

W9JOZ

Volume 4, Issue 2

February 2012

President's Corner

Great January meeting, I was glad Janet asked Tom Berg to attend. WOW we really hit 2012 running, working on Field day and Chester got us started with a couple of projects already. Spring sure seems a far way off and I can't wait for it. We can at least look forward to the Indiana QSO party and the Auction in May. It's never too early to start thinking about other known events, field day, special events, Skywarn, etc., too. By the way the VE team got together Tuesday night and we got two upgrades from that. Congratulations to the new general Dan KC9UKX and to our newest member Jack KA9ZTP (EXTRA).

Be prepared, get your stuff together and your go kit ready? You never know when you'll need it. Check out the W9JOZ club's web site for up and coming local Skywarn Spotter Training classes.

CU at a meeting

73 Tony W9AL

Meeting is February 16th



Meetings are at the Henry F. Schricker Library on the third Thursday of each month, with the exception of December.

The library is located on west Culver Road, two blocks west of Highway 35.

DUES \$12.00

New Year, same amount for dues.

No Increase cost here!

INSIDE THIS ISSUE

- 1 President Speaks/ Meeting Reminder
- 2 Notices
- 3-7 Articles/Seen and Heard

More from Tony, W9AL

Coming up

Feb 16th SCARC Meeting starting at 7:15 pm

Feb 25th Cabin Fever Hamfest Laporte, In.

February Birthdays

Janet KC9HUG 25th

Dan KC9UKX 14th

A Modern Antenna Story or What's Wrong Here? by Levi, WB9CAO

Most hams are aware you can be more effective in your attempts to contact other hams by upgrading your antenna versus putting an amplifier on line. Since most hams are frugal, an antenna change would be cheaper and save the amplifier cost. This is a story of a ham who is aware of this and wants to hear better as part of his upgrade. He has already decided to install a new antenna system. What's the first thing to do? Well, you talk with other hams and learn what has worked best for them - what are they using now? Then he starts putting his plan together.

His antenna tuner is an older MFJ-262C and has problems getting the SWR down on some of the frequencies he operates. Two things are now obvious. Get a different tuner or put up a different antenna system - or both. Guess what - he goes to the Fort Wayne Hamfest and buys an LDG 600 Pro **automatic** antenna tuner. This makes him happy for a while - a short while.

He also has learned several hams have used or are using a **doublet** antenna. Now, build or buy? He decides to buy to speed up the changes. MFJ has a nice doublet listed for a reasonable price. He orders one. When the antenna arrives, he discovers the antenna is nothing more than a **G5RV** with 100 feet of feed line!! What to do with the excess? Sure - just cut the excess away. Now he asks why he did not just buy a G5RV in the first place and save \$15.00.

While arranging to put up a new support system, he discovers the LDG tuner is not set up for a balanced feed line. Yes, it has only unbalanced provisions. Should he just connect the ladder line to coax then to the LDG? Not the best idea he finds out. What about a balun? Not such a good idea either. The balun may overheat at some frequencies. Maybe put the balun at the antenna instead at the shack or radio? Not a bad idea, but what to use. The feed point at the antenna may be much higher impedance than some baluns are

designed for. Maybe, he thinks, I'll use a 9:1 balun at the antenna and run coax back to the radio. Will this work?

Where do I find a 9:1 balun? Well, he finds that Amateur Electronics sells a 9:1 balun made for Radio Wave rated 1500 watts. Looks good. This balun can be used at the antenna terminals the way it is built. He can now run the coax as he wanted. But, another \$40 out of pocket plus new coax. How much more is this antenna system going to cost - he still hasn't worked out the support system.

Well, it will be spring soon and he might get his dream antenna system up and working in time for Field Day - maybe? Stay tuned. This could get interesting. Anyone been through this before? Any ideas to help that ham?

Another Antenna Tip

by Levi, WB9CAO

One antenna style used by many amateurs is the inverted 'L'. Part of the antenna is vertical then it turns horizontal. It is popular where high supports are not available or limited. It is useful for both "DX" and local contacts.

As the vertical portion is shortened, the low angle vertical plane is reduced. The horizontal top section then comes in to play. The high angle radiation then is a result of the antenna being close to the ground.

One drawback to this antenna is noise. The 'L' tends to build a static charge. To minimize this problem, many stations have added a 1 megohm resistor across the terminals where the vertical portion enters the 'shack'. Use a 2 watt carbon type resistor for the shunt. Do not use wirewound or metal-oxide resistors here.

This arrangement will not otherwise affect of the performance of the antenna, but will reduce the static buildup and may offer some lightning protection in fact. Note also, if you put one of these antennas up, it requires a good ground array - the more radials used, the better.

Seen and Heard

by Levi, WB9CAO

Are you interested in Science and Technology? Let us know at w9joz@w9joz.com. Here is more Space Technology Seen and Heard.

NASA launched another in its space exploring probes with the Mars Science Laboratory on November 26, 2011. This probe will take about 254 days to reach the planet. This launch carries another roving research vehicle called Curiosity. Previous probes have found evidence of past water and per chlorate - a potential food source for microbes.

