

Washington Amateur  
Communications, Inc.  
c/o Ed Oelschlagel N3ZNI  
60 Carl Avenue B-2  
Eighty Four, PA 15330-2829

# The WACOM

# HAM

NOVEMBER  
2005



## Prez Says

The Hamfest is rushing toward us! Where did the time go??? Anyway, we have over 50 tables asked for / reserved and even some paid for in advance. Quite a variety of people / vendors. Hopefully we will also have a large attendance. Again, we have some really nice door prizes that have been donated by both local merchants and amateur radio suppliers as well.

We are going to need all the help we can get that morning. The hall is booked the night before, so we won't be able to set up on Saturday as we have in the past. Email and telephone will be used to alert everyone what time we'll be able to get into the building. Please, please come and give us whatever time you can. Even an hour or two would be greatly appreciated. Let's try to make this a really great Hamfest!

Remember that there will also be a VE session at 10 a.m., so if anyone wants to get a license, test for an upgrade, or whatever, please let me know. We will need some examiners as well Mike, K3AIR, will be at the WACOM Hamfest to do DX Card Checking. If you intend to bring cards for him to check, please send him an email at [k3air@arri.net](mailto:k3air@arri.net)

Bill Edgar, N3LLR, and John Rodgers, N3MSE, will both stop down on Nov 6th. Rich Beaver, N3SRJ, also plans to attend.

At November's meeting, this coming Thursday Nov. 3rd, we will again have a speaker. Jeff Yates, the Director of the Department of Public Safety for Washington County, will speak on "The Missing Child Program." This has been discussed on the news as well and is being subscribed to by police departments in the area. I think you'll find this an interesting and most worthwhile program and one in which we certainly should participate.

*(Prez Says Continued on page 3)*

WACOM General Meeting Minutes for October	2
The Hybrid Auto & The Future of Amateur Mobile Operating	2
Coming Events	3
ARRL Holiday Toy Drive	3
WACOM Hamfest Announcement	5

## UPCOMING MEETINGS!



**Next WACOM Monthly Meeting:**  
Thursday, November 3, 2005, 7:30 PM  
Room 103, Washington County Building,  
Downtown Washington.

**Guest Speaker: Jeff Yates**

**Next WACOM Board of Directors Meeting:**  
Thursday, November 17, 7:30 PM or TBA  
Krispy Kreme, Washington

**All Welcome!**

# WACOM General Meeting Minutes for October 6, 2005

Susan Robishaw KB3JHQ, Secretary

The President, Jacque, N3ZEL called the meeting to order at 7:31 P.M. at the County Building.

Minutes: Motion to accept the September minutes, (Jim, KC3HW/Dave, N3IDH)

Treasurer's report: The Treasurers Report is filed in the Archives.

Repeater: No report but it is working.

Merchandise: Patches are here. The price is \$5.00 each. Contact Dan, KB3HVN for additional items.

RACES: The type of equipments has been agreed upon. Still working on classes with hospital personnel. A system for the Mon Valley Hospital is in the works for after the first of the year.

Hospital: Two antenna's are up and radio's are there. Still in discussion phase regarding classes. There is a plan for a communications room.

ARES: Dave, N3IDH is looking for suggestions for to-go or grab bag equipment. Labor Day Walkathon pictures are in the newsletter.

Amateur Radio Class: Committee: Bob, KB3IN chair, with members, Carl, KB3FZS, and Bud, N3TIR.

Hamfest: The date is November 6 at the Washington County Fairgrounds. There will be a meeting at Krispy Kreme on October 19 at 7:30 P.M. to finalize arrangements. Jack will be providing food again this year, and Bill will be supplying coffee.

Equipment: The donated antenna and tower are down. Allen, KB3EUQ has the tower.

Sportsman Show: No report.

Field Day: No Report.

Unfinished Business:

YL Net: Scheduled for Wednesday's at 7:00 P.M. starting October 12 at 7:30 P.M. on frequency 146.790.

