



New York City RACES
(Radio Amateur Civil Emergency Service)
Emergency Response Manual

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PART ONE

1-1 Introduction:

While I believe this manual is most sufficient to educate a RACES Emergency Responder of his/her basic function and purpose, it is not intended to replace or in any way override the good judgment of a well trained, experienced amateur radio operator. In either case the NYC-RACES Emergency Response Manual should supply you with the information you need to succeed as a RACES Emergency Responder.

This Emergency Response Manual is divided up into two major sections. The first half of the manual introduces what NYC-RACES is, how the organization is structured, and how the organization functions, i.e. how we do our thing. In this vein the topics covered include items such as how to handle traffic, what equipment you should set aside for emergencies, etc. After you complete the first half of the manual you should have the basic information you need to participate in a RACES function.

The second half of the manual is intended as a quick reference for each of the possible assignments you might encounter while working with NYC-RACES. This section is organized by activity to allow you to quickly locate information concerning a specific assignment. Information covered in each of these descriptions includes the type of traffic you can expect to see, special equipment needed, special training requirements, and safety considerations.

1-2 What is RACES

RACES, the Radio Amateur Civil Emergency Service, is administered by the Federal Emergency Management Agency (FEMA), and is part of the Amateur Radio Service that provides communications for civil preparedness purposes only, during periods of local, regional or national civil emergencies. These emergencies are not limited to war-related activities, but can include natural disasters such as fires, floods and earthquakes.

As defined in the rules, RACES is a radio communications service, conducted by volunteer licensed amateurs, and designed to provide emergency communications to local or state civil-preparedness agencies. It is important to note that RACES operation is authorized by the FCC at the request of a city, state or federal official, and this operation is strictly limited to official civil-preparedness activity in the event of an emergency communications situation.

Amateurs operating in a local RACES organization must be officially enrolled in that local civil-preparedness group. RACES operation is conducted by amateurs using their own primary station license. The FCC no longer issues new RACES (WC prefix) station call signs. Operator privileges in RACES are dependent upon, and identical to, those for the class of license held in the Amateur Radio Service. All of the authorized frequencies and emissions allocated to the Amateur Radio Service are also available to RACES on a shared basis. But in the event that the President invokes his War Emergency Powers, amateurs involved with RACES would be limited to certain specific frequencies while all other amateur operations would be silenced.

While RACES was originally based on potential use for wartime, it has evolved over the years to encompass all types of emergencies. When operating in a RACES capacity, RACES stations and amateurs registered in the local RACES organization may not communicate with amateurs NOT operating in a RACES capacity. Only civil preparedness communications can be transmitted.

All those who join NYC-RACES will be considered as “Probationary” members during their first year. Only those who have completed their first year of book and field training will be full NYC-RACES members.

1-3 RACES Organization

RACES is a voluntary radio communications service that is coordinated by the Federal Emergency Management Administration and is locally organized to support any NYC agency that requires our services. Within the local organization there is a leadership corps of people who contribute their time and talents to making the RACES program a success. Below the NYC Citywide Radio Officer (CRO) is a group of boro Radio Officers (RO) appointed by the CRO to be responsible at the boro/multi-boro level. Each RO is tasked with training the RACES personnel in that boro, act as a local liaison to any boro CERT group and to other government agencies/disaster relief organizations/hospitals as the CRO deems appropriate.

1-4 Duties of the Citywide Radio Officer (CRO)

Since RACES tries to match itself to the agencies we serve, our appointment structure matches the political lay of the land. The CRO is charged with coordinating the RACES program at the multi-county level (like New York City). As a manager this involves:

- a) Acting as the liaison to all served agencies within the boros that NYC-RACES serves, such as any NYC agency, Red Cross, Salvation Army, local hospitals, CERT Groups, etc.
- b) Coordinate the training, organization and emergency participation of Radio Officers in the City. This includes organizing the Citywide Simulated Emergency Test (SET) every year.
- c) Coordinate the interrelationship between local emergency plans such as frequency coordination.
- d) Make all RO and OES appointments or cancellations.
- e) Coordinate the reporting and documenting of all RACES activities received from the ROs in the City.
- f) Coordinate the support of public service activities for local charitable groups, etc.
- g) Conduct the annual Citywide meeting every December
- h) Conduct periodic Citywide Staff meetings for ROs and OESs
- i) Maintain the NYC-RACES website, mailing lists, membership roster and training schedules

A CRO also has a complex and varied role to play in any actual RACES operation such as:

- a) Making decisions concerning the allotment of available amateurs and equipment during a citywide emergency.
- b) Provide direction in the routing and handling of emergency communications of either a formal or tactical nature.
- c) Coordinate with all served agencies to determine their respective needs.
- d) General problem solver!

All of these are activities that must essentially remain in effect around the clock during extended RACES operations. No one person can be available 24 hours a day thus the CRO may appoint assistants to act in the CRO's place when the CRO isn't directly available. The assistant may be any trained individual that the CRO feels is qualified to handle the function. This person carries the same load as the CRO during their respective shift and should be given all possible cooperation.

1-5 Duties of the Boro Radio Officer (RO)

Within NYC-RACES the Radio Officer (RO) is the front line manager of a boro RACES team. Ideally each boro is assigned an RO; though sometimes multiple boros may share an RO. This person is responsible for:

- a) Recruit, manage and coordinate the training, organization, and emergency participation of interested amateurs within their boros following the Citywide guidelines.
- b) Establish an emergency communications plan for the boro in coordination with the CRO for support of any agency/agencies.
- c) Establish local communications networks run on a regular basis and periodically test those networks by conducting realistic drills such as the Citywide Simulated Emergency Test (SET).
- d) In times of disaster evaluate the communications needs of the boro and respond quickly to these needs. The RO will assume responsibility for emergency response and performance within the boro under the authority and direction of the CRO.
- e) Submit After Action Reports for activations or public service events to the CRO within three days
- f) Submit monthly RO reports showing summaries of activities and membership to the CRO by the third day of the month following via paper or email.
- g) Submit new member applications to the CRO for maintaining the NYC-RACES roster and mailing lists.
- h) Conduct monthly boro meetings from January through November.

1-6 Duties of the Official Emergency Station (OES)

- a) Maintain a higher level of preparedness (equipment & power sources) and operational knowledge than a regular member.
- b) Reports directly to the Citywide Radio Officer to fulfill Net Control readiness.

1-7 Emergency Responder's Duties:

The individual NYC-RACES team member provides emergency communications under adverse conditions. To prepare for this assignment the RACES member should attempt to avail themselves of all training opportunities, gather and prepare their equipment for extended field use, and practice traffic handling and net operations.

There is an implied commitment that a RACES team member will make himself and his equipment available during disaster situations. This is not to say that this obligation should come before work or family. Simply put, you cannot help others until your own house is in order.

1-8 Who does RACES help?

NYC-RACES serves local NYC government agencies and other organizations like hospitals, CERT groups and relief organizations who may work with these agencies. Due to these varied requirements NYC-RACES has developed a diverse set of capabilities to support our different missions.

Some of our missions might include supplementing non-government organization (NGO) communications capability by setting up a station at an Emergency Operations Center (EOC), dispatching shadows with agency VIPs, or providing communications between the EOC and various field locations such as shelters. As an example of some of the resources that have already been put in place in support of these missions, some of the hospitals already have amateur antennas in place. There is also a station set up at the Red Cross HQ.

