

The Signal Report

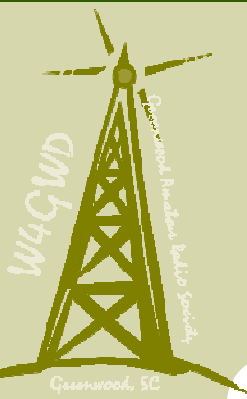
A Publication of the Greenwood Amateur Radio Society

VOLUME 5 ISSUE 6

JUNE

HTTP://WWW.W4GWD.ORG

W4GWD@ARRL.NET



2009 CLUB

OFFICERS

President

Joe Mimms,
K4GBH

Vice President

Phil Henry,
WW4I

Secretary

Jewell Mimms,
K14WJO

Treasurer

Tedd Davison,
A14WN

Repeater Trustee

Buddy Willis,
W4DEW

Activities Manager/ Editor in Chief

Adam Shirley,
WJ4X

**The W4GWD
Repeater Network**
147.165+ t107.2
443.900+ t107.2
W4DEW/R
146.910- t123.0

June Meeting

G.A.R.S. will meet Monday, June 15, 2009, at the Turner House on Bailey Circle in Greenwood at 7pm for light refreshments and 7:30pm for the meeting. The club meetings are now listed in the Index Journal on page 2A each month under "Community Calendar" and meetings are also listed in Greenwood's Town Planner which is circulated to most homes in the area.

Field Day 2009



The Greenwood Amateur Radio Society is holding Field Day 2009 at the same location as last year, at the park in Ninety Six, June 27-28. We will operate the entire Field Day period on various bands using all different modes of operation. If you'd like to schedule a specific time to operate, let Adam, WJ4X know.

Spaceships in the Sun:

Award winning astrophotographer [Thierry Legault](#) wanted to image the Hubble Space Telescope and space shuttle Atlantis traveling together around Earth. But how? The pair wouldn't fly over his hometown in France during the ongoing servicing mission. To catch the rare meeting of spaceships, he de-

ecided to do some traveling of his own all the way to Florida. On May 12th, from a location near the Kennedy Space Center, he pointed his solar-filtered telescope at the sun and voilà!-- there was Atlantis.

A day later, he tried again, and this time Hubble joined the show: "I took [this picture](#) of Atlantis and the space telescope transiting the sun together on May 13th. It was just before the shuttle reached out with its robotic arm to grapple Hubble," says Legault. "The two spaceships were at an altitude of 600 km and they zipped across the sun in only 0.8 seconds." He captured the split-second transit using a Takahashi 5-inch refracting telescope and a [Canon 5D Mark II](#) digital camera.



from SpaceWeather.com

Upcoming Society Events

Chat N' Chew

Every Friday at 11:30am the members of the Greenwood Amateur Radio society meet at Ryan's Steak House, Bypass 25 NE, Greenwood.

Everyone is welcome to have lunch or sip your favorite beverage and chat for a while.

(Dutch treat).

August 04, 2009 VE Exam Session 7:00pm Greenwood Red Cross

GARS ARRL Volunteer Examiners (VE) Team will have an exam session 7:00pm Tuesday August Fourth at The American Red Cross Building, 520 Epting Avenue, Greenwood, SC 29646.

Weekly Net

Every Thursday night at 9pm on 147.165+, The Greenwood Amateur Radio Society holds the weekly 2 meter net. Help spread the word to check into the Net.

If you would like to fill in or be a backup net control please let Buddy Willis, W4DEW know.

Weekly Ladies Net

The GARS Weekly 2 Meter Female Amateur Radio Net began on Tuesday, January 8, 2008 at 8 PM on the GARS 2 Meter Repeater. This net will be held every Tuesday night at the same time.

All interested female amateurs are invited and encouraged to check in. Subjects of discussion will be anything of interest to women.

If you have any questions, please contact Jean (W4KKA) at 864-953-0004 or Jo (KC4UU) at 864-446-7187.

Congratulations

Happy Birthday!

Roger Moore	KJ4EPL	Jun 3
Kevan Nason	N4XL	Jun 5
Edna Elledge		Jun 9
Adam Shirley	WJ4X	Jun 15
Beth Yoder		Jun 21
Diantha Litwer		Jun 24

Homer Banks	WB4MLU	Jul 10
Joe Mimms	K4GBH	Jul 13
Betty Jean Powell		Jul 15
Elizabeth Nason		Jul 21
Mitch Litwer	KJ4JGP	Jul 24
Jeremy Manning	KI4CCZ	Jul 28

Happy Anniversary!

