



The Wisconsin ARES/RACES Emergency Coordinator



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The WEC Newsletter is sent monthly to all American Radio Relay League Emergency Coordinators in the State of Wisconsin. It intended to provide a forum for ECs to share ideas concerning the organization and training of their respective groups, and as a source of news concerning ARES and RACES activities in the state.

Comments, suggestions and articles (finished or in rough form) are solicited from the readers.

This newsletter and other important documents are posted on the Wisconsin ARES/RACES web page at:

<http://www.execpc.com/~skaplan>

in PDF format, shortly after each issue is published.

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Inspection and Test of Donated Used Batteries for ARES

by Ed Harris, KE4SKY

[Ed Harris is Assistant SEC in Virginia. This document came from the Virginia ARES website at <http://www.aresva.org>, a terrific source of information. It has been published in several newsletters as well as on the ARRL web pages. Thanks to our fellow ARES hams in VA for permission to share this. Edited slightly.]

Power packs such as the Quantum are excellent but expensive. You can make your own using Yuasa NP2-12 or similar 12V, 2Ah gel cells obtained from local hospitals. These fit in a coat pocket and will power an HT all day. Two or more connected in parallel and taped together power a 25W brick amp, or a laptop and TNC, for several hours.

A Source of Free Gel Cells

Sealed lead-acid (SLA) batteries (gel cells) are used to power medical diagnostic instruments, alarm systems or uninterruptable power supplies (UPSs) and are usually replaced on a fixed schedule rather than when they wear out. Because they require disposal as hazardous waste, a hospital's "donation" to your ARES group reduces the cost they would normally incur. ECs may write to local hospitals and explain how discarded gel cell batteries are useful - to provide power for emergency communications activity. It is likely that you may obtain a quantity free for the asking, with no more trouble than signing a receipt to satisfy the hospital's Environmental Officer's needs, and later writing a "thank you" to the hospital administration.

A suburban hospital discards from 50 to 100 pounds of SLA batteries monthly! Having made all the initial contacts, we now get a periodic call from the hospital's Engineering Supervisor whenever our shelf in Material Management section stacked with batteries. It takes a hand truck to collect the batteries for each load we get. We distribute them throughout Fairfax, Arlington and Prince William counties and the City of Alexandria here in Virginia. Handling the logistics of collection, testing and distribution should be shared by a group that you have trained for the job.

Inspecting and Recharging Donated Gel Cells

Donated SLA batteries must be inspected, recharged if necessary and then tested before issue. We check open circuit voltage to expedite distribution by sorting out batteries that may be load tested immediately. Any 12V batteries having an open circuit voltage (V_{oc}) of 12.8V or greater are considered ready for load testing. Those with V_{oc} of less than 12.8 V are charged by connecting them in parallel across a regulated 13.8V power supply. Any that are not accepting charge after four hours are discarded. Total charging should not exceed 140% of capacity.

Typical 12V SLAs have an open circuit voltage of about 13V when fully charged and 11V when fully discharged. Most ampere-hour ratings of batteries are based upon a discharge rate at 1/20 of capacity (expressed as C/20) for a specified rate of discharge, typically 25% for gel cells. More rapid rates

of discharge, such as when using a marginally sized battery for the load, reduces the available capacity and the number of charge-discharge cycles that a battery will provide.

Because ham communications equipment does not operate properly below about 11.5V, you cannot exceed the depth of discharge at which the battery voltage under load decays below that figure.

Batteries that accept charge to V_{oc} greater than or equal to 12.8V must still be load tested after recharging. An easy, quick check is to apply a load in amperes that approximates battery capacity in ampere-hours, for 10 seconds, while monitoring voltage drop. In a "good" battery, the voltage drops but quickly stabilizes after a few seconds, does not continue to fall and recovers within a few seconds after the load is removed. We have gotten reliable service from 12V batteries that do not drop below 11.7V at "C" load for 10 seconds.

If you have a small number of batteries and time, a better test is to approximate a continuous workload for at least a full minute. We test 12V batteries up to 2Ah, such as those used to power HTs, with an 8W fluorescent light at 0.6A load. Larger ones up to 10Ah can be tested with a 12V 50W incandescent lamp at 4A load. For larger batteries, connect the test battery to the intended transmitter and the transmitter to a non-radiating dummy load, monitoring voltage drop for a minute of full power key-down. Accept for reissue batteries that exhibit no more than a 0.5V drop at a normal working load and duty cycle. In our experience, one in ten donated batteries is rejected and recycled. When you subject a battery to a current load that exceeds C/5, or 1/5 of its ampere-hour capacity, expect a 25-30% reduction in its delivered capacity. At lower temperatures, available capacity is further reduced. Lead-acid batteries typically loose 50% of their capacity at 32° F!

A rule of thumb for adequate battery capacity to approximate C/20 discharge is 1Ah per watt, PEP. This is adequate for 24 hours of SSB or 12 hours of FM carrier, CW or digital modes at a typical operating duty cycle.