1-9 How to Contact NYC-RACES:

As described previously, each boro has an Radio Officer who is responsible for the RACES team in his respective boro. NYC-RACES members are to check into the NYC-RACES Net conducted every Monday on the N2ROW Repeater System, 441.100/r, +5MHz, 136.5 PL at 2000hrs local time (other repeater frequencies may be found at www.n2row.net). A website dedicated to NYC-RACES and it's Boro Teams has also been set up. Log on to www.nyc-races.org to check out RACES information, event schedule, etc. Sign up to receive e-mail from the group's e-mail reflector. Bulletins, announcements and upcoming events are announced via e-mail through this server.

1-10 Types Of RACES Nets:

There are three types of nets that might be set up during a RACES event. These are the TACTICAL NET, RESOURCE NET, and the COMMAND NET. Which net, or whether all three evolve during an event is strictly determined by the size and scope of the event.

1-11 Tactical Net:

The "Tactical Net" is the "front line" net during an incident. This type of net is typically used by a single group to manage amateur radio operations within certain boundaries. There may be several tactical nets for a single operation depending on the volume of traffic. Types of traffic that might exist on this net could be anything from traffic handling to co-ordination of NYC-RACES efforts. When an event goes beyond the boundaries of a single area/agency to the point where mutual aid is necessary, it becomes necessary to create the next type of net, the "Resource Net."

1-12 Resource Net:

A "Resource Net" is primarily 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. The "Resource Net" is also used as a check-in point before an assigned responder leaves for his/her assignment. As the size of an operation increases and more boro jurisdictions become involved in the incident, a "Command Net" may become necessary. This may also be used for coordinating resources from outside of New York City.

1-13 Command Net:

The "Command Net" allows the RACES leadership to communicate with each other to resolve amateur radio operations-related problems. This is also the net that would be used to allow liaisons from the different nets to talk to each other. 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 also 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.

1-14 Being Part of a RACES Net:

Taking part in a RACES net and learning how to handle traffic are perhaps the two major skills learned as a RACES team member. Being a successful participant of a RACES net requires exercising some discipline, and observing a few basic rules of the road:

- 1) Report to the Net Control Station (NCS) promptly as soon as you arrive at your station.
- 2) Ask the NCS for permission before you use the frequency.
- 3) Only use the frequency for traffic, not for chitchat.
- 4) Answer promptly when called by the NCS.
- 5) Use tactical call signs whenever possible, if established by the NCS.
- 6) Follow the net protocol established by the NCS.
- 7) If you must leave the net, you must advise the NCS before leaving.

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:

- 1) Get the exact title/address of the addressee from the sender. This is EXTREMELY important to guarantee the accurate prompt delivery of the message.
- 2) 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 that the addressee receives an unaltered message.
- 3) Get an exact title of the sender. If a response is required, the exact name and title of the sender will become very important.
- 4) Number, log and time stamp the messages as you send them. This will allow you to reference the messages more easily later.

1-15 How to Send the Message:

Now that all the information for the message has been acquired, check into the net and ask the Net Control Station for permission to pass traffic to the destination station. After the NCS tells you to go ahead with your traffic make a directed call to the destination station. Once the destination station acknowledges your call inform the station you have traffic for them and to let you know when they are ready to copy the traffic.

When the destination station acknowledges they are ready to receive the message, begin transmission of the message by SLOWLY stating to whom the message is addressed, along with any title. Perhaps the best way to pace your transmission rate is to write down the message as you are sending it.

After you have sent the addressee's name and title, pause to ensure that the receiving station has a solid copy. The receiving station may ask you to repeat a certain word or phrase that they were not able to copy accurately.

After sending addressee header, send the main body of the message. Again...go slowly! Use phonetics to spell out difficult words as needed. Pause at the end of each sentence to give the receiving station a chance to ask you for a repeat of a word or phrase, called a "fill".

Finally, send the signature and title of the originating official. Once the receiving station has acknowledged that they have received the message correctly, pass the frequency back over to Net Control.

1-16 Alerts:

NYC-RACES begins to react ONLY when we've been alerted. Some situations are "self-alerting" like an earthquake or widespread phone outage, i.e. everyone knows it happened. However, under normal circumstances an agency will contact us by calling the NYC-RACES Citywide Radio Officer by phone or by other means (agency radio system, etc). Each of these alerting methods requires NYC-RACES to respond in a slightly different manner.

Regardless of the cause for the "sudden" emergency, the FIRST thing you should do is make sure you are secure at your own location. Once you're sure of your own situation turn your radio on and LISTEN to the NYC-RACES frequency designated by the CRO. Call net control ONLY if you have damage or injuries to report. During the initial minutes after a sudden emergency, the resource net may be trying to determine what areas are damaged, and deal with anyone that needs immediate help. Stay off the frequency and listen! Listen for a CRO/RO/OES to come up on the frequency and give instructions for your team. They will give you the necessary information to allow you to respond. Note that in a large-scale emergency, while an area some distance away may need your support, you should attempt to reach your Boro RO first.

The other major way that you will be alerted to an emergency is by receiving a phone call from another amateur via your RACES team phone tree. This may work differently in each of the boros. One system involves you simply reacting to the phone call by turning on your radio to the designated frequency and waiting for the RO give you directions, another might involve you passing the alert message to a small list of hams on your own mini phone tree before you finally turn on your radio.

If YOU are the one who first reacts to the emergency, i.e., there is no one else on the frequency, congratulations! You are now the NCS! As other hams get on the frequency, make certain they do not need emergency assistance and then see if they can stand-by to respond to help others. You will remain the NCS until relieved. Now you can see the value of availing yourself of all training opportunities, including NCS operations. You just might find yourself in the "hot-seat" one day.

1-17 How to Respond:

Now that you've received an alert the first thing you have to do is ensure your own situation before you can render aid to someone else. Check that the building you're in isn't falling around you, etc. Next take care of your own home and family.

This includes making sure that your family is ready to deal with the problems they are likely to encounter. The best way to do this is by preparation before the emergency. Talk about what you're likely to be involved with and how the family is going to deal with it. It is also important that your family be prepared and able to care for themselves in the event that you leave to help others. These factors are very important! It will be difficult to stay focused in an emergency when your mind is on what's happening at home if this hasn't been addressed in advance. Let your family know how to contact you, perhaps by phone or by contacting another ham who can contact you in case of an emergency.

Once you've decided it's OK to go, the most important aspect to consider is having food and equipment ready to go so that you're self-sufficient. Try to have sufficient supplies to last for 72 hours without outside help.

1-18 How Are You Dispatched?

There are two methods of dispatch employed by NYC-RACES. These are self-dispatch, and dispatch via assignment from the Resource net. How you are dispatched depends on the emergency plan for your area and the emergency to be addressed.

Self-Dispatching means going to a pre-assigned location after you become aware of the emergency. Your responsibility might involve heading for the local hospital, or getting to a shelter as quickly as possible. Your RO would have established your responsibilities in prior training if your area plan employs self-dispatching. Self-Dispatching has the advantage of putting trained individuals into critical spots quickly. The tradeoff for this form of dispatch is depending on specific individuals being available when the decision to activate NYC-RACES is made.

Self-dispatching DOES NOT mean heading to your position on a whim. You would respond under specific conditions, i.e. a severe earthquake occurred, or you were activated by phone tree. These conditions should be outlined by your RO.

Resource Net is the other mechanism employed by NYC-RACES for organizing man-power/hardware availability. NYC-RACES employs a single resource frequency where you can normally expect to find the net operating. The resource net's job is to recruit operators to fill job slots that have been requested for staffing by NYC-RACES.

