7 is the type of station checking in to the net. The options are B (base or fixed station), M (mobile station) and H (handheld radio).
- Block 8 is the power source of the station. The options are C (commercial power) or E (emergency power). Emergency power refers to the station having the immediate ability to use emergency power (battery, generator, etc.) even if the station is currently using commercial power. Loss of commercial power could be noted in the notes section (block 11)
- Block 9 is the time the station checked in to the net.
- Block 10 is the time the station checked out of the net.
- Block 11 is a space to record any notes such as a tactical call sign.
- Block 12 will contain the name of the Net Control Operator.
- Block 13 will contain the call sign of the Net Control Operator.
- Block 14 will contain the page number. You should number each page as it is started. Once the shift or net is concluded you can add the total number of pages.

21.4 ICS Form 213-AR, General Message

ICS for 213 is a general message form and would typically be used in place of the ARRL Radiogram form for messages sent over amateur radio under the ICS structure. You should complete the form using complete sentences, much like an email. Avoid the use of special codes or amateur radio specific language.

This form should be used for all formal traffic. Formal traffic includes the following:

- Station activation and closure
- Damage assessments
- Shelter and EOC status
- Situation updates
- Declarations
- Resource requests
- ICS facility relocations

The form should be completed as follows:

- Block 1 identifies who the message is going to (the addressee).
- Block 2 is the addressee's position or title.
- Block 3 is who originated (authored) the message. This is not necessarily the person that sent the message.
- Block 4 is the position or title of the message author.
- Block 5 will contain the subject of the message.
- Block 6 is the date the message was created.
- Block 7 is the time the message was created.
- Block 8 is the actual plain text message.
- Block 9 is the signature of the message author or the person who took the message for transmission.
- Block 10 is the position or title of the person in block 9
- Block 11 is the actual reply to the message in plain text.
- Block 12 is the signature and position (or title) of the message reply author or the person who took the message reply for transmission.
- Block 13 is the date the message reply was created.
- Block 14 is the time the message reply was created.

21.5 ARRL Standard Radiogram

The Radiogram has always been the 'gold standard' message format for Amateur Radio traffic. The form is still widely used today but is not recognized by the ICS methodology. The Radiogram is divided into 4 sections, described below.

21.5.1 Preamble

The preamble or header contains administrative information about the message.

- Message Number – a unique number assigned by the station that first puts the message into the ARRL format. These typically start at 1 and are reset daily, monthly or for each incident.
- Precedence – This is the relative urgency of this message
    - Routine (R) – normal day-to-day traffic. Most traffic goes in this category.
    - Welfare (W) – related to health and welfare traffic of individuals in a disaster area.
    - Priority (P) – Important messages that are time critical. Typically, official traffic that does not rise to the emergency level.
    - Emergency (E) – Highest priority messages having a life-or-death urgency.
- Handling Instructions (HX) – Optional field used to describe how the message should be handled for delivery.
    - HXA – Collect telephone call is authorized
    - HXB – Cancel message if not delivered within <x> hours
    - HXC – Report date and time of delivery to originating station
    - HXD – Report date and time of delivery to originating station along with ID of station that delivered the message
    - HXE – Delivering station to get and send reply from addressee
    - HXF – Hold delivery until <date>
    - HXG – Delivery by mail or telephone
- Station of Origin – Call sign of the station that first puts the message into the ARRL format.
- Check – The number of words in the text section only
- Place of Origin – Name of the community, building or agency where the message originator is located. This refers to the message author, not the station that first puts the message into the ARRL format.
- Time Filed – Optional field. Time when the message is first transmitted. Be clear if this is local or UTC time.
- Date – the date when the message was first transmitted. Make sure that it matched the time format (local or UTC), if used.

21.5.2 Address

This is generally self-explanatory. Be sure to include enough information to allow delivery of the message.

21.5.3 Message Text

This is the actual message and should be limited to 25 words or less. It should be written in lines of five words to make it easy to count.

21.5.4 Signature

The signature is the information about the sender. This could include information such as the sender's name, address and telephone number, as needed. This information is not included in the word count

21.6 ICS Form 309-AR, Communications Log

The communications log is used to keep track of all formal traffic sent from or received by a station. It is a cross-reference of the individual message forms.