Earl (KC4AXY) and Betty Jean Powell	Jun 5
Tedd (AI4WN) and Gail Davidson	Jun 15
Joe (K4GBH) and Jewell (KI4WJO) Mimms	Jun 16
Brab (WB4TRF) and Elaine (KA4PLU) Dukes	Jul 6
David (W4MCC) and Brenda McCall	Jul 7

Missing Q signals #5357:

QRC?

- Are You A Rag Chewer??

Classifieds

Cubic ST-2R 2KW antenna tuner \$350 obo, contact Jeremy Manning ki4ccz@gmail.com for additional info and photos.

For Sale or Offer for Entire Lot:

- \$ 25.00 2 Ringo ranger antennas (parts missing)
- \$ 10.00 3 amp power supply 12 volt
- \$ 5.00 Radio Shack 12 v power supply
- \$ 5.00 Radio Shack 13.8 power supply
- \$ 20.00 Mirage pre-amp RC I

call or email
Dewey "Buddy" Willis
W4DEW@arrl.net
(864) 445-7574 home

If anyone has any Ham radio stuff to sell or trade... list it in this column by calling Buddy, W4DEW, 864-445-7574, w4dew@arrl.net

A Cyber-Attack on an American City

Just after midnight on Thursday, April 9, unidentified attackers climbed down four manholes serving the Northern California city of Morgan Hill and cut eight fiber cables in what appears to have been an organized attack on the electronic infrastructure of an American city.

That attack demonstrated a severe fault in American infrastructure: its centralization. The city of Morgan Hill and parts of three counties lost 911 service, cellular mobile telephone communications, land-line telephone, DSL internet and private networks, central station fire and burglar alarms, ATMs, credit card terminals, and monitoring of critical utilities.

In addition, resources that should not have failed, like the local hospital's internal computer network, proved to be dependent on external resources, leaving the hospital with a "paper system" for the day.

The first lesson is what stayed up: stand-alone radio systems and not much else. Cell phones failed. Cellular towers can not, in general, connect phone calls on their own, even if both phones are near the same tower. They communicate with a central switching computer to operate, and when that system doesn't respond, they're useless. But police

and fire authorities still had internal communications via two-way radio.

Realizing that they'd need more two-way radio, authorities dispatched police to wake up the emergency coordinator of the regional ham radio club, and escort him to the community hospital with his equipment. Area hams dispatched ambulances and doctors, arranged for essential supplies, and relayed emergency communications out of the area to those with working telephones.

Source: <http://perens.com/works/articles/MorganHill/>

Analyst's Comment: (U) Lessons to be learned: telecommunications providers need to continue to harden their critical nodes - the ones that cannot be routed around; public safety agencies need alternative means of communication; and loss of communications should be part of every agency's exercise schedule. Recall that after Katrina, police and public safety was seriously impeded by loss of communications.

Club Corner

W4GWD gears up for Field Day

The Hunt is on, Ask about joining Greenwood ARS ARDF

Make sure you get your entry in for the Homebrew Challenge!

Let us know what you're up to by sending an email to:

WJ4X@amsat.org

CQ Test with N4XL

With Field Day coming up, this month's article is on Batteries and their proper care and feeding, as well as using them with HF radios in a mobile/portable environment. Kevan will be back next month with the next CQ Test.

-Ed.

BATTERIES

There are two important points about batteries which need to be mentioned up front. First, the term Deep Cycle is a misnomer, as all lead acid batteries are considered discharged when their voltage reaches 10.5 volts under load. This includes every, lead-acid type, no matter the plate construction, the type of electrolyte (liquid or gel), the name on the outside, what service it is intended for, period! If you didn't understand this statement, let's repeat it: A lead-acid battery is considered 100% discharged when the under-load voltage reached 10.5 volts! Discharging any lead-acid battery lower than this, drastically reduces its service life.

Secondly, so-called Deep Cycle batteries are actually designed to have a better Reserve Capacity (RC) than an SLI (Starting, Lighting, and Ignition) as I explain below. By no means, does this convey, indicate, or concur that the battery can be discharged lower than 10.5 volts under load! Again, discharging any lead-acid battery lower than this, drastically reduces its service life.