If you are available (and trained) to fill a job that the resource net is trying to fill then simply call the Resource NCS and give NCS the information s/he asks for. Nominally the NCS will ask for your name, call-sign, and a phone number you can be reached at. A VERY important step in this process is asking NCS what special equipment/training you might need for the job you're going to fill. Please DO NOT volunteer for a job that you don't have the training/equipment for. There will normally be plenty of positions that need filling, don't put yourself at risk by stepping into a situation you're not prepared for. Resource NCS will give you a time that you need to be on station. You should also find out who you should report to when you arrive. If there are any other special instructions, or if you have questions about how to get to the assignment this is the time to ask Resource.

1-19 Responding to Your Assignment:

Before you travel to your assignment you should check in with Resource NCS and advise him/her that you are en-route to your assignment. Timely notification allows the Resource NCS to verify that all assignments are going to be filled as expected. While responding, remember that unless you have proper authorization, credentials and equipment, you are not driving an official emergency vehicle. This means that even though you are responding to an emergency you must abide by all motor vehicle traffic laws and operate your vehicle in a safe manner. You do not have permission to run red lights, speed or drive carelessly. Your RACES ID is designed to identify you as a bona-fide emergency responder and nothing more. Stickers, "Amateur Radio" placards and similar items also serve this purpose, but not in place of your ID. In the event you need to gain access to a cordoned-off area, approach the Officer on scene, present your RACES credentials (which may include the Red Cross ID card) and advise him of your reason for needing access. If granted, fine. If not, politely inform him that you will contact your 'supervisor' via radio in an attempt to get clearance. You will need the officer's name and agency he works for, as well as your exact location. Then contact the NCS and advise of your situation. The NCS will then make contact with the proper people to get you through. If everything works right, his superiors will notify the officer that you have permission.

Based on what has just been discussed, plan on arriving at your assignment at least one half hour early. You want to relieve the previous shift on time because:

- 1) You expect the next shift to relieve you on time thus you should provide the same courtesy to the person you're relieving.
- 2) You need to receive a thorough briefing from the previous shift about the duties of the position you are taking over before he has to leave.

Once you arrive at the assignment you should collect your gear and make contact with the person the Resource NCS gave you. This might be the operator you are relieving, the amateur radio liaison or a liaison officer for the agency you're helping. This contact person should be able to either brief you on the job you are going to do, or direct you to the person who can. Once you get that briefing, you're ready to go!

1-20 Minimum Equipment List:

Anytime you respond for a RACES event, whether training or the real thing, there is a minimum set of equipment you should bring with you to get the job done. These items are:

- 1) Yourself!
- 2) A 2m and/or 440 HT. In most NYC shelters you will need at least a 25w mobile rig.
- 3) A RACES ID card. You may also need your Red Cross ID card.
- 4) A 2m and/or 440 Mag-mount.
- 5) Spare batteries, sufficient coax and power supply.
- 6) An earphone.
- 7) A RACES jacket, hat, vest or other identifying article.
- 8) Appropriate clothing.

9) Paper and Pencil.

10) Your amateur license.

The majority of these items should be kept in a "Ready Box" so that all you need to do is pick up the box and you will be ready to go. You might also consider the items on the following list for inclusion in this ready box. This list is designed to allow you to stay in the field for up to 72 hours.

1-21 Extended List:

1. Radio license

2. message forms, log books, etc.

3. Toolbox (72 hours)

a. pliers

b. screwdrivers

c. socket wrenches

d. electrician's tape

e. soldering iron and solder

f. VOM

4. Radio gear

a. Rigs, i.e. other than 2m and/or 440 ht (packet station, HF/VHF/UHF mobile rig, etc.)

b. Mikes for the above radios

c. Headphones

d. Power supply

e. Extra batteries

f. Antennas with mounts

g. Patch cords

h. SWR bridge (VHF and HF)

i. Extra coax

5. Personal gear (short duration)

a. snacks

b. liquid refreshment

c. throat lozenges

- d. 3 day supply personal medicine
 - e. aspirin
 - f. extra pair of prescription glasses
 - g. Sunglasses
6. Personal gear
- a. foul weather gear
 - b. 3 day supply of drinking water
 - c. 3 day supply of food
 - d. mess kit with cleaning kit
 - f. first aid kit
 - g. sleeping bag
 - h. toilet articles
 - i. alarm clock
 - j. flashlight with batteries
 - k. candles
 - l. 3 day change of clothes
 - m. waterproof matches

1-22 Operations:

Once you have arrived it is of paramount importance that you perform a few basic steps to avoid problems later on in your assignment. They are:

- 1) Upon arrival, take note of your exact location and jot down the route you took to get there. You will probably need to relay this information to your relief operator.
- 2) Report to the person in charge of the agency or the RACES operator that requested you.
- 3) If you are a relief operator, before you take over, get a thorough briefing of what has transpired.

Once you have accomplished these simple steps, unless you have been given another assignment your allegiance and full attention is to be given to communications. You are there as a communicator and traffic cannot get through without you.

Each RACES net or operation will have its own tempo and style. Unless you are calling up the net and acting as the Net Control, the method of operation in effect on the net will be obvious. Whether you are on a directed (with NCS) or tactical (no NCS) net, there are some basics to keep in mind:

- 1) Whenever possible, use tactical callsigns. They are easier for everyone to remember and are much quicker when the net is moving at a fast pace. Remember the 10-minute identification rule; a good rule to follow is to give your callsign when you make your last transmission in a conversation.
- 2) Acknowledge every transmission directed to you. Even if you do not have an immediate response or answer to the question asked, acknowledge that you received and understand it. The effect of not acknowledging is wasted time, because the sending station usually repeats the question.
- 3) Learn how and become a good listener. It is just as important as being a good speaker.
- 4) Know what you are going to say before you key the PTT button. Hesitations, pauses, umms and uhhs are also a serious waste of time, and they hint on lack of professionalism to those listening on receivers.
- 5) When beginning a conversation or passing traffic with another station, be sure that the receiving station is ready.
- 6) Take good notes. A station activity log is a minimum requirement. It should reflect notes on all transmissions made or acted upon by your station.
- 7) Always advise the NCS or another station in the tactical net if you will be away from or unable to answer your radio. Always advise of your return, as well.

If you are the Net Control Station, in addition to the above notes, there are several other key points:

- 1) In addition to the station log you must keep the net roster and include in it the callsigns of the stations on the net, and when they checked in/out.
- 2) Remember to identify the net and its purpose at regular intervals.
- 3) If the net is to be closed, announce it periodically and advise any 'stray' stations.
- 4) Prioritize tactical traffic the same way you would formal traffic (Emergency, Priority, Routine)
- 5) Acknowledge all stations calling NCS and get back to them in a logical order, usually first come-first serve, unless they have priority.

PART TWO

2-1 RACES Operations/Types of Assignment:

This section of the manual lists some of the types of assignments you can expect to run into during RACES operations. A definition of each of the different jobs is given along with any special considerations for handling that assignment.

2-2 SPECIAL EVENTS COMMUNICATIONS - ARE THEY LEGAL?

The first question you should try to answer is whether the type of help that is being requested is appropriate use of ham radio. With the 1989 rewrite of Part 97 the rules are less vague about this issue than they use to be:

97.113 Prohibited Transmissions

(a) No amateur station shall transmit any communication the purpose of which is to facilitate the business or commercial affairs of any party. No station shall transmit communications as an alternative to other authorized radio services, except as necessary to providing emergency communications. Any station may, however, transmit communications to:

(1) Facilitate the public's safe observation of, or safe participation in, a parade, race, marathon or similar public gathering. No amateur station shall transmit communications concerning moving, supplying and quartering observers and participants for any sponsoring organization unless the principal beneficiary of such communications is the public and any benefit to the sponsoring organization is incidental.

