



Sinewaves



STONEWALL JACKSON AMATEUR RADIO ASSOCIATION

Meetings: 3rd Thursday of each month, 1930 hrs at Saint Marks Lutheran Church RT19/98 Clarksburg
SJARA Tuesday Night Net

*This net meets each Tuesday evening at 2100 hours utilizing the N8FMD Repeater on
147.210 MHz with PL Tone of 103.5*

September 10, 2010

<u>Net Control</u>	<u>Date</u>
1. K8TPH.....	August 24, 2010
2. K8WWW.....	August 31, 2010
3. KD8FDD.....	September 7, 2010
4. WD8NSC.....	September 14, 2010

Next Meeting Thursday, September 16, 2010

Minutes SJARA Meeting August 19, 2010

The August meeting of the Stonewall Jackson Amateur Radio Association was called to order by President KD8FDD, Jason at 19:30 on August 19, 2010.

The minutes of the previous meeting of July 15, 2010 were approved as listed in the Sinewaves for August.

Treasurer's report was presented by K8TPH, Dick Balance \$1400.71 and a motion to accept the Treasurer's report by WD8NSC and seconded by KB8WRZ.

Old Business: There was no old business except questions if there was going to be a Special Event Station at the State Convention being held at Jackson's Mill this weekend. To the knowledge of all present, there is no Special Event Station being held by any other club at the Mill.

New Business: KD8FDD announced that there is a new IRLP link on the repeater in Buckhannon on a frequency of 146.410 with a PL tone of 173.83.

K8TPH announced that there is a new service on the SJARA Web Site showing the Wave Propagation for each day.

KD8FOH wants to know if the club could furnish expertise at the new Boy Scout camp in Fayette County at "The Summit". They will be installing a new tower for use as a repeater around the camp. The camp should be in operation by 2011 and possibly a national jamboree in the future. Brian noted that volunteers are needed mostly for supervision with little physical labor. More information:

<http://www.wvcommerce.org/travel/journal/scouts/default.aspx>

<http://www.visitwv.com/vacation/boys-scouts-of-america-west-virginia/>

KD8FDD announced he would need help at the JOTA to be held

at Camp Mahonegon with a date in October. More information will be available at the September meeting. KD8FDD asked for volunteers for Net controls until next meeting. K8TPH Aug 24, K8WWW Aug 31, KD8FDD Sept 7, and WD8NSC Sept 14 Meeting adjourned at 20:10. Next meeting will be September 15, 2010 at 19:30.

It's a Shame

I this is a strange heading for an article on Ham Radio in a newsletter. What am I talking about. "It's a shame that the FCC did away with the CW (Morse Code) in Amateur Radio.

I know that there are many that would have never become a ham if they had to copy CW at 5 or 13 WPM to qualify for an Amateur License. Please just bare with me and I will explain before you jump all over me.

Doing away with the CW qualification is killing the lower end of the 40 meter band. You hear less and less CW so that means fewer hams operating a very exciting and interesting mode of communications. Of course you hear those old timers with the speed keys and automatic keyers running 20 plus WPM.

I am not saying that the CW requirements be reinstated, that is past so let's forget about that. One portion of the 40 meter band that is alive and very active is 7.070 MHz plus or minus a few KHz. That's where you find digital signals on 40 meters. What would be wrong to open the lower end of 40 meters or just a portion of the CW only section to one or more of the digital modes for Technicians? They could be restricted to a very narrow band (say 5 to 10 kHz) just for digital modes of less than 170Hz bandwidth and a power limit of less than 50 watts. They would take up less spectrum than just one of those annoying broadcast stations eating up all of that spectrum.

Many of the new Technicians just lose interest in ham radio because you can only put up a finite number vertical or yagi antennas and see how many repeaters you can hit or you might be lucky and have a few band openings and work two or three hundred miles, if you are lucky. You can only talk to the few that have mobil rigs in their vehicles or use them as a base station and monitor the local repeaters. There is very little excitement to that. What if you could get on the air and talk to Europe, Russia, the Middle East, Africa, or Australia. This is just a few of the ones I have worked with just 20 watts using a G5RV up 30ft on 40 meters in just one

day. Technicians are hesitant to invest in an HF rig just to get on 10 meters. If the Technician knew that all the money put into a HF rig would give him the chance to work around the world. Once the Technician has a HF rig and he can talk around the world he/she would want that General License to gain all of those modes and frequencies available throughout the HF spectrum. Turned on my rig today and the first station I heard was a station calling CQ. It was LY600V a special event station with a very strong signal. (You can look it up on QRZ and find out who it is).

A New Idea

Well, while we are waiting for the FCC to take up my recommendation there are things a Technician can do to peak interest. First there is Packet or APRS but that can get expensive with limitations as to use. To some this is very interesting and I will admit I have always had an interest in both Packet and APRS but when my interest waned I could always go back to the HF bands and work any of the other modes just to keep my interest peaked. You can also work Packet and APRS using the various Satellite repeaters or digipeaters, been there done that, but I still go back from time to time.