As a result, there is a lot of confusion about which type of auxiliary battery to use in a mobile application, and some even question if one is needed at all. If you run a nominal 100 to 200 watt mobile transceiver, you probably don't need one (stationary, QRP operation is an exception). However, if you use an amplifier it is usually best to use one to maximize peak power capability which helps reduce the IMD products associated with poor voltage regulation. Read that as one designed as one designed for an SLI application.



Here's another important point to remember. Batteries designed for marine applications are not the battery of choice for any mobile installation, the fact they have screw terminals notwithstanding. A marine battery is designed to maintain at least an 80% charge after sitting uncharged for 12 months or more. They are a form of SLI battery, but typically have less starting amps and less reserve power than a true SLI. Incidentally, the terms Marine and Deep Cycle seem to be synonymous terms at least in the amateur community. They're not.

There are two types of batteries which should be used in a mobile operation, and each one needs a different approach with respect to battery type, and whether or not an isolator is required. The first being operation while underway, and the other more correctly called, portable operation. This is where you're stationary and using only batteries for power. Since the demands on the batteries are different, they require different types of batteries if we're going to get the maximum serviceability and bang for your buck. We'll take them in order.

There are some important things we need to know about batteries before we get into the different uses. In our case, we're talking about lead acid batteries which come in a variety of sizes, current ratings, configuration of posts (+ and - connections), and most importantly their construction. The latter is a major consideration if the auxiliary battery is trunk mounted (more of this later).

We're also narrowing our selection to two basic types of batteries; SLI and RC. In general terms, SLI batteries are designed to provide a large amount of current over a short period of time. Where as RC batteries are designed to provide a low amount of current over an extended period of time. Under the right conditions, both types can be charged at rather high rates.

Both types come in a large number of sizes from 2 ah (ampere hours) to over 400 ah. Once again, no matter the type, a lead-acid battery is considered discharged at a nominal 10.5 volts (while under load). The specific length of time each type will supply a specific amperage until it reaches a nominal discharge level, varies over a wide range. It is always best to refer to the published specs from the manufacturer.

Fully charged, the nominal resting voltage of a lead-acid battery is 12.2 to 13.1 depending on construction. By construction I'm referring to the plate construction, and the electrolyte type (liquid or gel). Standard car batteries are referred to as "flooded" in that the sulfuric acid electrolyte is in liquid form, and the plates are usually flat. This is true of every OEM battery I am aware of (gasoline or diesel). The only exception are hybrid vehicles.

In an AGM (Absorbent Glass Mat), like an Optima Red Top shown at left, the electrolyte is a gel-like. As a result, they may be mounted in any position, even up side down. Their plates are spirally wound, which makes them almost impervious to vibration. What's more, they don't out gas under normal conditions so they can be mounted inside a vehicle. They will, however, out gas if you abuse them by over-charging. Speaking of which...



In any application, there are limits to the rate of charge, temperature of operation, and the applied voltage especially if the battery is maintained in a float condition

(constant charge). These vary with battery construction, type, and manufacturer so it is always best to consult with the manufacturer when in doubt. The right photo is an Exide Orbital, and is similar in construction to the aforementioned Optima batteries.

Any auxiliary battery should be installed in a battery box and properly restrained. The rule of thumb for battery restraints is 6Gs lateral and 4Gs vertical. The last thing you want is a 60 pound battery flinging acid all over the insides of your vehicle! If you use a standard car battery, the box must be vented to the outside.

A word of caution is in order. A typical lead-acid battery has an internal resistance at full charge of about .003 ohms although some types are slightly higher, and some slightly lower. Under direct short conditions, the maximum current can exceed 3,000 amps, and a decent quality AGM, almost 4,000 amps! Doing so can cause some batteries to self-destruct which will hurl sulfuric acid far and wide, so handle them accordingly! It's best to keep their plastic post caps on until you actually make the connections. When removing them, or installing them, the negative lead should be removed first, and installed last. Why? Think about it!

From KØBG.COM

Homebrew Challenge and other news

If you want to see your article here, please send an email to the newsletter staff WJ4X@amsat.org

Again this month, anyone participating in the Homebrew Challenge needs to be diligent and work their project's bugs out.

If you're still looking for a project to do, Leo, K4LEO has sent in a schematic and how to on building your very own soundcard interface to run PSK or other soundcard modes (Including APRS!)

If you would be interested in a copy of his schematic and photos, let me know at wj4x@amsat.org

In other news, the Greenwood Amateur Radio Society will participate in the ARRL Field Day, June 27 and 28. We will be located at the same place as last year, the 96 park, in Ninety Six, South Carolina.