In practical terms this means that you help the sponsor if your communications effort is primarily beneficial to the public. As an example assume that you are net control of a net working at a marathon. Water Station 1 calls you and asks you to order 3 pizzas for their friends. This ISN'T appropriate because the primary beneficiary is not the general public but rather the hungry people at Water Station 1. Rover 2 calls in and informs you that a participant has collapsed. This IS appropriate use because someone's health is involved.

Personal safety of both you and the event participants is of paramount importance during any event. Always try to use common sense, i.e. don't put yourself into dangerous situations. (See the section on Safety) If a medical emergency should arise during the event you should do anything necessary in the realm of communications to assist. What this does mean is use your radio in any fashion that will help alleviate the problem. It's OK to hand the radio over to a paramedic or EMT to let them talk to a doctor. This is more efficient than having the amateur operator act as an intermediary. As a final word of caution you should always call for medical professionals to deal with any medical emergencies you may encounter.

The primary assignment of an amateur operator at any public service event is to provide communications. You are trying to act as a phone system for the different event officials. Do not make decisions on behalf of the event officials. Pass all the traffic on to appropriate officials AS WRITTEN; do not react to messages on their behalf.

2-3 Shadow Duties:

A Shadow is an amateur radio operator that is providing a communications channel between the person he is "shadowing" and other stations on the net. You have two duties here. One is to stick like glue to the person you're shadowing without getting in their way. The second duty is to be prepared to communicate successfully from any place that your assignment might travel.

You need to ensure that you have the proper equipment to communicate on behalf of your shadowee.

Make sure that you ask the Resource NCS about any special equipment you might need.

Quite often a shadow will have to talk from a moving vehicle as well as be able to move around in the field with the VIP. If this were the case then appropriate equipment would include a several-watt HT with spare batteries, as well as a mag-mount that can be placed on the exterior of the vehicle. If the official is expected to travel into very remote areas then a mobile 2m rig with 10-25 Watts is also appropriate. Powering the larger 2m mobile rig can be tricky so you might also have to provide a 12 to 24 Amp-hour gel cell if the vehicle doesn't have a cigarette lighter where you might obtain power.

The last consideration and perhaps the most substantial is whether you have the appropriate training for the shadow assignment. Enquire with the Resource NCS as you take the assignment about such special circumstances. You should also make the VIP you are shadowing aware of your level of training so that you aren't exposed to dangerous situations. An example might be shadowing the Incident Commander of a wild lands fire into the field. You should only take this type of assignment if you have had a formal fire line safety class.

2-4 Public Service Events:

There are several different types of events where NYC-RACES members might be asked to assist with communications. You can expect to work at bike tours, foot races such as 10Ks or marathons, car races, water events, public festivals, etc. The sponsors of any such public event will have had several meetings with key personnel (which should always include the operator in charge of the ham radio volunteers!). Normally, volunteer assignments are made before the event begins. However, sometimes this is not possible and you get an assignment upon your arrival at the pre-determined meeting place. Either way, try to stay flexible to the situation and remember that in almost all cases, the event sponsors have asked for your help because they just cannot run an event without effective communications.

You should ideally only be used as a communicator. It's rather hard to turn down someone who asks for your assistance though. Perhaps the best advice here is to go ahead and lend a hand as long as it doesn't interfere with the job you have to do as a communicator.

As with any event, the type of equipment you are going to need is a function of the job you expect to do.

If you're going to be the NCS you'll need:

1. A 10 Watt or higher base radio.
2. A portable antenna such as a 2m J-Pole with mount.
3. A battery with enough capacity to last your shift.
4. Table, chair, and writing implements.
5. Minimum RACES Equipment list items.

You're on foot:

1. An HT with at least a 1-Watt output level.
2. A hot-rod style gain antenna for the HT.
3. Minimum RACES Equipment list items.

Mobile in a car:

1. An HT with at least a 3-Watt output level or a mobile rig.
2. A mag-mount antenna mounted on the exterior of the vehicle.
3. Minimum RACES Equipment list items.

2-5 National Weather Service / SKYWARN Operations:

The National Weather Service SKYWARN program utilizes trained weather-spotter volunteers to recognize and report severe weather occurring in their vicinity. While NYC-RACES is just one of the many groups that assists the NWS in their mission, it is a member's first year requirement in NYC-RACES to avail themselves of this valuable training. Spotter training is conducted by the NWS in the spring of each year, just preceding the summer season. Check <http://www.noaa.gov/nws/er/okx> for SKYWARN Spotter Training Classes.

2-6 Red Cross Operations:

Amateurs have a LONG tradition of helping the Red Cross with their communications needs. Here in New York City, the Red Cross is tasked with staffing and operating shelters, cooling/warming centers and family reception centers during a disaster. The direction of when to open and operate these shelters is from the City.

In providing communications for Red Cross you are most likely to operate either at a shelter, or at a Red Cross chapter. There is a different set of considerations for each of these assignments. When operating at a shelter site, be aware of what are appropriate communications for amateur frequencies. Any message dealing with logistical or Health and Welfare is appropriate for amateur channels. Keep in mind that amateur frequencies are often monitored by news agencies. Traffic of a sensitive nature should be handled by a more secure communications medium, such as packet radio. As per Red Cross policy, specific identities of victims shall not be transmitted in any voice mode via radio. Packet radio equipment will be required if this type of communications will need to be conducted. Equipment requirements for shelter duty may vary depending on whether the net is operating on a repeater or a simplex frequency. You should be prepared to bring:

Net on a Repeater

1. RACES Minimum equipment list
2. Hot Rod style gain antenna for the handheld
3. Lots of blank message forms

Net on Simplex

1. RACES minimum equipment list
2. Base or mobile radio with a ten to twenty-five watt output
3. Portable antenna, such as a J-pole
4. Lots of blank message forms

Meals are usually provided at Red Cross shelter sites, so bringing your own food is usually not necessary.

When reporting for duty at the shelter, inform the shelter manager or amateur radio site supervisor of your level of training to prevent being assigned a task for which you may not be qualified.

If you encounter any medical situations make sure that you notify the appropriate personnel instead of trying to deal with it yourself. Again, your primary responsibility is communications.

2-7 Being a Red Cross Shadow:

Shadow duty for the Red Cross will usually involve either providing communications for a Red Cross official, or acting as a radio operator for a Red Cross mobile unit, such as a mass feeding station or ERV.

You will probably need both a mobile AND a handheld radio when shadowing a Red Cross official. If you are providing radio capability for a mobile unit, a mobile radio system should be adequate.

When using a mobile amateur radio in a Red Cross vehicle, remember that a 12-volt source may not be available, and you may need to supply your own power source, such as a gel-cell battery. Mobile unit duty is also likely to be a longer than average shift since you will be operating on vehicle's shift assignment. It is conceivable to work as long as eight to twelve hours on one of these assignments.

2-8 Duties at an Emergency Operating Center (EOC):

The NYC agencies typically operate from an Emergency Operations Center (EOC) during an emergency, staffing the EOC with senior government officials to help administrate the event from one location. The EOC may be at OEM HQ, at a police or fire department or other location. Amateur radio resources may also be operated from this location, and a Radio Officer or Official Emergency Station may operate from here.