Lead-acid batteries at normal ambient temperatures should be charged at a current of from 1/10 to 1/20 of their capacity. Any sealed battery will vent if overcharged to the point of excessive gassing, because the valves are designed to release extreme pressure buildup inside the battery case. Marine or automotive chargers intended for flooded batteries **must not be used to charge gel cells**, unless they are equipped with voltage limiting circuitry to preclude their exceeding 14V peak during charging.

Mission Impossible

By Dennis Rybicke (K9LGU)
Wisconsin Section Traffic Manager

Good morning, Mr. Phelps.

You have challenges ahead of you. As an amateur, be professional. Take pride in doing a job right. Pay attention to how the old timers do it. Listen to innovations from newcomers to the hobby. Learn all you can.

Get the call of other stations exactly right -- the prefix, too. Learn the names of those who check in on the nets you frequent. There is a QNI list on the web at www.wna.eboard.com or I will be pleased to send you one via email attachment or U.S. Post. Operators enjoy being recognized by name -- just like normal people.

Count the check on messages you send, not because there is a great danger of the receiving station getting the text wrong, but because it is good practice.

Volunteer to be a net control station once in a while. It is fun, considerate and more good training. Hints on how to be an NCS are on the web bulletin board, too. Or just ask any net manager or your STM.

Brush up on your CW by checking into the training nets -- The Wisconsin Novice Net (3723 kHz at 0000Z) or the Wisconsin Slow Speed Net (3645 kHz at 0030Z). Or try the Wisconsin Intrastate Net (3662 kHz at 0100Z and 0400Z).

There is a good reason that traffic handling has been made part of the ARRL Emergency Communications course. Skills of an NTS traffic handler transfer well to emergencies. Knowing handling instructions, how to get fills in a text, or how to use ARRL numbered texts can truly enhance the efficiency needed during an emergency. If you take the course and generate some traffic, do not stop there. Sharpen your skills with practice.

Finally, your mission if you choose to accept it, (and even if you do not) is to advocate participation in traffic nets at your next club meeting. Your STM will certainly not disavow any knowledge of your action. In fact, please assure operators that their equipment will not automatically self-destruct if they check in to a net. Good luck.

Winnebago Meeting

I had the pleasure of attending the Winnebago ARES meeting of 20 March, a meeting with a bonus! Of course Dan Lenz (KB9IME) presided as Winnebago's EC, but it really turned out to be a regional meeting. Also present was Bill Niemuth (KB9EMO, Outagamie's EC) and Greg Ramlow (KB9SZP), EC

for Waupaca. It was inspiring to see these three leaders and their membership working out plans for repeater and packet coverage between and among their counties, as well as mutual aid plans in case a "big one" hits in the area. This kind of inter-county cooperation and planning is essential if we are to complete our mission during emergencies. I encourage all ECs to remember that part of the job includes working closely with neighboring jurisdictions; it can enhance your ability to respond both within and outside your county.

I also presented Dan Lenz and Pat LaTour (ex-EC for northern Winnebago) a commendation for their past hard work as a team, and Dan with a new EC Certificate for all of Winnebago County. Pat will stay on with Dan to help as his new work schedule permits.

SE WI Regional Meeting

Saturday, 24 March found about 18 people from southeastern Wisconsin at the Ozaukee County Justice Center. These were ECs and/or their representatives as follows:

COUNTY	NAME	CALL
Milwaukee	Bargholz, Jeananne	N9VSV
	Malloy, Mike	N9WJV
	Klingsporn, Milt	N9WSZ
Ozaukee	Gilmore, John	KB9RHZ
	Morrison, Jack	N9SFG
	Singer, Matt	KG9NH
Sheboygan	Galonski, Abe	KC1W
	Musiel, Mike	K9SJ
	Borgenhagen, Sky	N9XRU
Walworth	Retzlaff, Jeff	KB9VSA
	Payne, Gary	N9VE
	Thompson, Dan	KC9IK
Washington	GossFeld, Walt	N9LLS
	Fullhart, Bill	W9WCF
Waukesha	Westover, Jim	KB9KBK

Bill Stolte (N9VBJ, Emergency Manager, Ozaukee County) was also there as host, as was your SEC.

The major topic of discussion (aside from membership problems and the like) was mutual support in the case of emergencies that cross county lines, or when hams in one county cannot handle the load. Indeed, a tabletop exercise (designed by N9SFG) was held after lunch challenged the participants exactly along those lines. One excellent suggestion that came out of the discussions and tabletop exercise is the publication (among ECs only) of a stable list of 2-meter mutual aid contacts. This is covered more completely in the following article.

The meeting was proactive and productive! Plans are underway for a future meeting to discuss ways to modify and adapt the excellent State Hamshack Activation Plan so that it can be used as an activation plan by and for individual counties.

EC Roster to be Modified to Enhance Mutual Aid

One suggestion that came out of the SE regional meeting (see previous article) was to make available to ECs a list of frequencies on which to make contact between counties for mutual aid. This is simply a repeater or simplex frequency that is always monitored in your county, so that initial contact can be made with you by personnel in an adjoining county, even if telephone and other communications means are unavailable. Accordingly, the next EC roster will carry that information, listed next to each county name.

