

Getting Started
in
Amateur Radio
Emergency Communications

Presented by

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Amateur Radio Em Comm

- Using amateur radio to replace lost communications for served agencies in an emergency.
- Establishing interoperability in an emergency.
- Assisting served agencies especially non-governmental not-for-profits conduct public-service events.
- Assisting the public with Health and Welfare messages in disasters.

Alphabet Soup

- FEMA
- ICS
- ARES®
- RACES
- MARS
- CAP
- ARC
- SATERN
- SKYWARN
- NTS
- NVOAD
- MOU

Alphabet Soup

- FEMA *Federal Emergency Management Agency*
- ICS *Incident Command System*
- NIMS *National Incident Management System*
- ARES® *Amateur Radio Emergency Service*
- RACES *Radio Amateur Civil Emergency Service*
- MARS *Military Amateur Radio Service*
- CAP *Civil Air Patrol*

Alphabet Soup

- **ARC** *American Red Cross*
- **SATERN** *Salvation Army Team Emergency Radio Net*
- **SKYWARN** *National Weather Service severe weather spotters.*
- **NTS** *National Traffic System*
- **NVOAD** *National Voluntary Agencies Active in Disasters*
- **MOU** *Memorandum of Understanding*

Public Service and Em Comm

- SKYWARN
- NTS
- ARES®
- RACES
- MARS
- CAP
- Fire Departments
- Hospitals
- Emergency Management
- ARC
- SATERN
- NGO's
- NVOAD
- Law Enforcement

What are their Missions?

- ARES® Public Service and Emergency support. (County EC/ARRL)
- RACES Emergency Support of Government (EMO/SEMO)
- MARS Civilian Volunteers support US Government and the public. (DOD)
- NTS Deliver Radiograms as public service.
- SKYWARN Severe Weather Spotting as public service.

Public Service Events are Basic Training for Em Comm

- Net Discipline and protocol
- Radio Operation skills
- How to listen
- Compose and send tactical messages
- How to work with a group
- “Get the message through”

Large-Scale Public Service Events are good training for some aspects of disasters.

- Marathons
- Large public events
- Empire State Games

Large-Scale Public Service Events are good training for some aspects of disasters.

- Practice in busy formal nets.
- Ability to go to unfamiliar location and function as independent communicator.
- Problem solving: Adapt and overcome.
- Being Net Control Station.
- Working as a small part of a large event.

Getting Started in Em Comm

- Join one or more local groups:
 - ARES, RACES, SKYWARN
- Volunteer for Public Service Events
 - Be Active!
 - Train
 - Volunteer
 - Join Nets
- Join NTS Nets:
 - Learn to pass traffic

In the post 9/11/01 World

- You must be enrolled, credentialed and vetted to be allowed into a disaster area.
- There will be background checks and you must keep your credentials current.
- Accept this, or take up another aspect of the hobby.

What equipment will I need to get started?

- Your FCC license
- VHF/UHF HT and manual
- Spare batteries
- Chargers: 120VAC and 12V DC.
- Headset
- Speaker mike
- Mag-mount mobile antenna/coax/adapters
- Notebook, pen, roster, plan.

Taking it to the Next Level

- Spare HT and accessories
- Mobile VHF/UHF radio and antenna
- Battery power supply
- Small Yagi antenna
- Mast, guys, coax etc.
- HF equipment, antennas, and General license
- Maps

Being Ready

- Keep your batteries charged.
- Your Family Emergency Plan
- Your radio gear, credentials, roster, plan..
- Your personal gear
 - Clothing, chair, medications, flashlight.
- Your travel, shelter and preparedness gear.
 - Tent, sleeping bag, first aid, tools, generator and fuel.
 - Food and cooking gear.

Being Ready

- 24 Hour go-kit
- 72 Hour go-kit

Being Ready

- Fix or replace any problem gear.
- Please don't bring your intermittent speaker mike, weak battery, etc. to the next emergency deployment or public service event.
- Learn how to use your own equipment. Everyone has some degree of problem with today's sophisticated equipment, so bring the manual and solve your own problems.
- We all make mistakes, but we need to learn from them and not repeat them.

Basic Training

- “You were born with two ears and one mouth for a reason.” Listen and think before you talk.
- Be Brief.
- Understand the role of the Em Comm group you are with and the mission of the agency served.
- You are there as a communicator.
- Know how to program, set-up and operate all of your equipment.