West Alexander Fair: Nice representation was the comment.

New Business:

Pennsylvania QSO Party this weekend

Skyview Radio Society is holding a General class.

Drake Equipment: Looking for interested parties. Bud, N3TIR will list this equipment on EBay next week.

Elections: Nominations for President, Secretary, and BOD member will start at the November meeting.

Christmas Holiday Party: Location to be Bud's, N3TIR house on December 3, beginning at 4:00 P.M. Same format as previously, short meeting with elections. Please bring a covered dish. Motion to for this event, (Dave, N3IDH/Bob, KB3IN) Motion carried.

Tube Sales: \$51.00 was reported in tube sales.

Meeting adjourned at 8:10 P.M.

Speaker Bill Edgar candidate for Director, ARRL Atlantic Division.

There were 16 people present for the meeting.

50/50 won by Fay.

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## The Hybrid Auto & The Future of Amateur Mobile

Alan Applegate KØBG courtesy of [www.eham.net](http://www.eham.net)

I don't know how many amateurs operate mobile, but I'd suspect the number is rather large. The majority operate VHF of course, with a much smaller number on the HF bands. It really doesn't matter which mode or frequency, as all require some amount of current at a nominal 13.6 VDC (although we refer to it as 12 volts). Amperage requirements vary from an amp or two, to as much as 100 amps peak. All of this power is usually supplied by an alternator with the SLI (Starting, Lights, Ignition) battery acting as a buffer. In some installations, there are two or more batteries, and a larger alternator delivering as much as 250 amps. Twelve volts is twelve volts, and if you use good practices, installing mobile equipment is not difficult. I do my best to explain the correct procedures in the various articles on my web site.

I've been operating amateur mobile for many years, and I've seen the change from 6 volt to 12 volt systems; the latter is now so ubiquitous we don't even consider it when buying, or installing a mobile transceiver. Good, bad, or indifferent, there is a change in the wind.

The current gasoline prices notwithstanding, the future has been written on the wall for many years; we have to reduce our dependency on fossil fuels, foreign or otherwise. The EPA, for what it is or isn't, has set standards for fuel mileage and emissions we all must meet. The automobile manufacturers have stepped up to the plate, and given us all manner of technical wizardry to improve mileage, and reduce

emissions. Some of these new devices exacerbate the RFI we contend with. One of these, COP (Coil Over Plug), has become the number one bane of HF SSB operation. Unfortunately, there are more insidious demons creeping into our beloved mobile sanctuary. Enter the Hybrid automobile!

If you're thinking about buying a hybrid vehicle, read all of the data on the particular model you can, as some of the data is purposely misleading no matter the manufacturer! This includes, but is not limited to, the application of included warranties, extended warranties, and assumed warranties especially with respect to the requisite assist batteries all hybrids require. While this may sound off the subject, it isn't. In a recent California Supreme Court decision, it was ruled that extended warranties cannot be considered an assumed warranty. By all means, read the fine print carefully, and ask questions even if the wording appears non misleading. Caveat Emptor!

In the future, we may see fuel cell, hydrogen fueled, and perhaps 200+ mile-range full battery vehicles in our driveways. Until then, the main thrust is the battery assisted gasoline vehicle better known by the name hybrid. There are others looming on the horizon, but currently available hybrids are mostly from Honda, Toyota, and Ford, with a few from secondary market suppliers.

*(Hybrid Automobiles Continued on page 4)*

Toys already have begun showing up in Memphis, Tennessee, in response to the ARRL 2005 Holiday Toy Drive appeal. The League has partnered with The Salvation Army for this year's effort to brighten the holiday season for children in the coastal areas of Alabama, Mississippi and Louisiana left homeless or displaced in the aftermath of hurricanes Katrina and Rita.

"As The Salvation Army continues to provide assistance to the victims of the largest natural disaster in modern US history, we are excited to partner with the ARRL in providing toys for children affected by hurricanes Katrina and Rita this holiday season," said Mark Jones, The Salvation Army's public relations director.