As an emergency responder you may be asked to be a Net Control Station, a messenger, or as a channel monitor. The Net Control Station may be handling one of the nets originating from the EOC. Messengers move traffic between Red Cross or other officials and the EOC, or as spare hands as needed during the shift. The channel monitor position listens to public service frequencies to keep officials informed of the status of the incident.

The Net Control Station should utilize a fairly experienced operator. Special training should be taken before attempting this position during a major event.

The best background for someone filling a Messenger's position is a good knowledge of traffic handling. You can expect to take messages that are destined to go out via radio, and to deliver messages that have arrived from the radio circuit. It is also your responsibility to put any originating messages into proper format before they are sent. For more information, review the section on traffic handling earlier in this handbook.

A channel monitor listens to a public service frequency on behalf of the CRO/Shift Supervisor. You can expect to be briefed on the type of information to monitor as you start your shift. Generally anything that will help officials keep abreast of the event as it develops is of interest, allowing us to be better informed of the incident.

Equipment at the EOC:

There generally isn't any required equipment other than perhaps a handheld that might be used on a local intercom frequency. The EOC will normally be equipped fairly early in the event and the equipment can be expected to stay in place for the duration of the event.

2-9 Incident Command System (ICS):

Originating on the West Coast almost three decades ago, the Incident Command System is a tool used today by almost every police, fire, EMS and emergency management agency in the country. This information is being included in this manual because all public-sector emergency units in the State of New York are required to operate under the Incident Command System. The theory behind it stems from the need to have a thorough accounting of all personnel working at a major emergency scene and establishing clear lines of responsibility and scope of operations. It also uses a graphical method of displaying the 'organizational chart' of personnel working during the emergency.

A typical incident command structure is broken down into several different sections. The Incident Commander is at the top of the organizational chart. All decisions, personnel assignments, safety concerns and all other aspects of the emergency operation rest on his shoulders. Assisting him, and developing in the "branches" under the Incident Commander (IC) are:

Operations Branch ----- Planning Branch ----- Logistics Branch ----- Finance Branch

EVERYONE working at any emergency scene falls into one of these categories (or subcategories). Communications support, including NYC-RACES, typically falls under the Operations Branch because it is, in and of itself, an 'operational' unit.

When responding to an emergency, if you are given a command post assignment, it will be necessary for you to represent NYC-RACES within the Incident Command structure. You may be able to speak directly to the IC, but in most cases you will be working directly with one of the Operation section leaders.

In a large-scale emergency, it is not unusual to see an Incident Command chart with several hundred different personnel assignments on it. In fact, one of the IC's assistants, called the scribe, has the mammoth task of keeping the chart current.

There are many excellent training opportunities available to enhance your knowledge in this area. Check <http://www.fema.gov> and follow the link for incident command.

2-10 Safety as a RACES Emergency Responder:

Within this manual we've stressed the importance of taking your safety as your own responsibility. There are several aspects to conducting yourself in a safe manner. The first step you can take is to be adequately trained. One manner to extend your training is to take classes offered by other agencies.

The Red Cross offers classes in First Aid, CPR, etc. throughout most of the year. Any of these classes will enhance your own safety because you'll be more aware of how to take care of yourself.

With all this training it is still important to remember that you should only wear one hat during a RACES operation. You are there as a communicator, not a first aid provider, or a firefighter. This helps avoid confusion about your role, and will help you from putting yourself into unsafe situations.

Safety is just as important at home. You should ensure that all is well at home before responding to an emergency. This allows you to keep your mind on the situation instead of worrying.

As you're working an emergency, you need to keep yourself aware of what is occurring around you. This is the only way you can expect to see a dangerous situation before it surrounds you! Keep your eyes open and your brain on high alert! Stay situationally aware.

2-11 Stress Management:

To say that emergency situations and disasters can be stressful would be an understatement. As a volunteer, it is unlikely that you would experience the same level and quality of stress on a day-to-day basis as, perhaps, a paramedic or police officer. Unless you are exposed to stressful decisions and events on a regular basis, it is a fact of life that your body is not adequately prepared to deal with what you might see or encounter in a disaster. To add insult to an already tense situation, physical fatigue and exhaustion can also set in after many hours without rest. Stress Management is vitally important to your role as a first responder. A small amount of stress helps you to do your job with more enthusiasm and focus, but too much stress can drive you into exhaustion. Too much stress can be lethal! Look out for the following physiological symptoms:

- a. Increased pulse, respirations, blood pressure, perspiration
- b. Trouble getting breath; increased problems with allergies; skin conditions, and asthma.
- c. Nausea, upset stomach, diarrhea.
- d. Sweating or chills: cold hands/feet; clammy skin; tremors (especially of hands, lips and eyes)
- e. muffled hearing
- f. headaches
- g. feeling weakness, numbness, or tingling in part of the body feeling uncoordinated
- h. muscle soreness or stiff neck; lower back pain
- i. lump in the throat
- j. Chest pains

Cognitive reactions are next to occur after the physical symptoms in acute stress situations. They include:

- a. memory problems/short term memory loss
- b. disorientation
- c. difficulty naming objects
- d. trouble comprehending information - mental confusion
- e. difficulty calculating
- f. poor judgment, decisions, and problem solving
- g. poor concentration and limited attention span
- h. loss of objectivity or inability to use logic to solve problems

Many of these signs are difficult for a person to recognize in him/herself. Perhaps the best thing to do as you start a shift is to take aside someone that you trust and just ask them to let you know if you are acting stressed. If at sometime they do tell you they've noticed you're having difficulties then perhaps its time to ask for some relief. Above all it is important not to suppress the emotions you may be feeling. Critical incident stress debriefing specialists are usually at the scene of any disaster and can certainly be requested to respond if needed.

NYC-RACES TAC FREQS

TAC Channel	Output Frequency	Shift	PL Tone	Location
TAC 1	147.360	+	107.2	Manhattan
TAC 2	147.000	-	136.5	Manhattan
TAC 3	447.825	-	107.2	Manhattan
TAC 4	444.200	+	136.5	Queens
TAC 5	443.850	+	114.8	Rockland Co.
TAC 6	444.050	+	114.8	Manhattan
TAC 7	445.325	-	156.7	Staten Island
TAC 8	441.100	+	136.5	CityWide
TAC 9	446.900	-	141.3	NY Harbor
TAC 10				Portable Repeater
TAC11	147.360	s	107.2	TalkAround
TAC12	147.000	s	136.5	TalkAround
TAC13	447.825	s	107.2	TalkAround
TAC14	444.200	s	136.5	TalkAround
TAC15	443.850	s	114.8	TalkAround
TAC16	444.050	s	114.8	TalkAround
TAC17	445.325	s	156.7	TalkAround
TAC18	441.100	s	136.5	TalkAround
TAC19	446.900	s	141.3	TalkAround
TAC 20				TalkAround
SIMV1	146.520	s	National	Calling (no PL)
SIMV2	146.535	s	100.0	
SIMV3	146.550	s	100.0	
SIMV4	146.565	s	100.0	
SIMV5	146.580	s	100.0	
SIMV6	147.525	s	100.0	
SIMV7	147.540	s	100.0	
SIMV8	147.555	s	100.0	
SIMV9	147.570	s	100.0	
SIMV0	144.300	s	100.0	
SIMU1	446.000	s	National	Calling (no PL)
SIMU2	446.025	s	100.0	
SIMU3	446.050	s	100.0	
SIMU4	446.075	s	100.0	

SAME Codes for WX-Alert Radios

Use these SAME codes in your weather radios to be notified for only the counties that you are interested in.

