



WAVES

Chattanooga Amateur Radio Club P.O. Box 23121 Chattanooga TN 37422 <http://w4am.org>

October 2009
Volume 21, Issue 10

SET October 3-4: Participate!

The ARRL Simulated Emergency Test is a nationwide exercise in emergency communications, administered by ARRL Field Organization Leaders including Emergency Coordinators, District Emergency Coordinators, Section Emergency Coordinators and Net Managers. Many other Section Leaders like the Section Manager and the Section Traffic Manager may have a hand in planning the exercises and/or reviewing the results. ARES, National Traffic System (NTS), Radio Amateur Civil Emergency Service (RACES) and other public-service oriented groups can be involved. The SET weekend gives communicators the opportunity to focus on the emergency-communications capability within your community while interacting with NTS nets. Although the main SET weekend this year is October 3-4, local and section-wide exercises may be held throughout the fall season.

To participate in this year's emergency test, contact your local ARRL emergency coordinator or net manager to find out the details. ARRL Sections, ARES teams and nets may conduct their exercises anytime during September through December. If you don't know who to call, please touch base with your ARRL Section Manager for assistance. See page 16 of QST for contact information or check the ARRL Web page. The URL to start with is <http://www.arrl.org/sections/>. From there, you'll find links to ARRL section home pages with names and contact information for your Section Leaders including the Section Emergency Coordinator and Section Traffic Manager. Whether you're a new licensee or an experienced radio amateur, the SET is a golden opportunity to learn or practice useful skills in traffic handling, net operation and emergency communications protocols and management.

The purpose of SET is to find out the strengths and weaknesses of ARES, NTS, RACES and other groups in providing emergency communications, and to provide a public demonstration--to served agencies such as the American Red Cross, the emergency management agency and through the news media--of the value to the public that Amateur Radio provides, particularly in time of need. Finally, SET will help radio amateurs gain experience in communications using standard procedures and a variety of modes under simulated-emergency conditions.

One of the first steps on the way to a successful SET is to try to get as many people involved as possible and especially new hams. In a real emergency, we find amateurs with all sorts of varied interests coming out of the woodwork. Let's get them involved in SET so they will know more about how emergency communications should be handled. Promote SET on nets and repeaters, and sign up new, enthusiastic radio amateurs. Many of those offering to help will be inexperienced in public-service activities. It's up to you to explain what's going on to them, and provide them with useful roles. They may like it so much that they become a permanent fixture in your ARES or NTS group. For a review of last year's nationwide Simulated Emergency Test, read the article in July, 2009, QST.

More information on the ARRL SET [here](#).

Alabama SET: Operation Highball

Alabama's Simulated Emergency Test (SET) will focus on railroad emergencies, Saturday, October 3, starting at 10:00 AM. A series of short training modules are planned for ARES nets this week. Readers can find MP3 files of the training, along with information about railroad communications, and other handouts on the [Alabama ARES Web site](#).

"Operation Highball" operators will coordinate efforts through reports to the Alabama Emergency Management Agency station, KF4LQK. From there, Acting SEC Mike Watkins, WX4AL will be gathering reports from around the state, and passing that information along to served agencies.

Alabama ARES hopes to see other emergency communications groups such as SKYWARN, ALERT, Southern Baptist Disaster Relief, SATERN, and the Salvation Army join in, and a special "EMCOMM Group" category has been created to encourage their participation.

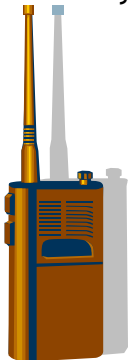
Last year, the Alabama Section was ranked fourth in the nation for efforts during the Simulated Emergency Test, and they hope to do even better this year. "All Aboard" for Operation Highball! -- Alabama Section Manager [Jay Isbell, KA4KUN](#)



Tuesday Night 8 PM 146.610



Thursday night 8 PM 146.790



CARC Sunday night net 9 PM 146.790

Chattanooga Amateur Radio Club Regular Meeting Sept. 3, 2009

Officers present: Mark Rose, Bill Dobbs, Jim Knight, Susan Miller

Directors present: Tom Cash, Ben Timmerman, Susan Miller, Charlie Curle

Mark Rose called the meeting to order at 7:05 pm.