Because it still has the facilities to manage a large toy drive, The Salvation Army will handle the distribution end of the program. Its facility in Jackson, Mississippi, will coordinate distribution throughout the Gulf Coast region.

Country music artist Patty Loveless, KD4WUJ, is the Holiday Toy Drive's national chairperson.

The collection point for the toys is in Memphis, Tennessee, where the League has secured a warehouse facility. Between now and December 10, the ARRL is encouraging ham radio operators throughout the US to purchase new, unwrapped toys for children ages 1 through 4 and send them with a QSL card to ARRL Toy Drive/The Salvation Army, 1775 Moriah Woods Blvd--Suite 12, Memphis, TN 38117-7125.

Volunteers in Memphis will sort and stock the toys, and in early December, the toys will be transported to The Salvation Army

facilities in hurricane areas that need help the most at that time.

Amateur Radio volunteers turned out in force to support communication for relief and recovery operations in the Gulf Coast. ARRL Media and Public Relations Manager Allen Pitts, W1AGP, says the Amateur Radio community is once again in a position to make a difference.

"Thousands of families are without a place to live and will be homeless over the coming holiday season," he said. "For a child living out of a tent or car, FEMA trailer or someone else's home, the 2005 holiday season will be anything but jolly. But hams from all across the country are coming to their rescue again through the ARRL Holiday Toy Drive."

Cash donations from ARRL members also are welcome. League members may send checks to ARRL Holiday Toy Drive, 225 Main St, Newington, CT 06111.

"Knowing that someone 'out there' remembers you is a start for these children," Pitts said.

More information about the ARRL 2005 Holiday Toy Drive is available on the League's Web site <http://www.arrl.org/piol>.

— courtesy of the American Radio Relay League

*(Prez Says Continued from page 1)*

Nominations will be taken at the November meeting as well, so consider who you'd want in the position of President, Secretary, and as a Board Member. Also, plans are starting for the Sports Show that is at the beginning of February, 2006.

Our Christmas party is coming up on Saturday, December 3rd. Please note that we will still have our regular meeting on Thursday, December 1st. The elections will be held at the meeting, as well as any other business discussion. This way our party will not be interrupted by trying to have a business meeting and we can all just enjoy ourselves and the season.

Again, and as always, PLEASE bring in the stubs and money you have for any Calendar tickets that were sold. We still have all of November and December to sell them, and they go a long way into helping pay for our hamfest. Think of them if you need a Stocking Stuffer or something to tuck into a Christmas or Birthday Card. Only \$5.00 gives you a chance at 31 days on the PA Lottery!

73, Jacqué Gosselin N3ZEL  
President, WACOM

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**Cycle Bottoming Out?** The average daily sunspot number from the reporting week of 14—20 October to 21—27 October dropped six points to 7.7. There were *no visible sunspots* over the four days October 24-27. — *Courtesy of the K7RA Solar Update*

## Upcoming Events

November 5 — WPA Simulated Emergency Test

November 5 & 6 — ARRL Sweepstakes CW

**November 6 — WACOM Hamfest**

November 19 & 21 — ARRL Sweepstakes SSB

December 2, 3 & 4 — ARRL 160 Meter Contest

December 10 & 11 — ARRL 10 Meter Contest

December 31 — Straight Key Night

January 14, 2006 — WASH 2 Meter Simplex Contest

February 26 — WASHFest 2006

March 26 — 2 Rivers ARC Hamfest

May 19, 20, & 21 — Dayton Hamvention

# JOIN WACOM ON THE AIR

2 meter net: Every Tuesday at 8:30 PM on the W3CYO repeaters 145.49 and 443.3 MHz

10 meter net: Every Tuesday at 9:00 PM on 28.340 MHz

There are so many different configurations, it is hard to make a pat statement about any of them. What follows is an overview, and is not specific to any particular vehicle. Each manufacturer is slightly different in their application. If there is one commonality, it is the type of assist battery they employ. Currently, almost without exception, hybrids use Nickel Metal-Hydride (Ni-MH) batteries.