TRI-STATE / S.A.M.E. CODES

NY

ST.	COUNTY	SAME #	NWR TRANSMITTER	FREQ MHz.	CALL	WATTS
NY	Bronx	036005	New York City, NY	162.550	KWO35	500
NY	Kings	036047	New York City, NY	162.550	KWO35	500
NY	Nassau	036059	New York City, NY	162.550	KWO35	500
NY	New York	036061	New York City, NY	162.550	KWO35	500
NY	Queens	036081	New York City, NY	162.550	KWO35	500
NY	Richmond	036085	New York City, NY	162.550	KWO35	500
NY	Rockland	036087	New York City, NY	162.550	KWO35	500
NY	Suffolk	036103	New York City, NY	162.550	KWO35	500
NY	Westchester	036119	New York City, NY	162.550	KWO35	500

CT

ST.	COUNTY	SAME #	NWR TRANSMITTER	FREQ MHz.	CALL	WATTS
CT	Fairfield	009001	New York City, NY	162.550	KWO35	500

NJ

ST.	COUNTY	SAME #	NWR TRANSMITTER	FREQ MHz.	CALL	WATTS
NJ	Bergen	034003	New York City, NY	162.550	KWO35	500
NJ	Essex	034013	New York City, NY	162.550	KWO35	500
NJ	Hudson	034017	New York City, NY	162.550	KWO35	500
NJ	Hunterdon	034019	New York City, NY	162.550	KWO35	500
NJ	Mercer	034021	New York City, NY	162.550	KWO35	500
NJ	Middlesex	034023	New York City, NY	162.550	KWO35	500
NJ	Monmouth	034025	New York City, NY	162.550	KWO35	500
NJ	Morris	034027	New York City, NY	162.550	KWO35	500
NJ	Ocean	034029	New York City, NY	162.550	KWO35	500
NJ	Passaic	034031	New York City, NY	162.550	KWO35	500
NJ	Somerset	034035	New York City, NY	162.550	KWO35	500
NJ	Sussex	034037	New York City, NY	162.550	KWO35	500
NJ	Union	034039	New York City, NY	162.550	KWO35	500
NJ	Warren	034041	New York City, NY	162.550	KWO35	500



FEMA Independent Study Course List

To view a course description, download course materials, enroll in courses, or take the final exam, select the course you are interested in from the list below.

The course materials are provided in Adobe Acrobat Portable Document Format files. These files are not zipped.

Once you download the files you want into the desired directory, open the Acrobat Reader program and then open the files you want to view or print.

Download directions are also available with each course.

It is recommended that the user download the course material files and view them off-line at their convenience, saving time and money for Internet connect charges.

IS-1 Emergency Manager: An Orientation to the Position
 IS-2 Emergency Preparedness, USA
 IS-3 Radiological Emergency Management
 IS-5 Hazardous Materials: A Citizen's Orientation
 IS-7 A Citizen's Guide to Disaster Assistance
 IS-8 Building for the Earthquakes of Tomorrow: Complying with Executive Order 12699
 IS-10 Animals in Disaster - Module A Awareness and Preparedness
 IS-11 Animals in Disaster - Module B Community Planning
 IS-15 Special Events Contingency Planning for Public Safety Agencies
 IS-55 Household Hazardous Materials - A Guide for Citizens * New *
 IS-120, An Orientation to Community Disaster Exercises
 IS-195 Basic Incident Command System
 IS-271 Anticipating Hazardous Weather & Community Risk
 IS-275 The EOC's Role in Community Preparedness, Response and Recovery Activities
 IS-279 Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures
 IS-288 The Role of Voluntary Agencies in Emergency Management
 IS-292 Disaster Basics * New *
 IS-301 Radiological Emergency Response
 IS-324 Community Hurricane Preparedness
 IS-330 Refresher Course for Radiological Response
 IS-386 Introduction to Residential Coastal Construction
 IS-393 Introduction to Mitigation
 IS-394 Mitigation for Homeowners
 IS-513 The Professional in Emergency Management

FSD-3**Relief Emergency · Routine Messages
Recommended Precedences**

The letters ARL are inserted in the preamble in the check and in the text before spelled out numbers, which represent texts from this list. Note that some ARL texts include insertion of numerals .Example: NR 1 RR W1AW ARL 5 NEWINGTON CONN. DEC 25 DONALD R. SMITH AA 164 EAST SIXTH AVE AA NORTH RIVER CITY MO AA PHONE 73-3968 BT ARL FIFTY ARL SIXTY ONE BT DIANA AR. For additional information about traffic handling, consult The ARRL Operating Manual, published by ARRL.

Group One—For Possible “Relief Emergency” Use

ONE	Everyone safe here. Please don't worry.
TWO	Coming home as soon as possible.
THREE	Am in ____ hospital. Receiving excellent care and recovering fine.
FOUR	Only slight property damage here. Do not be concerned about disaster reports.
FIVE	Am moving to new location. Send no further mail or communication. Will inform you of new address when relocated .
SIX	Will contact you as soon as possible.
SEVEN	Please reply by Amateur Radio through the amateur delivering this message. This is a free public service.
EIGHT	Need additional ____ mobile or portable equipment for immediate emergency use.
NINE	Additional ____ radio operators needed to assist with emergency at this location.
TEN	Please contact _____. Advise to standby and provide further emergency information, instructions or assistance.
ELEVEN	Establish Amateur Radio emergency communications with ____ on ____ MHz.
TWELVE	Anxious to hear from you. No word in some time. Please contact me as soon as possible.
THIRTEEN	Medical emergency situation exists here.
FOURTEEN	Situation here becoming critical. Losses and damage from ____ increasing.
FIFTEEN	Please advise your condition and what help is needed.
SIXTEEN	Property damage very severe in this area.
SEVENTEEN	REACT communications services also available. Establish REACT communication with ____ on channel _____.
EIGHTEEN	Please contact me as soon as possible at _____.

- NINETEEN Request health and welfare report on _____. (State name, address and telephone number.)
- TWENTY Temporarily stranded. Will need some assistance. Please contact me at _____.
- TWENTY ONE Search and Rescue assistance is needed by local authorities here. Advise availability.
- TWENTY TWO Need accurate information on the extent and type of conditions now existing at your location. Please furnish this information and reply without delay.
- TWENTY THREE Report at once the accessibility and best way to reach your location.
- TWENTY FOUR Evacuation of residents from this area urgently needed. Advise plans for help.
- TWENTY FIVE Furnish as soon as possible the weather conditions at your location.
- TWENTY SIX Help and care for evacuation of sick and injured from this location needed at once.
- Emergency/priority messages originating from official sources must carry the signature of the originating official.

Group Two—Routine Messages

- FORTY SIX Greetings on your birthday and best wishes for many more to come.
- FIFTY Greetings by Amateur Radio.
- FIFTY ONE Greetings by Amateur Radio. This message is sent as a free public service by ham radio operators at _____. Am having a wonderful time.
- FIFTY TWO Really enjoyed being with you. Looking forward to getting together again.
- FIFTY THREE Received your _____. It's appreciated; many thanks.
- FIFTY FOUR Many thanks for your good wishes.
- FIFTY FIVE Good news is always welcome. Very delighted to hear about yours.
- FIFTY SIX Congratulations on your _____, a most worthy and deserved achievement.
- FIFTY SEVEN Wish we could be together.
- FIFTY EIGHT Have a wonderful time. Let us know when you return.
- FIFTY NINE Congratulations on the new arrival. Hope mother and child are well.
- *SIXTY Wishing you the best of everything on _____.
- SIXTY ONE Wishing you a very Merry Christmas and a Happy New Year.
- *SIXTY TWO Greetings and best wishes to you for a pleasant _____ holiday season.
- SIXTY THREE Victory or defeat, our best wishes are with you. Hope you win.
- SIXTY FOUR Arrived safely at _____.