National Traffic System

- Origin
 - Local
 - State/Section
 - Region
 - Area
 - TCC
 - Area
 - Region
 - State/section
 - Local
- Delivery

NTS Message Format

- Preamble
 - Number
 - Precedence (EMERGENCY/Priority/Welfare/Routine)
 - Handling instructions (**optional** see NTS list)
 - Check (number of groups in text only)
 - Station of origin
 - Place of origin
 - Date and time
- Address
- Text: (25 groups or less in general)
- Signature

Sample NTS Message

10 / R / HX# / 14/ N2IK / Syracuse NY / 1600 Sept 9 /

EmComm East Attendees

St. John Fisher College

Street Address

Rochester NY//

WELCOME TO THE FIRST EMCOMM

EAST CONFERENCE X BECOME ACTIVE

IN EMERGENCY COMMUNICATIONS 73//

Walter Bordett N2IK

Syracuse NY//

NTS Handling Instructions

- HXA Collect call auth. Within ___miles
- HXB Cancel message not delivered within ___ hrs.
- HXC Report date, time of delivery to originating station.
- HXD Report path of routing date and time, and TOD to originating station.
- HXE Delivering station to take reply message and originate message.
- HXF Hold delivery until___
- HXG Delivery by mail and toll call not authorized, cancel message and service originating station.

NTS Jargon

- Book Traffic
 - Multiple messages with same text going to multiple addressees. Saves net time to send text once and all the addressees.
- ARL Numbered Radiograms (ARL Messages)
 - Templated standard texts with fill-in blanks. Saves net time by not sending the text. Send the ARL number and the inserts. Can also be booked.
 - Some are useful in emergency work.

Training Courses

- ARRL Emergency Communications Courses
 - Level I Introduction: *for every volunteer*
 - Level II Intermediate: *for future leaders*
 - Level III Advanced: *for leaders and appointed officials*
- FEMA ICS Courses:
 - ICS 100
 - ICS 700
 - ICS 200
 - ICS 800

Training Courses

- American Red Cross Courses:
 - Introduction to Disasters
 - Mass Care
 - Disaster Damage Assessment
 - Basic First Aid and CPR

More Training Resources

- ARES Public Service Manual & NTS Manual
- ARES Field Resources Manual
- ARES Emergency Coordinator's Manual
- New York State RACES SOP (SEMO webpage)
- Your County's ARES/RACES Disaster Plan
- "Em Comm Monthly" e-newsletter
- eham.net Emergency Communications forum

Go-Kit Links

- <http://www.races.org/gokit.htm>
- <http://home.comcast.net/~buck0/hamgear.htm>
- <http://www.tcoek12.org/~tcarc/hlist.html>
- http://www.72hours.org/build_kit.html
- <http://w4ti.net/gokit.html>
- <http://www.arrl.org/news/features/2008/08/20/10272/>
- <http://www.k5prk.org/articles/comments.php?id=1422020C>
- http://www.guilfordares.org/ares_go_kit.pdf

Radio Go-Box Links

- http://www.wiaresraces.org/projects_EO_VHF_Station.htm
- <http://home.comcast.net/~buck0/combox.htm>
- <http://home.comcast.net/~wx2nj/aresbox.html>

Lessons Learned

- In an emergency you will be stressed and may not be able to do what you are able to do at home. Bring your radio manuals. Don't ask me how I know that.
- Emergency deployments can be very stressful and tiring. Be honest with yourself and others about your limits.
- You need to be flexible, focused, part of the team, and keep your sense of humor.
- Label all of your stuff if you expect to get it back. This includes your HT's. Want to guess how many W32A's were in the ARC HQ radio room at the start of a shift after the WTC disaster?
- Practice as you will do in an emergency. Prepare for the unexpected as well as the normal.

More lessons Learned

- Air time is a valuable and scarce resource in a busy emergency net. Don't waste it. Less urgent traffic should be sent to another frequency or not sent at all until the channel is clear.
 - Be brief and concise
 - Don't sit on your mike and hog the channel.
 - Don't hang up the repeater with faulty cross-banding.
 - It is faster to go slowly and carefully than to go fast and have to repeat the transmission.
- No sensitive personal or medical information in the clear over the radio. With thought there are ways to avoid it.
- If you make a mistake, correct it and move on. We all make mistakes. I have made some goofy ones.
- Listen, listen, listen.
- Those who have all the answers, haven't thought of all the questions.
- Real events are chaotic, and plans will be changed on the fly.

Your Turn for Questions

- There are no stupid questions. That is not true for answers.
- Please ask your questions. Get your money's worth.

What have I forgotten?

- Tell me.

Who has something good to share?

- Tell us.

The End

73 de Walt Bordett N2IK

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