Similar to lead-acid SLI batteries, Ni-MH units are designed to provide copious amounts of power for a short duration, and can be charged at very high rates, with some in excess of 100 amps at 128 volts! Other than the specific battery technology, the main difference is their nominal voltage. An SLI battery may be from 12.2 to about 13.4 volts (slightly more under charge), the typical hybrid battery delivers 120 volts to as much as 750 volts. There are several reasons for the high voltage, not the least of which is an effort to reduce I<sup>2</sup>R losses, and the available current ratings of the requisite solid state devices needed to control all of the complex functions.

Complexity is the key word here. The average hybrid has a small gasoline engine which uses modified valve timing to emulate the Atkinson cycle design rather than the more conventional Otto cycle design. Between the engine and transmission is a brushless, permanent magnet DC generator which (in most cases) can be used as a starter motor. There is the Ni-MH assist battery, a brushless permanent magnet DC drive motor-generator usually called the assist motor, and the all-important electronic control assembly. In some cases, there are multi-farad capacitor banks (16 to 64 Farads!). I could go into a long dissertation on the variances in designs, which energy saving algorithm they use etc., but there is so much information available on the net, the effort would be superfluous. Besides, this is suppose to be an amateur radio related article.

The rub comes for us amateurs in the methodology any specific design uses. Almost all use a standard (albeit a little larger in size) SLI battery to supply power for the lights and accessories while the engine is shut down. In some models, like the Honda accord, it is also used for starting if the assist battery is low. In most cases, the SLI battery is charged using the generator, not the alternator. Since the main function of the generator is to charge the assist battery and/or power the vehicle by supplying power to the assist motor, the amount of energy available to charge the SLI and/or power amateur radio equipment remains to be seen.

After spending about 10 hours reading about the various hybrids, and sending a dozen or so e-mails to the manufacturers, I've drawn a blank with respect to the charging current supplied by the generator (I think it is a trade secret). The Honda Accord does have an alternator, but most hybrids do not. One could assume it would have to be as big or bigger than that supplied by a standard alternator (100 to 160 amps), but there is no published data I can find to support the assumption. This fact begs the question about how much additional amperage is available, if any. While I cover alternator reserves on my web site, until such information is available for hybrids, we're in the lurch. One fear I have is that high power mobile may become a thing of the past.

There is another aspect too. What about all of those high-tech controllers? Are they compatible with amateur radio, and if they are at what frequencies? I do not believe there is enough information disseminated from the manufacturers and/or users to even make a WAG.

My brother Evan, KØHYG (sk), ran a 100 watt Yaesu, and an ATAS 120 antenna in his Toyota Prius without any apparent problems. He never used the radio except on highway trips where the engine runs constantly. I

recently spoke to an amateur in Georgia who was using a Honda Civic hybrid, and an ICOM 706. His only comment was the excessive ignition noise while the engine was running. With respect to egress RFI from the various parts, until hybrids become common place, our current view may be distorted. Fixing any egress RFI may end up being a dangerous undertaking. The 128 volts the Toyota uses, to the nearly 750 volt system used by ISE, there is a new level of concern not only for our use, but crash responders as well.

There are a couple of other technologies on the horizon we need to think about too. One of those is the 48 volt system. Several GM models are slated to have 48 volt systems as early as 2007. While they are supposed to have 12 V accessory outlets to run existing devices like cell phones, the available amperage is too low for even a moderate amateur radio power level.

Pure battery vehicles may be a ways off, but undoubtedly they will use higher voltages than we are used to. Further, it is certain that accessory devices will become available to run off of what ever voltage level becomes standard (if any). We certainly don't have to worry about ICOM, Yaesu, Kenwood, and others as they will supply whatever equipment is necessary to preserve sales. This primarily because their thrust is commercial, not amateur; we're just along for the ride.