- SIXTY FIVE Arriving ____ on _____. Please arrange to meet me there.
- SIXTY SIX DX QSLs are on hand for you at the ____ QSL Bureau. Send ____ self-addressed envelopes.
- SIXTY SEVEN Your message number ____ undeliverable because of _____. Please advise.
- SIXTY EIGHT Sorry to hear you are ill. Best wishes for a speedy recovery.
- SIXTY NINE Welcome to the _____. We are glad to have you with us and hope you will enjoy the fun and fellowship of the organization.

* Can be used for all holidays.

ARRL Recommended Precedences

Please observe the following ARRL provisions for PRECEDENCES in connection with written message traffic. These provisions are designed to increase the efficiency of our service both in normal times and in emergency.

EMERGENCY--Any message having life and death urgency to any person or group of persons, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be *very* rare. On CW/RTTY, this designation will *always* be spelled out. When in doubt, do not use it.

PRIORITY--Use abbreviation P on CW/RTTY. This classification is for a) important messages having a specific time limit b) official messages not covered in the emergency category c) press dispatches and emergency-related traffic not of the *utmost* urgency d) notice of death or injury in a disaster area, personal or official.

WELFARE--This classification, abbreviated as W on CW/RTTY, refers to either an inquiry as to the health and welfare of an individual in the disaster area or an advisory from the disaster area that indicates all is well. Welfare traffic is handled only after all emergency and priority traffic is cleared. The Red Cross equivalent to an incoming Welfare message is DWI (Disaster Welfare Inquiry).

ROUTINE--Most traffic in normal times will bear this designation. In disaster situations, traffic labeled Routine (R on CW/RTTY) should be handled last, or not at all when circuits are busy with higher precedence traffic.

Note--the precedence always follows the message number. For example, a message number may be 207R on CW and "Two Zero Seven Routine" on phone.

FSD-218

Relief Emergency · Routine Messages Recommended Precedences

Every formal radiogram message originated and handled should contain the following component parts in the order given

I. Preamble

- a. Number (begin with 1 each month or year)
- b. Precedence (R, W, P or EMERGENCY)
- c. Handling Instructions (optional, see text)
- d. Station of Origin (first amateur handler)
- e. Check (number of words/groups in text only)
- f. Place of Origin (not necessarily location of station of origin.)
- g. Time Filed (optional with originating station)
- h. Date (must agree with date of time filed)

II. Address

(as complete as possible, include zip code and telephone number)

III. Text

(limit to 25 words or less, if possible)

IV. Signature

CW: The prosign \overline{AA} separates the parts of the address. \overline{BT} separates the address from the text and the text from the signature. \overline{AR} marks end of message; this is followed by B if there is another message to follow, by N if this is the only or last message. It is customary to copy the preamble, parts of the address, text and signature on separate lines.

RTTY: Same as CW procedure above, except (1) use extra space between parts of address, instead of \overline{AA} ; (2) omit cw procedure sign \overline{BT} to separate text from address and signature, using line spaces instead; (3) add a CFM line under the signature, consisting of all names, numerals and unusual words in the message in the order transmitted.

PACKET/AMTOR BBS: Same format as shown in the cw message example above, except that the \overline{AA} and \overline{AR} prosigns may be omitted. Most amtor and packet BBS software in use today allows formal message traffic to be sent with the "ST" command. Always avoid the use of spectrum-wasting multiple line feeds and indentations.

PHONE: Use *prowords* instead of prosigns, but it is not necessary to name each part of the message as you send it. For example, the above message would be sent on phone as follows: "Number one routine HX Golf W1AW eight Newington Connecticut one eight three zero zulu july one Donald Smith Figures one six four East Sixth Avenue North River City Missouri zero zero seven eight nine Telephone seven three three four nine six eight Break Happy birthday X-ray see you soon X-ray love Break Diana End of Message Over. "End of Message" is followed by "More" if there is another message to follow, "No More" if it is the only or last message. Speak clearly using VOX (or pause frequently on push-to-talk) so that the receiving station can get fills. Spell phonetically all difficult or unusual words--do not spell out common words. Do not use cw abbreviations or Q-signals in phone traffic handling.

Precedences

The precedence will follow the message number. For example, on cw 207R or 207 EMERGENCY. On phone, "Two Zero Seven, Routine (or Emergency)."

EMERGENCY--Any message having life and death urgency to any person or group of persons, which is transmitted by Amateur Radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be *very rare*. On cw, RTTY and other digital modes this designation will always be spelled out. When in doubt, *do not* use it.

PRIORITY--Important messages having a specific time limit. Official messages not covered in the Emergency category. Press dispatches and other emergency-related traffic not of the utmost urgency. Notifications of death or injury in a disaster area, personal or official. Use the abbreviation P on cw.

WELFARE--A message that is either a) an inquiry as to the health and welfare of an individual in the disaster area b) an advisory or reply from the disaster area that indicates all is well should carry this precedence, which is abbreviated W on cw. These messages are handled *after* Emergency and Priority traffic but before Routine.

ROUTINE--Most traffic normal times will bear this designation. In disaster situations, traffic labeled Routine (R on cw) should be handled *last*, or not at all when circuits are busy with Emergency, Priority or Welfare traffic.

Handling Instructions (Optional)

HXA--(Followed by number) Collect landline delivery authorized by addressee within....miles. (If no number, authorization is unlimited.)

HXB--(Followed by number) Cancel message if not delivered within....hours of filing time; service originating station.

HXC--Report date and time of delivery (TOD) to originating station.

HXD--Report to originating station the identity of station from which received, plus date and time. Report identity of station to which relayed, plus date and time, or if delivered report date, time and method of delivery.

HXE--Delivering station get reply from addresses, originate message back.

HXF--(Followed by number) Hold delivery until...(date).

HXG--Delivery by mail or landline toll call not required. If toll or other expense involved, cancel message and service originating station.

For further information on traffic handling, consult the Public Service Communications Manual or the ARRL Operating Manual, both published by ARRL.

ARRL QN Signals For CW Net Use

- QNA*** Answer in prearranged order.
- QNB*** Act as relay Between _____ and _____
- QNC** All net stations Copy. I have a message for all net stations.
- QND*** Net is Directed (controlled by net control station).
- QNE*** Entire net stand by.
- QNF** Net is Free (not controlled).
- QNG** Take over as net control station.
- QNH** Your net frequency is High.
- QNI** Net stations report In.*.
I am reporting into the net. (Follow with a list or traffic or QRU).
- QNJ** Can you copy me?
Can you copy _____?
- QNK*** Transmit message for _____ to _____
- QNL** Your net frequency is Low.
- QNM*** You are QRMing the net. Stand by.
- QNN** Net control station is _____
What station has net control?
- QNO** Station is leaving the net.
- QNP** Unable to copy you. Unable to copy _____

- QNO*** Move frequency to _____ and wait for _____ to finish handling traffic. Then send him traffic for _____
- QNR** Answer _____ and Receive traffic.
- QNS*** Following Stations are in the net. *(Follow with list.)
Request list of stations in the net.
- QNT** I request permission to leave the net for _____ minutes.
- QNU*** The net has traffic for you. Stand by.
- QNV*** Establish contact with _____ on this frequency. If successful, move to _____ and send him traffic for _____
- QNW** How do I route messages for _____?
- QNX** You are excused from the net.* Request to be excused from the net.
- QNY*** Shift to another frequency (or to _____ kHz) to clear traffic with _____
- QNZ** Zero beat your signal with mine.