Tonight's agenda is to select a Nominating Committee. Randy Schimke has volunteered. We need 5 or 6 people to serve on committee. They cannot be officers or directors.

Mark wants to meet on Tuesday nights about 4:00 pm to clean up the new radio room at the Red Cross Bldg. Need to remove cabinets, acquire desks and chairs and arrange room.

April 24, 2010 the Boy Scouts are having a jamboree at Coolidge Park and would like for some Hams to set up with them.

Is everyone getting the Waves?

Mark brought up that at the last Board meeting it was discussed that the CARC has no direction. He suggested that our new direction be classes and letting people practice and use our radios in the new radio room with supervision.

We need some cheap or free furniture for the new radio room. If you have some desks or know where we can get some, please call Mark. Matching would be good.

The minutes as printed in the August Waves were approved.

Treasurer's report was submitted and accepted as read.

Bulk Mail account is up for renewal. Discussion followed as to keep or not keep the Bulk Mailing permit.

Tom Cash suggested keeping the \$135.00 in the account whether or not we renew the permit.

Discussion was tabled until next meeting to allow Jim Knight time to find out when the permit expires.

Susan Miller nominated Robert Burman, Lou Carter, John Barrett, Jim Bowman and Loyd Headrick to be on the nominating committee. Randy Schimke had previously volunteered. He was nominated by Mark Rose. All were unanimously voted to the committee. Jim Bowman is chairman.

Meeting was adjourned at 8:30pm.

Respectfully submitted,

Susan Miller, KI4RZJ

Recording secretary

Definitions

The basic electrical units and definitions are as shown below. This list is not exhaustive (also see the Glossary), but covers the terms you will encounter most of the time. Many of the terms are somewhat inter-related, so you need to read all of them to make sure that you understand the relationship between them.

Passive: Capable of operating without an external power source.
Typical passive components are resistors, capacitors, inductors and diodes (although the latter are a special case).

Active: Requiring a source of power to operate.
Includes transistors (all types), integrated circuits (all types), TRIACs, SCRs, LEDs, etc.

DC: Direct Current
The electrons flow in one direction only. Current flow is from negative to positive, although it is often more convenient to think of it as from positive to negative. This is sometimes referred to as "conventional" current as opposed to electron flow.

AC: Alternating Current
The electrons flow in both directions in a cyclic manner - first one way, then the other. The rate of change of direction determines the frequency, measured in Hertz (cycles per second).

Frequency: Unit is Hertz, Symbol is Hz, old symbol was cps (cycles per second)
A complete cycle is completed when the AC signal has gone from zero volts to one extreme, back through zero volts to the opposite extreme, and returned to zero. The accepted audio range is from 20Hz to 20,000Hz. The number of times the signal completes a complete cycle in one second is the frequency.

Voltage: Unit is Volts, Symbol is V or U, old symbol was E
Voltage is the "pressure" of electricity, or "electromotive force" (hence the old term E). A 9V battery has a voltage of 9V DC, and may be positive or negative depending on the terminal that is used as the reference. The mains has a voltage of 220, 240 or 110V depending where you live - this is AC, and alternates between positive and negative values. Voltage is also commonly measured in millivolts (mV), and 1,000 mV is 1V. Microvolts (μ V) and nanovolts (nV) are also used.

Current: Unit is Amperes (Amps), Symbol is I
Current is the flow of electricity (electrons). No current flows between the terminals of a battery or other voltage supply unless a load is connected. The magnitude of the current is determined by the available voltage, and the resistance (or impedance) of the load and the power source. Current can be AC or DC, positive or negative, depending upon the reference. For electronics, current may also be measured in mA (milliamps) - 1,000 mA is 1A. Nanoamps (nA) are also used in some cases.

