



Westchester  
gov.com



# WESTCHESTER COUNTY ARES-RACES

## HANDBOOK

DRAFT Version 1 2019-05-01

## Table of Contents

What Ham Radio Operators Do in Emergencies.....	2
What are ARES and RACES? .....	2
ARES - The Amateur Radio Emergency Service.....	2
RACES - The Radio Amateur Civil Emergency Service .....	3
ARES & RACES in Westchester County.....	3
How To Join Westchester ARES/RACES .....	3
How an Organization or Agency Can Request ARES/RACES Services .....	3
Information for Members .....	4
Required Equipment .....	4
Optional Equipment.....	4
Group Activation .....	5
Internet Mailing List.....	5
Certification and Training .....	5
BASIC COMMUNICATOR .....	7
INTERMEDIATE COMMUNICATOR .....	7
ADVANCED COMMUNICATOR .....	7
A Go Bag Checklist .....	8
Types of Assignments .....	8
Types of Go Bags.....	8
Bibliography .....	10

## What Amateur Radio Operators Do in Emergencies

Depending on the nature of the emergency, hams volunteer to perform a number of functions:

- They "shadow" government and agency officials. Shadows ride "shotgun" in officials' vehicles, follow them on foot and keep them in touch, typically via VHF/UHF repeater systems.
- They set up and operate base stations at shelters, command posts, emergency operations centers, agency headquarters, hospitals, and the like, providing communications among the various agencies and their officials out in the field (who are being shadowed by a ham).
- They operate in local, regional, and national *traffic nets* which move information in the form of "radiograms" into and out of disaster areas.
- Besides voice communications, they use digital communications to move data about victims, supplies, etc. accurately by radio; use Amateur TV to provide live video imagery to aid in damage assessment and recovery; and save the world from alien invaders with the Morse Code (just kidding).
- They remain flexible and adapt to changing circumstances as needed, always carrying a large "bag of tricks" (Go Bag aka Jump Bag).

Hams have been providing these types of services to the public since 1913. Emergency communications is the first of the founding tenets of the Amateur Radio Service as codified in [the FCC rules](#)<sup>1</sup>.

## What are ARES and RACES?

The Amateur Radio Emergency Service (ARES) and the Radio Amateur Civil Emergency Service (RACES) both have very similar goals: to protect life and property during an emergency. Following is a brief description of ARES and RACES that outlines the technical and legal differences between the two services. For more detailed information, see the [Amateur Radio Public Service Handbook](#)<sup>1</sup>.

## ARES - The Amateur Radio Emergency Service

The American Radio Relay League (ARRL) administers the ARES program. ARES provides emergency radio communications to a number of client groups, including local government, the American Red Cross, the Salvation Army, and others. ARES is organized at the County level with a strong nationwide mutual aid system.

Membership in the ARRL or any other organization is not required to participate in ARES. The only requirement is a valid Amateur Radio License of Technician or higher class.

Members are registered in the ARRL ARES Connect system which lists the member's education, training and experience.

---

<sup>1</sup> See Bibliography for links to external documents

## **RACES - The Radio Amateur Civil Emergency Service**

RACES is authorized by part 97 of the [FCC Rules](#)<sup>1</sup>. RACES is sponsored by a local, county or state government -- there is no Federal RACES. Amateur radio stations operating under RACES rules may only communicate with other RACES stations, and only for the purpose of conveying official civil-preparedness emergency communications. RACES drills and practice sessions are strictly limited.

Only the RACES Radio Officer (or designate) of a government civil preparedness agency can activate RACES in times of emergency. RACES may be activated for emergencies which can include natural or technological disasters such as fires, floods, earthquakes, chemical spills, and nuclear power plant accidents. During times of war (when the President invokes War Emergency Powers), normal Amateur Radio Service operation is silenced and RACES stations are limited to a pre-defined set of operating frequencies that are within the normal Amateur bands.

[The Federal Emergency Management Agency \(FEMA\)](#)<sup>1</sup> may provide funds to support a local, county or state government's use of RACES.

## **ARES & RACES in Westchester County**

In Westchester County ARES and RACES is organized as a single group of people with a common management structure. Known as the Westchester County ARES-RACES Group (WCARG), it is authorized by and reports to the [Westchester County Department of Emergency Services \(DES\)](#)<sup>1</sup>. DES provides equipment and services to the Group and coordinates the organization and training of the volunteer Amateur Radio operators who have registered their willingness to serve.

