



**WELCOME TO**

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**PASSAIC COUNTY ARES**



## ABOUT THE INSTRUCTOR:

- ▶ Name: Aly Badawy
- ▶ Callsign: AL0Y (Alfa Lima Zero Yankee)
- ▶ ARES District Emergency Coordinator for Passaic County
- ▶ ARRL Official Relay Station
- ▶ Registered Digital Traffic Station for "Radio Relay International"
- ▶ First licensed in October 2016
- ▶ Net Manager for Passaic County ARES
- ▶ Net control for Big Apple NTS traffic net, WRAET monthly net
- ▶ Disaster Services Volunteer at the American Red Cross



## TODAY'S AGENDA:

- ▶ What is ARES?
- ▶ Why Amateur Radio?
- ▶ Hierarchy of ARES organization
- ▶ Served agencies
- ▶ What happens in an Emergency?
- ▶ Required Equipment
- ▶ Minimum training, and additional training
- ▶ Questions and Answers

**SO, WHAT IS  
ARES?**



## WHAT IS A.R.E.S?

- ▶ **DEFINITION FROM ARRL:** The Amateur Radio Emergency Service® (ARES®) consists of Amateur Radio licensees who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes
- ▶ **ARES IN NUTSHELL:**
  - ▶ Amateur Radio Emergency Services, or ARES, is the field arm of the Amateur Radio Relay League (ARRL) : The League deals with all aspects of Amateur Radio, including legislation, licensing, and contests; the ARES branch specifically handles field communications, particularly during emergencies
  - ▶ When you hear in the news that Amateur Radio operators were part of a search and rescue operation, assisted in getting aid to a ship in trouble at sea, or provided communications for a Red Cross shelter, you're hearing about an ARES function



## WHY AMATEUR RADIO?

- ▶ The USA has the most reliable public telecommunications system in the world. But even these services are vulnerable to natural disasters, and are not designed for wide-spread emergency communication
- ▶ Recent advances in telecommunications technology provided more capabilities but not more reliability
- ▶ Public networks that survive disasters are usually overloaded as traffic shifts to them
- ▶ Public safety networks and critical infra-structure networks usually maintain their private networks to support their operations during emergencies



## WHY AMATEUR RADIO? – CONTINUED

- ▶ “When all other fail, Amateur Radio”
- ▶ Amateur radio doesn’t need any fixed telecom infrastructure
- ▶ Wide selection of bands across the radio frequency spectrum
- ▶ Amateur Radio can provide communications locally, regionally, nationally, and even world wide
- ▶ Amateur Radio is virtually immune to natural disasters



## WHY AMATEUR RADIO? – CONTINUED

- ▶ Amateur Radio operators and equipment are widely distributed throughout the nation.
  - ▶ Perfectly distributed communication network
  - ▶ Hundreds (if not thousands) of amateur radio operators are available to assist when local resources are exhausted
- ▶ Provide different type of communications:
  - ▶ Voice (using FM or SSB)
  - ▶ Digital communication (CW, Packet, Radio based emails, NBEMS, Mesh data networks, )
  - ▶ SSTV, ATV





## ARES AND ARRL

- ▶ The "American Radio Relay League" was founded in 1914
- ▶ The Amateur Radio Emergency Service or "ARES" was established in 1935 as part of the ARRL field organization
- ▶ ARRL provides continuing education and a certification program for emergency communicators
- ▶ ARRL sponsors operating contests to help amateurs sharpen their on-air skills. Examples include: Field Day and Simulated Emergency Test
- ▶ The ARRL's "National Traffic System" operates in manned or automatic mode 24x7, passing thousands of routine messages each day to maintain our preparedness for disasters

# **HIERARCHY OF ARES ORGANIZATION**



## HIERARCHY OF ARES ORGANIZATION

- ▶ There are 4 levels of organizations for ARES:
  - ▶ 1 - National level:
    - ▶ National emergency coordination at ARRL Headquarters is under the supervision of the ARRL Field Services and Radiosport Manager
    - ▶ Highlights of Responsibilities:
      - ▶ Maintaining contact with federal government and other national officials concerned with amateur emergency communications potential (served agencies)
      - ▶ Advising all ARES officials regarding their problems
      - ▶ Carrying out the ARRL's policies regarding emergency communications



## HIERARCHY OF ARES ORGANIZATION – CONTINUED

- ▶ There are 4 levels of organizations for ARES:
  - ▶ 2 - Section level:
    - ▶ We are in North New Jersey Section (NNJ)
    - ▶ The Section Emergency Coordinator (John, W2VTV, SEC) is the assistant to the Section Manager (Rob, KA2PBT, SM) for emergency preparedness
    - ▶ Highlights of Responsibilities:
      - ▶ Supervise all Emergency communications and other ARES activities on a section-wide basis
      - ▶ Develop a section-wide emergency communication plan
      - ▶ Coordinate with Section Traffic Manager so that emergency nets and traffic nets can work hand-on-hand, specially for welfare and emergency traffic during disasters and/or emergencies