We will be operating all modes and bands from 80 up. I might even break out the microwave gear (it's not just for cooking popcorn!) to get an S band satellite contact.

I challenge all of you to come by and try your hand at Field Day contesting. It's a great way to get your feet wet in Radiosport. Make sure you sign up for an operating position, The choice positions are going quick!

If you'd like to see something unusual or learn something new, let us know and we'll see what we can do!

See you all in June,

WJ4X

COMING HAMFESTS and EVENTS:

27-28 June 2009

ARRL Field Day

Greenwood Amateur Radio Society's Field Day will be held this year in the '96' park, in Ninety Six, South Carolina. Come on out and enjoy operating in a casual "contest" that demonstrates both emergency operating styles and quick rapid fire contacts. Many different modes and bands will be on display, including satellite and digital modes such as PSK 31.

Please contact Adam WJ4X@amsat.org for more information!

25 Jul 2009

34th Annual Western Carolina Hamfest
Western Carolina Amateur Radio Society
<http://www.wcars.org/hamfest.html>
Talk-In: 146.910 (PL 91.5) & 147.390 (PL 94.8)
Contact: Dean Blair, K2JB
20 Coffey Place
Asheville, NC 28806
Phone: 828-423-3082
Fax: 828-670-9909
Email: k2jb@arrl.net
Waynesville, NC
Haywood County Fairgrounds
758 Crabtree Road (NC 209)

22-23 Aug 2009

West Virginia State Convention
West Virginia State Amateur Radio Council
<http://www.qsl.net/wvsarc>
Talk-In: 145.39 (Alt. 147.88)
Contact: Patrick Shea, N8MIN
27 Jackson Street
Weston, WV 26452-1513
Phone: 304-269-3468
Fax: 304-427-2187
Email: pshea@citynet.net
Jackson's Mill, WV
WVU Convention Center & Jackson's Mill 4-H Center
Jackson's Mill Road

8 Aug 2009

Ellijay Amateur Radio Society (EARS)
<http://www.ngamtn.com/w4hhh/>
Talk-In: 145.170 -600 kHz (PL 100)
Contact: Dave Meadows, K4LDI
401 Vanilla Lane
Ellijay, GA 30536
Phone: 706-276-4043
Fax: 706-276-4043 (call Dave first)
Email: dmeadows@ellijay.com
Ellijay, GA
Ellijay Lions Club
1729 South Main Street

5-6 Sep 2009

Shelby Hamfest
Shelby Amateur Radio Club
<http://www.shelbyhamfest.org>
Talk-In: 146.88 & 147.12
Contact: Robby Hamrick, WA4RH
Box 1408
Ellenboro, NC 28040
Phone: 828-453-9121
Email: chairman@shelbyhamfest.org
Dallas, NC
Gaston County Park
1301 Dallas Cherryville Highway

3 Oct 2009

York County Amateur Radio Society (K4Y TZ)
<http://www.rockhillhamfest.com>
Talk-In: 147.030 neg (no tone)
Contact: Sheila Parrish, KG4CDF
2358 J P Dirt Road
Edgemoor, SC 29712
Phone: 803-328-5983
Email: coy@navacore.net
Rock Hill, SC
Faith Assembly of God
2800 Faith Blvd.

24 Oct 2009

Sumter "OPEN AIR" Hamfest
Sumter Amateur Radio Association
<http://www.geocities.com/CapeCanaveral/2695/sara.htm>
Talk-In: 147.015 (PL 156.7)
Contact: Carl Ecabert, AA1MD
6105 Dubose Siding Road
Sumter, SC 29153
Email: aa1md@ftc-i.net
Sumter, SC
Sumter Jaycee Hut
314 Pine Street

9 Jan 2010

Greenwood Amateur Radio Society
<http://www.w4gwd.org/>
Talk-In: 147.165+ & Alternate 443.900+ (both PL 107.2)
Contact: Tedd Davison, AI4WN
116 Mountain Shore Drive
Greenwood, SC 29649-8600
Phone: 864-223-6125
Email: ai4wn@arrl.net
Greenwood, SC
Greenwood Civic Center
1610 Highway 72/221 East

**IF YOU WOULD LIKE YOUR HAMFEST OR
EVENT LISTED HERE, PLEASE CONTACT
ADAM, WJ4X@AMSAT.ORG**