Curiosity is unique in that it will have a 'crane' platform to lower it the last 66 feet or so to the floor of the landing site. The sky crane is essentially a rocket powered backpack. It will lower the rover, unhitch, and fly away to leave the rover clear to perform it's mission. The rover is expected to work for 2 years. This probe / rover uses a nuclear-powered battery producing three times what the power solar panels had for Spirit and Opportunity. This will work in dusty and dark situations. Keep in mind, previous probes were designed for three months to less than one year.

Russia just recently tried a probe to Mars. It failed when the spacecraft became stranded in low-earth orbit and fell to earth. This probe was one of the largest space debris items to fall back thru the atmosphere.

Want to read more about this? See the February issue of Popular Mechanics.

From the Technology basket - have you heard your GPS may be in jeopardy?

A company named LightSquared based in Reston, Va. has filed a complaint that their right to use assigned frequencies for high-speed broadband networks is being interfered with.

The company has rights to use a section of the electromagnetic spectrum that abuts the portion used by GPS satellites. A panel of experts did a study for nine government departments and agencies and determined the L-S plan can't be saved without dangerous interference with GPS and want L-S to abandon plans. Even with 'filters', there are older, cheap GPS units that would be affected. Even first responders, agriculture, military, and aviation would be affected.

LightSquared has accused the panel of bias and asked the FCC to retake control of testing. They claim the panel has ties to the GPS industry who sold poorly designed equipment. They also claim the panel didn't adequately investigate the impact of filtering technology.

Stay tuned - we all have some form of GPS that could be affected. Can you say 'RFI'?

Have you heard - the humble leap second may be no more.

Frank Jordans, Associated Press, reported from Geneva that governments are considering abolishing the 'leap second'. The leap seconds are necessary to prevent atomic clocks from speeding ahead of solar time. The leap seconds are added at irregular intervals, effectively stretching atomic time by a heartbeat to make up for the irregular wobble in the Earth's rotation.

Eliminating the leap second has been gaining support for some time. In a world increasingly reliant on computers for mission-critical measurements, any glitch could be costly as well as fatal to some. Satellite navigation systems like GPS do not use leap seconds, which adds confusion. When the 'leap' takes place, it is in the middle of the day in Asia and Australia, which is particularly inconvenient.

Astronomers are among those objecting to the change. They need to be able to compare observations spanning thousands years as part of their work. Rocket launches are not scheduled on days when a leap second might occur. Killing off the leap second would result in atomic clocks slowly outrunning the solar day by a rate of about 90 seconds a century. Imagine when, in the future, atomic clocks say it is midday and the sun has not yet come over the horizon....

Unless changed soon, the next leap will be June 30.

It's mid January and Club Meeting time, but by the time you read this, it could be early February. That being said, this could be old news when you get it. In the February Popular Mechanics I see there are big changes coming for at-home TV. Toshiba now has a TV with 3840 X 2160 pixels. It is on sale already in Japan. That's four times the high definition of good receiving sets on the current market. Really high definition. They report there is little 4K content to watch for now, but it can show autostereoscopic 3D without glasses. The set featured is the 55 inch Regza 55X3. Watch for it and be prepared to spend a little. No, they did not give the price for one.

From the Technology selections, have you heard of the Flywheel Hybrids? Several car companies have joined to look into a carbon-composite flywheel. This wheel is lighter and stores energy for peak demand times. In early tests, fuel-efficiency improvements of 22.4 percent have been realized. In other words, as much as 80 hp can be returned to the drive train. Porsche has used one in a race-ready concept car. And when it is time to dispose of the vehicle, the flywheel does not require special disposal like chemical batteries would.

In a related field, what about a natural gas vehicle. Want to convert yours? Be careful, it could cost you in several ways. Conversions can be done for as little as \$6000 and up to \$12,000. After that cost, consider another \$4500 for a compressor. And be prepared for as much as 22 hours to fill up. Oh, yes, be prepared to stay close to home - there are no filling stations in most areas yet. Yes, there is an abundance of natural gas, but the end result will save only some 4000 gallons of gasoline at today's prices before you have recovered your costs. Is it worth it yet?

One final thing to consider - do not do this yourself. You could run into a violation of the Clean Air Act rules - at \$5000 a day for not having a certified compressed-natural-gas (CNG) installer do the job.

Have you heard of the new fiberoptic cable crossing the Atlantic? This line will handle financial data only. That's right - no voice or internet data. It will be some 310 miles shorter than existing lines and therefore will be 5 milliseconds faster. But what's that compared to the 4000 miles of the others?

This cable will allow very fast response to net trading and some traders will have first chance to place an order when stocks change value. First in gets the best deals.... Today, much of the trading is done with computers and this gives a big advantage for moving stocks and making big returns.

And did you know light in the submarine cables travels about 62 miles in a millisecond? Fast, huh? In some waters, the cable has to be buried 10 feet under to protect from commercial fishing trawlers. At a cost of some \$300 million, this line should be in service in 2013.