The Westchester County ARES-RACES Group acknowledges a close relationship with the [Westchester Emergency Communications Association \(WECA\)](#), which is an ARRL Special Service Club. WECA provides Amateur Radio facilities (fixed and portable repeaters, digipeaters, and other communications resources) that help to maintain the Westchester County ARES-RACES Group at a constant state of readiness for use when needed in an emergency.

Other Amateur Radio organizations in Westchester County also contribute to the readiness and operation of the Westchester County ARES-RACES Group. The Group does not require membership in any other organization.

## **How To Join The Westchester ARES-RACES Group**

If you are a licensed Amateur Radio operator, live or work in Westchester County, and are interested in becoming an ARES-RACES volunteer, please send email to [EC-RO@weca.org](mailto:EC-RO@weca.org).

## **How an Organization or Agency Can Request ARES and RACES Services**

If your organization's public service or emergency preparedness planning includes the need for Amateur Radio communications, please send email to [EC-RO@weca.org](mailto:EC-RO@weca.org).

## **Information for Members**

### **Required Equipment**

The **minimum required equipment** for effective ARES and RACES participation is a 2 meter (144-148 MHz) transceiver capable of repeater operation with sub-audible tones (CTCSS). It is preferred that the radio also be equipped for operation in the 70 Centimeter band (440-450 MHz) with the same repeater and tone capability.

To be effective in the field, you need to be able to transport your transceiver, so a handheld (HT) or mobile rig (or both) are a must. In either case, you need to be able to operate your rig in somebody else's vehicle (a served agency's car or truck). You will need a power source, preferably both batteries and a cigarette lighter plug adaptor. Additionally, alligator clip battery leads may be needed on occasions when a vehicle lacks a cigarette lighter receptacle. Be sure in these cases that the vehicle has a 12V battery and get the polarity right -- some government vehicles, especially those used by military units, have positive ground and/or 24V batteries.

### **Optional Equipment**

Additional optional equipment that may be used by ARES-RACES includes transceivers that operate in the 1.25 meter band (222-225 MHz band).

Also important are separate transceivers capable of Single Side Band (SSB) operation in the HF bands of 80 through 10 meters. Being able to set up a portable emergency-powered HF station is a desirable capability.

The ability to use 1200-baud packet is another plus. The RACES Communications Truck is equipped with a packet station as is the Westchester County Emergency Operations Center (EOC). Some members have portable and/or mobile packet stations with laptop computers. A special form of packet radio is the use of Amateur Position Reporting System (APRS). The group uses this system during drills and emergency responses to track personnel and vehicles.

A complete list of equipment and supplies for a Go Bag is included at the end of this document. All members are encouraged to assemble a Go Bag.

## Group Activation

The Westchester County ARES-RACES Group is activated by the Westchester Emergency Coordinator (EC) or a designate through the use of email messages sent through ARES Connect system and by telephone through the Emergency Notification System (ENS). Both methods are kept current by information provided by members to the [ARES Connect<sup>1</sup>](#) web site.

All members are requested to keep their information current.

## Routine Events and Drills

For routine drills and public service events the group will be notified in advance via email. The ARES Connect system will be used to register communicators for the event.

## Emergency Response

When an emergency response activation is received, members should check in to the ARES-RACES net on the WB2ZII 2 meter repeater (147.060 MHz, +600kHz offset, 114.8Hz tone) as soon as possible. Check-in is requested even if you cannot participate. The Net Control Station (NCS) may ask if you are available for future shifts.

- The NCS will state what the situation is, estimated number of members needed, when and where they are needed and the duration of the event if known.
- Volunteer to serve if you are willing and able to do so. Do not feel bad about not being able to volunteer for any reason.
- Do not travel anywhere until the NCS specifically instructs you to do so.
- Find your Go Bag (it's already packed and handy, correct?)
- Verify that your family is safe and prepared to care for themselves in your absence

## Internet Mailing List

An Internet mailing list, [ares@weca.org](mailto:ares@weca.org), is used for general ARES/RACES announcements to supplement group communications. Confidential information should not be posted to this list. Please be aware that there are a number of ARES/RACES members who are not on this mailing list so do not expect that a mailing will reach everyone.

To subscribe to the list, send email to [ares-request@weca.org](mailto:ares-request@weca.org) containing the word **subscribe** in the text of the message. Your subscription request will be forwarded to the list maintainer who will add you in a few days.

## Certification and Training

The Westchester ARES-RACES Group utilizes the ARRL ARES Connect system to register, qualify, train and alert its members. There are three levels of certification in this system:

- Basic – Level I Communicator
- Intermediate – Level II Communicator
- Advanced – Level III Communicator

Members enter the system as “New Volunteers”. The Emergency Coordinator (EC) will review your application and assign the appropriate level. A member progresses through the levels, based on completing the requirements for each step as certified by the EC or designate.