* For use only by the Net Control Station.

Notes on Use of QN Signals

The QN signals listed above are special ARRL signals for use in amateur cw nets only. They are not for use in casual amateur conversation. Other meanings that may be used in other services do not apply. Do not use QN signals on phone nets. Say it with words. QN signals need not be followed by a question mark, even though the meaning may be interrogatory.

International Q Signals

A Q signal followed by a ? asks a question. A Q signal without the ? answers the question affirmatively, unless otherwise indicated.

- QRA** What is the name of your station?
- QRG** What's my exact frequency?
- QRH** Does my frequency vary?
- QRI** How is my tone? (1-3)
- QRK** What is my signal intelligibility? (1-5)
- QRL** Are you busy?
- QRM** Is my transmission being interfered with?
- QRN** Are you troubled by static?
- QRO** Shall I increase transmitter power?
- QRP** Shall I decrease transmitter power?
- QRQ** Shall I send faster?
- QRS** Shall I send slower?
- QRT** Shall I stop sending?
- QRU** Have you anything for me? (Answer in negative)
- QRV** Are you ready?
- QRW** Shall I tell _____ you're calling him?
- QRX** When will you call again?
- QRZ** Who is calling me?
- QSA** What is my signal strength? (1-5)
- QSB** Are my signals fading?
- QSD** Is my keying defective?
- QSG** Shall I send _____ messages at a time?
- QSK** Can you work break-in?
- QSL** Can you acknowledge receipt?
- QSM** Shall I repeat the last message sent?
- QSO** Can you communicate with _____ direct?
- QSP** Will you relay to _____?

QSV	Shall I send a series of V's?
QSW	Will you transmit on _____?
QSX	Will you listen for _____ on _____?
QSY	Shall I change frequency?
QSZ	Shall I send each word/group more than once? (Answer, send twice or _____)
QTA	Shall I cancel number _____?
QTB	Do you agree with my word count? (Answer negative)
QTC	How many messages have you to send?
QTH	What is your location?
QTR	What is your time?
QTV	Shall I stand guard for you _____?
QTX	Will you keep your station open for further communication with me?
QUA	Have you news of _____?

Abbreviations, Prosigns, Prowords

CW	PHONE (meaning or purpose)
<u>AA</u>	(Separation between parts of address or signature.)
AA	All after (use to get fills).
AB	An before (used to get fills).
ADEE	Addressee (name of person to whom message addressed).
ADR	Address (second part of message).
AR	End of message (end of record copy).
<u>ARL</u>	(Used with "check," indicates use of ARRL numbered message in text).
<u>AS</u>	Stand by; wait.
B	More (another message to follow).
<u>BK</u>	Break; break me; break-in (interrupt transmission on cw. Quick check on phone).
<u>BT</u>	Separation (break) between address and text; between text and signature.
C	Correct; yes.
CFM	Confirm. (Check me on this).
CK	Check.
<u>DE</u>	From; this is (preceding identification).
<u>HH</u>	(Error in sending. Transmission continues with last word correctly sent.)
<u>HX</u>	(Handling instructions. Optional part of preamble.) Initial(s). Single letter(s) to follow.
<u>IMI</u>	Repeat; I say again. (Difficult or unusual words or groups.)
K	Go ahead; over; reply expected. (Invitation to transmit.)
N	Negative, incorrect; no more. (No more messages to follow.)
NR	Number. (Message follows.)
PBL	Preamble (first part of message)
N/A	Read back. (Repeat as received.)
R	Roger; point. (Received; decimal point.)
<u>SIG</u>	Signed; signature (last part of message.)
<u>SK</u>	Out; clear (end of communications, no reply expected.)
TU	Thank you.
WA	Word after (used to get fills.)
WB	Word before (used to get fills.)
N/A	Speak slower.
N/A	Speak faster.

FSD-220**Communications Procedures · ITU Phonetic Alphabet
R-S-T System · Time Conversion Chart****ARRL Communications Procedures**

Voice	Code	Situation
Go ahead	K	Used after calling CQ, or at the end of a transmission, to indicate any station is invited to transmit.
Over	AR	Used after a call to a specific station, before the contact has been established
	KN	Used at the end of any transmission when only the specific station contacted is invited to answer.
Stand by or wait	AS	A temporary interruption of the contact.
Roger	R	Indicates a transmission has been received correctly and in full.
Clear	SK	End of contact. SK is sent before the final identification.
Leaving the air or closing the station	CL	Indicates that a station is going off the air, and will not listen or answer any further calls. CL is sent after the final identification.

ITU Phonetic Alphabet

Word list adopted by the International Telecommunications Union

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

The R-S-T System**Readability**

- 1 Unreadable
- 2 Barely readable, occasional words distinguishable.
- 3 Readable with considerable difficulty.
- 4 Readable with practically no difficulty.
- 5 Perfectly readable.

Signal Strength

- 1 Faint signals, barely perceptible.
- 2 Very weak signals.
- 3 Weak signals.
- 4 Fair signals.
- 5 Fairly good signals.
- 6 Good signals.
- 7 Moderately strong signals.
- 8 Strong signals.
- 9 Extremely strong signals.

Tone

- 1 Sixty cycle a.c. or less, very rough and broad.
- 2 Very rough a.c., very harsh and broad.
- 3 Rough a.c. tone, rectified but not filtered.
- 4 Rough note, some trace of filtering.
- 5 Filtered rectified a.c. but strongly ripple-modulated.
- 6 Filtered tone, definite trace of ripple modulation.
- 7 Near pure tone, trace of ripple modulation.
- 8 Near perfect tone, slight trace of modulation.
- 9 Perfect tone, no trace of ripple or modulation of any kind.

If the signal has the characteristic steadiness of crystal control, add the letter X to the RST report. If there is a chirp, the letter C may be added to so indicate. Similarly for a click, add K. The above reporting system is used on both cw and voice, leaving out the "tone" report on voice. Turn card over for examples.

Time Conversion Chart

UTC	EDT/AST	CDT/EST	MDT/CST	PDT/MST	PST	CET (Central European Time)
0000*	2000	1900	1800	1700	1600	0100
0100	2100	2000	1900	1800	1700	0200
0200	2200	2100	2000	1900	1800	0300
0300	2300	2200	2100	2000	1900	0400
0400	0000*	2300	2200	2100	2000	0500
0500	0100	0000*	2300	2200	2100	0600
0600	0200	0100	0000*	2300	2200	0700
0700	0300	0200	0100	0000*	2300	0800
0800	0400	0300	0200	0100	0000*	0900
0900	0500	0400	0300	0200	0100	1000
1000	0600	0500	0400	0300	0200	1100
1100	0700	0600	0500	0400	0300	1200
1200	0800	0700	0600	0500	0400	1300
1300	0900	0800	0700	0600	0500	1400
1400	1000	0900	0800	0700	0600	1500
1500	1100	1000	0900	0800	0700	1600
1600	1200	1100	1000	0900	0800	1700
1700	1300	1200	1100	1000	0900	1800
1800	1400	1300	1200	1100	1000	1900
1900	1500	1400	1300	1200	1100	2000
2000	1600	1500	1400	1300	1200	2100
2100	1700	1600	1500	1400	1300	2200
2200	1800	1700	1600	1500	1400	2300
2300	1900	1800	1700	1600	1500	0000
2400*	2000	1900	1800	1700	1600	0100

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 follow these lines.

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