- Block 1 will contain the name of the incident
- Block 2 is the date and time that the log was started. This would typically be at the start of the net or when there is a shift change
- Block 3 is the name and call sign of the station operator.
- Block 4 is the name of the operator, if different from the information in block 3.
- Block 5 is the operational period covered by this log. This could be a shift, a whole day or a whole incident. Since the date is not recorded with each message, the log should be limited to a single day.
- Block 7 contains the time when the message was sent or received. This time should match the time on the ICS 213 form.
- Block 8 is used to record the ID (call sign) of the station the message was sent to or received from.
- Block 9 is the message subject. Since the ICS 213 form does not have a message number, the subject is used as the message identifier (along with the date and time. The subject should match the ICS 213 form subject.

21.7 FSD-98 CC-ARES Registration Form

This form is used to register with the Cherokee County ARES group. Submit to your EC or designated AEC to register or if any of your information changes.

Sample Forms

This section contains the sample forms described above. Copies of the forms may be downloaded from the CC-ARES web site® (http://www.cherokee-ares.org).

21.7.1 Cherokee County GA ARES Communications Plan, 205-AR (Blank)

Incident Radio Communications Plan	1. Incident Name	2. Date / Time Prepared	3. Operational Period Date/Time

4. Basic Radio Channel Utilization

4. System/Cache	5. Chan	6. Function	7. Frequency			8. Assignment	9. Remarks
			Receive	Transmit	Tone		

10. Prepared by (Communications Unit)

21.7.2 Cherokee County GA ARES Incident Net Check-In List, 211-AR

1. Incident Name	2. Net Name/ Frequency or Chan	3. Start Date/Time

Check-In Information

4. Call Sign	5. Name	6. Location	7. Station Type			8. Power		9. Time In	10. Time Out	11. Notes
			B	M	H	C	E			

12. Net Control Operator	13. NCS Call Sign	14. Page		of	

21.7.3 Cherokee County GA ARES General Message, 213-AR

General Message		
1. To:	2. Position:	
3. From:	4. Position:	
5. Subject:	6: Date:	7: Time
8. Message:		
9. Signature:	10. Position:	
11. Reply:		
12. Signature/Position:	13. Date	14. Time

21.7.4 Standard ARRL Radiogram Form

The American Radio Relay League

RADIOGRAM

Via Amateur Radio

Number	Precedence	HX	Station of Origin	Check	Place of Origin	Time Filed	Date

To	**This Radio Message Was Received At**
Name	Amateur Station
Telephone	Telephone
Address	Name
Address	Address
City, State, Zip	City, State, Zip

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.

21.7.5 Cherokee County GA ARES Communications Log, 309-AR

Communications Log **ICS 309-AR**	1. INCIDENT NAME	2. DATE AND TIME PREPARED
3. UNIT NAME/STATION I.D.	4. RADIO OPERATOR	5. OPERATIONAL PERIOD

LOG			
6. TIME	7. STATION I.D.		8. SUBJECT
	RECEIVED FROM	SENT TO	
9. PAGE OF		10. PREPARED BY	

21.7.6 CC-ARES Registration Form

Cherokee County
Amateur Radio Emergency Service@

ARES Registration Form

Name:	
Call Sign:	
Mailing Address:	
City, State, ZIP code:	
Grid Square:	
E-mail address:	
Home phone number:	
Work phone number:	
Ham Shack Hotline	
Cell phone number:	
License Class: Tech, Gen, Extra	
License Expiration:	

MODE	80M	40M	20M	IOM	6M	2M	1.25M	.70CM	900Mhz	1.2 Ghz
SSB										
CW										
FM										
Digital Modes										
PACKET										
Other modes (specify)										
Winlink										
D-Star										
"Go Box"										
Portable HT										
Mobile										
Home										

Can your home station be operated without commercial power? Yes [ ] No [ ]

May we include your contact information in our membership listings? Yes [ ] No [ ]

Signature _____ Date _____

(your typed name will serve as signature)

Contact: Rob Bruderer, Emergency Coordinator-Cherokee County ARES at WIJKU@ARRL.NET
Information on this document will not be released to anyone without your permission as indicated above. Learn about ARRL-sponsored Amateur Radio Emergency Communications Courses: http://www.arrl.org/cce/

CC ARES FSD-98 12/2021

22 References

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