### **ARES Connect Registration**

Register by going to the “ARES Connect” web site, create an account and enter all relevant information. Your application will reviewed by the EC and affiliated with the Westchester AREA-RACES Group. Initially you will be listed as a New Volunteer.

Here is the procedure for registering:

1. Go to the ARES Connect web page: <http://vhub.at/aresconnect/lp/eny>
2. Click on CREATE ACCOUNT
3. Your Username is your call sign IN ALL CAPS PLEASE
4. Your password is of your own choosing and is case sensitive. Please remember it.
5. When asked for your County, indicate Westchester.

You will be asked to declare what formal training you have in ICS and NIMS courses. Answer what you know you have taken. Certificates are not required now but may be requested in the future. You may return to your account at any time to revise the information.

## Level I BASIC COMMUNICATOR

EDUCATION	PROFIENCY/SKILL	PARTICIPATION
Required: <ul style="list-style-type: none"> <li>• ICS 100 &amp; 200</li> <li>• IS 700, 800</li> </ul>	Required: <ul style="list-style-type: none"> <li>• FCC license Technician or higher</li> <li>• Ability to program frequency, offset &amp; tone in a radio</li> </ul>	Required: <ul style="list-style-type: none"> <li>• Join ARES group</li> <li>• Register in ARES Connect</li> </ul>
Optional: <ul style="list-style-type: none"> <li>• SKYWARN training</li> </ul>		

## Level II INTERMEDIATE COMMUNICATOR

EDUCATION	PROFIENCY/SKILL	PARTICIPATION
Required: <ul style="list-style-type: none"> <li>• Complete Level I COMMUNICATOR</li> <li>• ARRL EC-001 Course</li> <li>• SKYWARN training</li> </ul>	Required: <ul style="list-style-type: none"> <li>• Write &amp; Send ICS-213 Message</li> <li>• Ability to build a dipole or J-pole antenna</li> <li>• Assemble 24 hour Go Kit</li> <li>• Ability to assemble a PL259 connector cable</li> <li>• Ability to assemble a Powerpole adapter cable</li> </ul>	Required: <ul style="list-style-type: none"> <li>• Net Participation at least quarterly</li> <li>• Serve as a Net Control Station</li> </ul>
Optional: <ul style="list-style-type: none"> <li>• General Class License (or higher)</li> </ul>	Optional: <ul style="list-style-type: none"> <li>• Operate a VHF NBEMS Station</li> </ul>	Optional: <ul style="list-style-type: none"> <li>• Public Service Event Participation annually</li> <li>• Simulated Emergency Test or Exercise</li> </ul>

## Level III ADVANCED COMMUNICATOR

EDUCATION	PROFIENCY/SKILL	PARTICIPATION
Required: <ul style="list-style-type: none"> <li>• Complete Level II COMMUNICATOR</li> <li>• IS 120, 230, 240, 241, 242, 244, 288, 802, 240.b, 288.a</li> <li>• Skywarn Spotter Training (within 2 years)</li> <li>• ARRL EC-016 course</li> </ul>	Required: <ul style="list-style-type: none"> <li>• Proficient in ICS Forms</li> <li>• FCC General Class or higher</li> <li>• 72/120 hour Go Kit</li> </ul>	Required: <ul style="list-style-type: none"> <li>• Controlled Net Participation quarterly</li> <li>• Public Service Event Participation at least annually</li> <li>• Simulated Emergency Test or Exercise annually</li> <li>• Serve as Net Control at least quarterly</li> <li>• Present a training session</li> <li>• Participate in PIO activities</li> </ul>
Optional: <ul style="list-style-type: none"> <li>• ICS 300 &amp; 400</li> <li>• IS-1, 250</li> <li>• PR-101(EC-015)</li> <li>• AUXCOM</li> </ul>	Optional: <ul style="list-style-type: none"> <li>• Demonstrate cross-band repeat</li> <li>• Winlink VHF/UHF &amp; HF</li> <li>• FLDIGI Proficiency</li> <li>• Assemble a 72/120 hour kit</li> </ul>	Optional: <ul style="list-style-type: none"> <li>• Hold or have held an ARRL leadership position</li> <li>• ARESMAT Deployment</li> </ul>

## **Go Bag Checklist CONTINUE HERE**

A *Go Bag* is a bag or box of stuff you need to bring with you on a public service event, preparedness drill or emergency response. It is a good idea to plan what should go in your Go Bag well in advance and to make notes at each drill or response of what items were missing or were not necessary.