## HIERARCHY OF ARES ORGANIZATION – CONTINUED

- ▶ There are 4 levels of organizations for ARES:
  - ▶ 3 - District level
    - ▶ We are in Passaic County District
    - ▶ District Emergency Coordinators are appointment by the SM based on a recommendation from the SEC
    - ▶ Highlights of Responsibilities:
      - ▶ Coordinate the training, organization, and emergency participation of ARES members and ECs within then district
      - ▶ Make local decisions in the absence of the SEC or through coordination with the SEC, concerning the allotment of available amateurs and equipment during an emergency
      - ▶ Provide planning and direction in the routing and handling of emergency communications of either a formal or tactical nature
      - ▶ Be fully aware of the locale and role of all vital governmental and volunteer agencies that could be involved in an emergency



## HIERARCHY OF ARES ORGANIZATION – CONTINUED

- ▶ There are 4 levels of organizations for ARES:
  - ▶ 4 - Local level
    - ▶ The local ARES program is coordinated through a local Emergency Coordinator
    - ▶ Highlights of Responsibilities:
      - ▶ Promote and enhance the activities of the Amateur Radio Emergency Service (ARES) for the benefit of the public as a voluntary communications service
      - ▶ Manage and coordinate the training, organization, and emergency participation of interested as designated by the Section Emergency Coordinator / District Emergency Coordinator
      - ▶ Establish viable working relationships with federal, state, county, city governmental and private agencies in the ARES jurisdictional area which need the services of ARES in emergencies
      - ▶ Develop detailed local operational plans with served agencies and partners in the jurisdiction



## ARES SERVED AGENCIES

- ▶ There are a number of served agencies that ARES groups can provide communication means to:
  - ▶ Emergency Operations Centers (EOCs)
    - ▶ State, County or a municipality O.E.Ms
  - ▶ Local fire and police stations
  - ▶ Cert Teams
  - ▶ National Weather Service (Skywarn)
  - ▶ NGOs:
    - ▶ Red cross, Salvation Army, Hospitals, Churches, Shelters

**WHAT HAPPENS IN  
AN EMERGENCY?**





## WHAT HAPPENS IN AN EMERGENCY?

- ▶ ARES activates only at the request of our served agencies - we're not first responders
- ▶ Not every emergency is a communications emergency
- ▶ NEVER SELF-DEPLOY!!!
- ▶ ARES members check-in to a pre-arranged frequency, Wait for instructions from ECs and/or DECAs:
  - ▶ Get assignment or go to pre-assigned location
  - ▶ Report situation at location



## WHAT HAPPENS IN AN EMERGENCY? – CONTINUED

- ▶ Typical assignments:
  - ▶ Deploy to local EOCs
  - ▶ Support fire and police stations
  - ▶ “Shadow” Served-agencies leadership
  - ▶ Support emergency shelters
  - ▶ Deploy as a communication station for your community
  - ▶ Exchange tactical and formal messages with other agencies
  - ▶ Severe Weather spotting
  - ▶ Become a net control station



## IMPORTANT FREQUENCIES

- ▶ NNJ section emergency communications:
  - ▶ WS2Q/R (146.895 MHz, Negative shift, PL: 151.4 Hz)
  - ▶ Monthly net:
    - ▶ 2nd Tuesday of each month. 2000L
- ▶ Passaic County Emergency Communications:
  - ▶ WO2X/R (443.450 MHz, Positive Shift, PL: 141.3 HZ)
  - ▶ NJ2PC/R is the Backup (440.950 MHz, Positive, PL: 97.4 Hz)
  - ▶ Weekly Net:
    - ▶ Every Monday at 2100L
  - ▶ HF: 3985 KHz, 7285 KHz, 50205 KHz



## LEGALITIES AND CAVEATS

- ▶ Amateur Radio operators are licensed by the FCC, and must pass exam
- ▶ By law, Amateur Radio operators are not allowed to be paid specifically to exchange messages
- ▶ Messages must not concern a normal operation of a business
  - ▶ Ex: During power outage, businesses can't communicate using Amateur radio
- ▶ Non-hams can talk on an amateur radio only if a licensed operator is controlling the transmissions, unless there's an immediate threat to life or property

# **REQUIRED EQUIPMENTS**



## REQUIRED EQUIPMENTS

- ▶ Most local emergency communications are handled on the 2-Meter or 70-Centimeters bands:
  - ▶ Usually a Handheld Transceiver (HT) is sufficient
  - ▶ A computer (even a Raspberry Pi) may be needed for digital communication. Ex: NBEMS or Packet Radio
  - ▶ Backup-Batteries
- ▶ Sometimes an HF radio with NVIS antenna may be required
- ▶ For long-haul communications, an HF radios, amplifiers, tuned antennas may be needed

# **REQUIRED TRAINING**



## REQUIRED TRAINING

- ▶ Basic Training:
  - ▶ How to hold the microphone and sound clear on the radio
  - ▶ Learn standard phonetics alphabet
  - ▶ Learn traffic handling and the NTS
  - ▶ Learn net control skills
- ▶ Advanced training (specific to served agencies):
  - ▶ FEMA ICS-100, ICS-200, ICS-700
  - ▶ Skywarn: Weather spotter
  - ▶ NBEMS (digital traffic handling)



# **QUESTIONS AND ANSWERS**



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**THANKS FOR ATTENDING!**

**73 DE ALØY**