Popular Mechanics January 2012

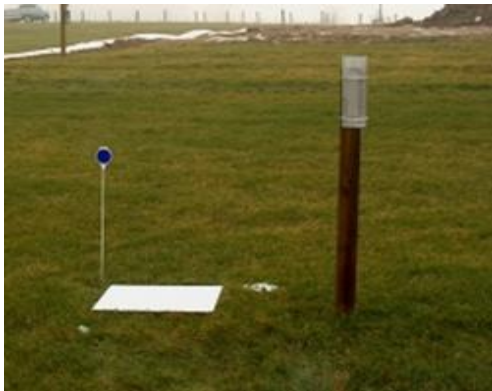
Submitted by Tony, W9AL

How to Measure Snow

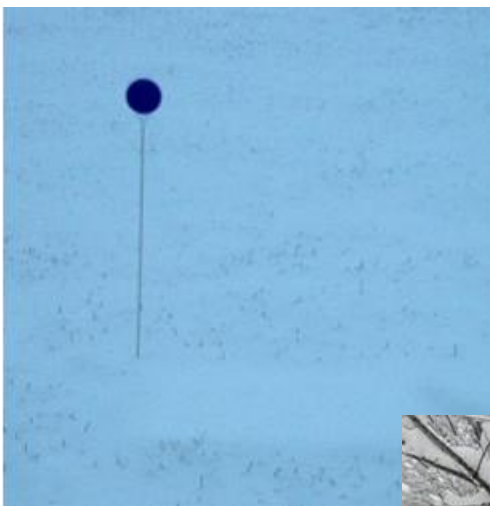
Accurate and timely snow measurements are critical to NWS winter weather forecast and warning operations. However, obtaining accurate observations can be challenging at times. The following is a brief summary of snow measurement techniques. Please follow the procedures below as closely as possible in order to provide accurate snow reports. We appreciate your efforts!

Preparation

Before the snow season, observers are instructed to prepare for snow by placing their snowboards in the yard and marking them in order to find them after a snowfall. Snowboards ensure accurate measurements because you know when using a snowboard that you are measuring off a solid surface. There are times, especially early in the season, when snow can be perched on top of the grass in your backyard. Pushing your snow stick to the ground in these instances may overestimate the actual reading. To measure snow, use a snow stick measured in tenths of an inch or use a simple yardstick.



Snowboard in yard marked by a reflector
image courtesy CoCoRaHS



Snowboard after snowfall
image courtesy CoCoRaHS

Snowfall (new snow)

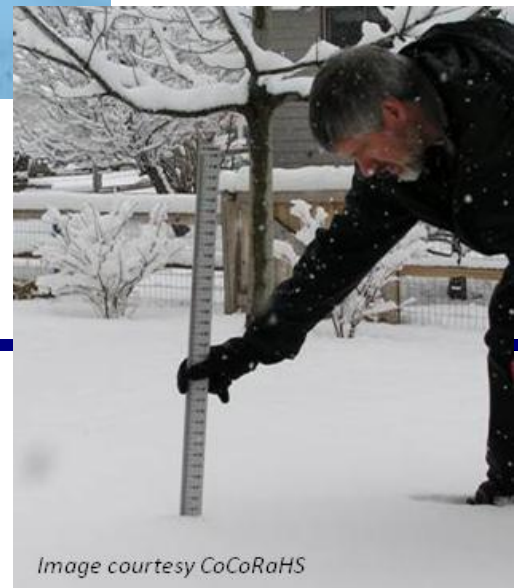


Image courtesy CoCoRaHS

Snowfall is the accumulation of new snow and ice in the past 24 hours prior to melting or settling. Snowfall is measured to the nearest tenth of an inch (0.1). The best way to get an accurate snowfall measurement is to use a snowboard. Measure the amount of new snow on your snowboard, record it, then sweep it clean and set in on top of the snow and you're ready for your next reading. Snowboards work well when little or no wind is involved. However, when windy conditions result in blowing and drifting, your snowboard is more than likely not representative of the true amount that fell. When wind is a factor, take your snow stick and record several readings around your yard. Average those readings to get a representative snowfall measurement.

Total Snow Depth

Snow depth is the total depth of all snow on the ground at observation time. Some observers use a separate board that they do not clear for total snow depth readings. Similar to snowfall readings, if wind is involved one must take several readings around the area and average them for an accurate snow depth value. CoCoRaHS observers measure snow depth to the nearest half inch.

NOTE: When taking several readings in your yard to determine an average snowfall or snow depth reading, try and find areas with an even layer of snow that has not experienced significant drifting. Also avoid artificial drifts such as snow banks resulting from snow removal observations.

Reporting Your Snow Measurements

Snow reports are also welcome from trained spotters and the general public using the following links:

E-spotter for trained spotters <http://espotter.crh.noaa.gov/>

References

More info on NWS snow measurement guidelines can be found here
<http://www.nws.noaa.gov/os/coop/snowguid.htm>

Learn more about CoCoRaHS <http://www.cocorahs.org/>

Until next month,

73

John, W3ML