### **Types of Assignments**

Typical assignments for ARES/RACES operators include:

1. Shadow for an official on foot and/or in the official's vehicle.
2. Portable base station at a rest stop, checkpoint or inside a building or tent.
3. Fixed base station in a shelter, building or an EOC.
4. Mobile in your own vehicle.
5. At your home station.

### **Types of Go Bags**

A main concern of a Go Bag is convenience. You don't want a bag that is so heavy that it is impossible to lug with you. You might want to consider dividing your Go Bag into several bags:

1. Items to carry on your person at all times.
2. Items to carry in a back pack for use in vehicles other than your own.
3. Items to carry in a travel case in the trunk of your car.

A useful technique when developing your own Go Bag inventory is to make a chart that lists all the items you might carry and their location. This way, you have a convenient inventory of all of your items and a record of the location simply by changing the checkmarks.

Items you tend to use at the same time are grouped together, even though they may belong in different bags.

Don't just put radio gadgets in your Go Bag. You need to account for your personal health and safety as well.

Thinking about how and where you may have to operate should help you develop your Go Bag list. One important thing to remember is that you are likely to change assignments during a deployment. Don't plan yourself into a corner, for example, by assuming since you are assigned to the EOC, you don't need to bring your radio and batteries.

Following is a list of suggested Go Bag items developed through our group's collective experience and reference materials published by:

- Westchester County Department of Emergency Services
- ARRL (ARRL Field Resources Manual, Operating Manual)
- FEMA (Self-Study Courses: Emergency Preparedness USA, Radiological Emergency Response, etc.)
- American Red Cross (Community First Aid and Safety Course, disaster preparedness brochures)
- The National Weather Service.

**Use this list as a guide to develop your own Go Bag(s)**

Equipment (Updated 2018-09-18)	Self	Back Pack	Trunk	Your Inventory
144/440 MHz handheld radio	X			
ARES/RACES Vest, soft hat	X			
FCC license	X			
Gloves	X			
Headphones or headset (ear covering type)	X			
Safety Glasses	X			
ARES Field Resources Manual		X		
ARES/RACES Hard Hat		X		
Battery pack for handheld (rechargeable or alkaline)		X		
Compass		X		
Flashlight		X		
NTS message forms		X		
Paper/pens/pencils		X		
Radio manuals		X		
Reading material to pass the time		X		
RF adapters (BNC/SMA/UHF)		X		
Tape (duct, electrical, painter's)		X		
Tool kit (pocket knife, leatherman, hand tools)		X		
Your Go Bag checklist!		X		
144/440 MHz mobile radio			X	
220 MHz and HF radios			X	
AC power supply			X	
Antennas (Twin lead J-Pole, mag mount, portable beam)			X	
Batteries (alkaline, gel cell, sealed lead acid)			X	
Battery charger(s)			X	
Broadcast/weather band radio.			X	
Cigarette lighter adapter with splitter			X	
Clothing appropriate for the weather			X	
Coax cables 10 & 50 feet RG-58 or 8X w/connectors			X	
DC-AC power inverter			X	
Fire extinguisher			X	
First aid kit			X	
Food (snacks, meals as needed for assignment)			X	
Fuses for your equipment			X	
GPS Device			X	
Hand tools			X	
Jumper cables			X	
Maps (paper or electronic)			X	
Packet TNC & computer			X	
Repeater directory			X	
Travel alarm clock			X	
Water (1 gal/day)			X	
Ziploc bags			X	

## Bibliography

The following are a few references you might want to look at.

- [Part 97](#) of the FCC Rules (part of Title 47 of the US Code of Federal Regulations) authorizes the Amateur Radio, Amateur Satellite and Radio Amateur Emergency Services.
- [ARES Field Resources Manual](#) ([PDF download](#)). Hardcopy is available from the ARRL catalog sales department as well as from most amateur radio booksellers. It is a reference for amateurs deployed in the field for emergency services work, primarily through the Amateur Radio Emergency Service® (ARES®). It provides basic program information, forms, operating aids, and templates to be customized for the local area to include reference information such as important phone numbers, emergency frequencies, maps, organizational details, and more.
- [ARRL Emergency Communications](#) is available from the ARRL catalog sales department as well as from most amateur radio booksellers. It describes the ARRL field organization which includes the Amateur Radio Emergency Service (ARES) and its relationship to RACES as well as the National Traffic System (NTS) which is used for routing formal written message traffic via the airwaves (Radiograms).
- [ARRL Operating Manual](#) is available from the ARRL catalog sales department as well as from most amateur radio booksellers. It covers many aspects of amateur radio including emergency communications.