Help me out folks! If I am to add this valuable data, you need to provide it, if you have not done so already. Send me an email or snailmail note in the following format:

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OZAUKEE R 147.330 + 127.3
          R 443.525 + 114.8
          S 146.550
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As you can surmise, R stands for a repeater frequency while S stands for simplex. The offset and PL tone, if any, are also shown.

Please send **ONE** VHF frequency. If you have UHF as well, send **ONE** frequency. If you have adopted one simplex frequency as your countywide primary, send it. If not, I will automatically substitute 146.52, the nationwide calling frequency, in your listing.

Note that my goal is to send out a new EC Roster with this data in late April or early May, in time for our severe WX season. Please get your information to me quickly if you have not already done so!

SET 2001: Mutual Aid

While details and the exact date is not yet set, Ozaukee's AEC for Training Jack Morrison (N9SFG) has designed a terrific exercise – statewide – to address communications between counties. It will involve your SEC mailing an envelope to each EC, not to be opened until the day of the SET, which provides a message and instructions to be passed to a neighboring county. Several messages will converge on DECs, to be passed via HF to WC9AAG, our state hamshack in Madison. The exercise is designed to

test our emerging mutual aid network and foster inter-county communications paths.

SET can occur during any period in the window 1Sep – 30Nov, but usually the ARRL likes to focus on the first weekend in October. That would make it 6 (Sat) or 7 (Sun) October. My preference is 6 Oct. Are there swapfests or other activities scheduled that would conflict? Please let me know, and suggest alternate dates, ASAP. We want to nail this date down now. Keep tuned – details will follow in the next newsletter.

A Novel Public Service Activity

Eau Claire County helped in a somewhat unusual way during the Outdoor Warning Siren Test held on 2 April. First, a listing of the exact location of each siren was published in the W9EAU Feedline. Next, a net was called during the test with hams reporting whether or not they could hear a siren. Since the address of each ham is known, that gave Emergency Management an instantaneous assessment of not only whether the sirens were working, but also an excellent idea of the coverage of these warning tools. Great idea! Way to go, folks!

This spotlights an attribute of hams that can be very valuable to a number of agencies. That attribute is that we are DECENTRALIZED, and we tend to live all over the map in any given wide area such as an entire county. That, coupled with our instantaneous and independent communications ability makes us a unique resource.

For example, a few years ago, heavy rain and possible flooding was forecast for Ozaukee County. The heavy rains were tracked by the NWS using Doppler Radar, and from what appeared on the radar screens, NWS thought that flooding must be indeed occurring. They called Ozaukee's Emergency Manager to check it out. He told them he would get back to them shortly, and he then requested the EC to activate a net and report conditions. Nearly 30 hams checked in with local reports from all over the county, which clearly indicated that there were no flooding problems. The EM called the NWS back with that report in less than 30 minutes from the time they made the inquiry. Most important, the hams provided ground-truth data from all over the county to an extent that could not have been gained so quickly in any other way. Are we a resource? You bet we are!

New EC in Racine County

John Rusfeldt (KA9RZL) has stepped down as EC of Racine County, owing to work and family commit-

ments. John developed an excellent ARES/RACES unit in his county, and we thank him for his efforts. He will continue as an active member of the group, helping new EC Michael Melnick, Sr. (N9PMO). Mike officially moved from AEC to EC on 5 April. His data will be in the new EC Roster, scheduled for distribution only two to three weeks from the time you receive this newsletter. Welcome, Mike!

Website

ECs, why not send Mike Melnick (see above) a welcome note? Need his email address? Go to <http://www.execpc.com/~skaplan>, our Wisconsin ARES/RACES website, click to enter the EC page, find Mike's name under RACINE County, then click the email button. That will start your own email program with his address already filled in.

Also look at the updated EC Map, and download and print a copy if you like. It is there for YOU.

Why not also click your own email button? That is a quick and easy way to check the accuracy of your own email address on our site.

There is much data on the website, both to advertise our organization and to make your life easier as an EC. Is there anything missing that would help you? Suggestions are always welcome – just let me know.

FYI, we are getting between 500 and 1,000 hits per week on the site! For example, during the week of 19-25 Mar, there were 999 hits, 559 the previous week and 612 the week before that. Australia, Finland, Portugal and the Netherlands were among the more exotic countries from which hits came. The newsletters were the most popular item accessed, and of course the latest issue was the "hottest". Other very popular items were the VECS Plan, and the maps and links. The site is definitely getting exercise!

Thanks to Ray Meyer, N9PBY, for his wonderful design and continuous maintenance of the site. Ray, a graduate engineer, is employed full time. He is a member of the Ozaukee County Water Safety Patrol (our Rescue Boat on Lake Michigan). He is a member of OZARES (for which he maintains another website), and is SYSOP of N9PBY Packet BBS (WIPWSH). Oh yes, he also consults with our Sullivan WX group from time to time on packet matters. Ray proves the old adage: if you want a job well done, ask a busy person to do it. Thanks Ray, for being our Wisconsin ARES/RACES Website Guru, par excellence!