Not everything is dank and dark. If GM does introduce a 48 volt system, assuming it will not be a hybrid, the nominal 54 VDC output will make high power mobile much easier to accomplish. In fact, this is a high enough voltage to easily allow 1,000 watts out if the alternator proves to be sufficient. As a side light, think of all of the new light bulbs, head lamps, and instrumentation this changeover will cause. Maybe it's time to invest in General Electric, as they make both assist motors and light bulbs.

Nonetheless, I'm looking forward to the first articles to appear in the pages of QST describing switching converters to supply 13.6 VDC from a 128 or higher voltage assist batteries to power our transceivers, and other goodies. Heck if they can supply 12kW or more energy to an assist motor, surely they can power an ICOM IC-7000 via a converter.

No matter your feelings in this matter, hybrids, fuel cells, hydrogen, and new battery technology are happening now, and the sooner we start thinking about their impact on our mobile operation, the better we'll be equipped to meet the challenges.

When a telephone outage occurred in Southern California on October 18, the Long Beach Emergency Communications and Operations Center (ECOC) declared a "communication failure protocol," and ARES/RACES members and other ham radio volunteers stepped in to help. The outage disabled 911 service in communities along the coast and through parts of Los Angeles and Orange counties. It also cut off at least 150,000 telephone and Internet service customers for up to 12 hours along with many cell phone users. Radio amateurs worked with police and fire officials to support the departments with auxiliary communications. Hams also were stationed at 17 of the largest nursing homes in town. The emergency net successfully relayed traffic through the ECOC to the hospitals, nursing homes and ambulance services, ensuring access to 911. When the City of Long Beach built its new ECOC three years ago Emergency Services Coordinator Casey Chel, KD6DOV, had the foresight to include a complete Amateur Radio facility for those rare occasions when all other communication systems might fail. Those plans paid off on October 18.

— Associated Radio Amateurs of Long Beach

# WACOM HAMFEST

SUNDAY, NOVEMBER 6<sup>TH</sup>, 2005  
WASHINGTON COUNTY FAIRGROUNDS  
WASHINGTON, PA 15301

8:00 AM – 1:00 PM

DOORS OPEN FOR VENDOR SETUP AT 6:00 AM

**V E SESSION AT 10:00 AM**

WALK-INS WELCOME, BUT PREREGISTRATION IS APPRECIATED.  
CONTACT JACQUE AT [n3zel@arrl.net](mailto:n3zel@arrl.net) OR (724) 746-9235

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The editor welcomes articles and timely information of interest to members and the general amateur community.

## The WACOM HAM

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## PLEASE SEND YOUR 2006 DUES AND APPLICATION INFORMATION

Annual WACOM membership dues are only \$15 .  
A couple pays only \$22.50.

Send your check payable to WACOM to:

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Washington Amateur  
Communications Inc.  
60 Carl Avenue B-2  
Eighty Four, PA 15330-2829



## WACOM e-Mail Reflector

An e-mail reflector has been set up for WACOM members.

What's a reflector? It's a mailing list which lets you send one e-mail message to the list address — [wa3com@yahoogroups.com](mailto:wa3com@yahoogroups.com) — and have it "reflect" to all members of the list. Unlike a personal mailing list, you don't need to know all of the e-mail addresses for every single member of the list. Only group members can send e-mail to other members of the reflector — no spam allowed!

E-mail reflectors are being used by many area Amateur Radio clubs as a means to facilitate news and information at a moments notice. Yahoo! Groups (formerly eGroups) provides this service for free to anyone who wants to avail themselves of their list server. Yahoo! also provides calendar, file storage, & additional services.

To join the WACOM reflector, simply send a blank e-mail to:

[wa3com-subscribe@yahoogroups.com](mailto:wa3com-subscribe@yahoogroups.com)