Resistance: Unit is Ohms, Symbol is R or Ω

Resistance is a measure of how easily (or with what difficulty) electrons will flow through the device. Copper wire has a very low resistance, so a small voltage will allow a large current to flow. Likewise, the plastic insulation has a very high resistance, and prevents current from flowing from one wire to those adjacent. Resistors have a defined resistance, so the current can be calculated for any voltage. Resistance in passive devices is always positive (i.e. > 0)

Capacitance: Unit is Farads, Symbol is C

Capacitance is a measure of stored charge. Unlike a battery, a capacitor stores a charge electrostatically rather than chemically, and reacts much faster. A capacitor passes AC, but will not pass DC (at least for all practical purposes). The reactance or AC resistance (called impedance) of a capacitor depends on its value and the frequency of the AC signal. Capacitance is always a positive value.

Inductance: Unit is Henrys; Symbol is H or L (depending on context)

Inductance occurs in any piece of conducting material, but is wound into a coil to be useful. An inductor stores a charge magnetically, and presents a low impedance to DC (theoretically zero), and a higher impedance to AC dependent on the value of inductance and the frequency. In this respect it is the electrical opposite of a capacitor. Inductance is always a positive value. The symbol "Hy" is sometimes used in (guess where :-) ... the US. There is no such symbol.

Impedance: Unit is Ohms, Symbol is Ω or Z

Unlike resistance, impedance is a frequency dependent value, and is specified for AC signals. Impedance is made up of a combination of resistance, capacitance, and/ or inductance. In many cases, impedance and resistance are the same (a resistor for example). Impedance is most commonly positive (like resistance), but can be negative with some components or circuit arrangements.

Decibels: Unit is Bel, but because this is large, deci-Bels (1/10th Bel) are used), Symbol is dB

Decibels are used in audio because they are a logarithmic measure of voltage, current or power, and correspond well to the response of the ear. A 3dB change is half or double the power (0.707 or 1.414 times voltage or current respectively). Decibels will be discussed more thoroughly in a separate section.

24 Oct 2009 + Swapfest Chattanooga 2009

Chattanooga Amateur Radio Club

<http://www.w4am.org/Swapfest%20Chattanooga%202009.htm>

Talk-In: 146.79 (alternate 146.61)

Contact: Jim Knight, KD4EHN

Email: jknight@chatt.net

A few basic rules that electrical circuits always follow are useful before we start.

- A voltage of 1V across a resistance of 1 Ohm will cause a current flow of 1 Amp, and the resistor will dissipate 1 Watt (all as heat).
- The current entering any passive circuit equals the current leaving it, regardless of the component configuration.
- Electricity can kill you!
- The danger of electricity is current flowing through your body, not what is available from the source. A million volts at 1 microamp will make you jump, but 50V at 50mA can stop you dead - literally.
- An electric current flowing in a circuit does not cause vibrations at the physical level (good or bad), unless the circuit is a vibrator, loudspeaker, motor or some other electro-mechanical device. (i.e. components don't vibrate of their own accord unless designed to do so.)
- External vibrations do not affect the operation of 99.9% of electronic circuits, unless of a significant magnitude to cause physical damage or the equipment is designed to detect such vibrations (for example, a microphone).
- Power is measured in Watts, and PMPO does not exist except in the minds of advertising writers.
- Large capacitors are not intrinsically "slower" than small ones (of the same type). Large values take longer to charge and discharge, but will pass AC just as well as small ones. They are better for low frequencies.
- Electricity can still kill you, even after reading this article.

26 Sep 2009 * SEDCO V Conference
SEDCO (SouthEastern DX & Contesting Organization)
<http://sedco.homestead.com/>
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17 Oct 2009 + GrayHamfest Association
<http://GrayHamfesttn.com>
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