One thing I have been interested in but have never tried since I left the Navy is Moonbounce. We had about 9 bays of equipment in the 1960s and 70s and very expensive commercial antenna to accomplish Moonbounce but now days with computers it is a lot easier. You say "Moonbounce", who can do that? You can. All it takes is either a VHF or a VHF/UHF mobil (base rig) a

computer, these you probably already have, an interface, either build one or buy one for around \$40, a 5 to 10 element yagi antenna. The yagi is easy to build and there are a lot of articles telling you how you can build one for as little as \$20. Here's one:

<http://www.iw5edi.com/wp-content/QM7144MHz.PDF>

A few websites to read to learn more about Moonbounce.

Moonbounce for beginners:

<http://www.vhfdx.info/jt65bintro.html>

PC to Radio Interface:

<http://www.vhfdx.net/wsjtinterface.html>

Download WSJT7 free from:

<http://www.physics.princeton.edu/pulsar/K1JT/wsjt.html>

WSJT setup procedure:

<http://www.vhfdx.net/wsjtsetup.html>

Wideband Scanner

Watch for "Civil Aviation Monitoring" columnist Tom Swisher's "First Look" (September) and "Tech Showcase" (October) on Uniden's groundbreaking new scanner, the HomePatrol. Don't know how many Hams would be interested but it looks like a very small scanner that can be taken with you anywhere. Most of the frequencies are listed in a data base included with the Uniden HomePatrol. It can also be programmed with you home computer with software included. You can check a preview of the HomePatrol now on YouTube at <http://www.youtube.com/watch?v=i3AF1GTh7G8>



Google X Prize

The Google Lunar X PRIZE is a \$30 million international competition to safely land a robot on the surface of the Moon, travel 500 meters over the lunar surface, and send images and data back to the Earth. Teams must be at least 90% privately funded and must be registered to compete by December 31, 2010. The first team to land on the Moon and complete the mission objectives will be awarded \$20 million; the full first prize is available until December 31, 2012. After that date, the first prize will drop to \$15 million. The second team to do so will be awarded \$5 million. Another \$5 million will be awarded in bonus prizes. The final deadline for winning the prize is December 31, 2014.

Just Pocket Change



The do-it-yourself movement has taken its first steps across the final frontier: space. A California company, Interorbital Systems, is offering a personal satellite kit that it says will open up space research for schools, hobbyists and amateur engineers. For just over \$8,000, the company provides everything from batteries and an antenna to solar panels and a microcomputer. Once you've built your satellite and designed your experiment, the

company will launch it into space on its own rocket. The first rockets are set to launch next October. Cost estimated to be \$12.500 for each module to be included in each launch.

What time is it?

How accurate is your clock? If you have doubts and want to make sure you have the correct time, here is a list of time and frequency standards through out the world. Some of the new digital modes demand the correct time to complete connections and hold sync in decoding digital signals. Here is a list and where they are located. Most Amateur Receivers do have the capability of tuning the frequencies listed below. The miles listed are considered ground wave but most of these stations can be heard at a much greater distance utilizing sky wave.

For both stations WWV/WWVH the transmission mode is DSB AM. Steady tone modulation is 50%. BCD time code modulation is 50%. Second pulses and minute and hour marker modulation 100%. Voice modulation is 50%. The antenna polarization is vertical.

- 2500 kHz** WWV WWVH 2.5 KW
358 Miles Fort Collins, CO
WWVH 5KW 3070 Miles
Kauai, Hawaii.
- 5000 kHz** WWV 10 KW 358 Miles
WWVH 10 KW 3070 Miles
- 10000 kHz** WWV 10 KW 358 Miles
WWVH 10 KW 3070 Miles
- 15000 kHz** WWV 10 KW 358 Miles
WWVH 10 KW 3070 Miles
- 20000 kHz** WWV 2.5 KW 358 Miles

- 3330 kHz** CHU 3 KW 1830 Miles
Ottawa, Ontario, Canada.
- 7335 kHz** CHU 10 KW 1830 Miles
- 14670 kHz** CHU 3 KW 1830 Miles

3810 kHz HD2 IOA 1 KW 3375 Miles
Guayaquil, Ecuador.

4996 kHz RWM Unknown 5550 Miles
Moscow, Russia

9996 kHz RWM Unknown 5550 Miles
14996 kHz RWM Unknown 5550 Miles

4998 kHz EBC 10 KW 5350 Miles
San Fernando, Cadiz, Spain

15006 kHz EBC 10 KW 5350 Miles

Solar Flux K and A Index

When someone tells you that the flux is up to 200 and the K is 3, do you know what they are talking about?

One of the key skills for any HF DXer is to know how to judge what band conditions may be like. Conditions may be excellent one day with many stations audible from all over the world, but a few days later it may be that only a few stations are audible. To be able to gain an idea about conditions, three main indices are used: solar flux, and the Ap and Kp indices. A good working knowledge of what these numbers represent and what they mean is an advantage even for the ham with most well-equipped station.

Solar Flux

A measure known as the solar flux is used as the basic indicator of solar activity, and to determine the level or radiation being received from the Sun. The solar flux is measured in solar flux units (SFU) and is the amount of radio noise or flux that is emitted at a frequency of 2800 MHz (10.7 cm). The solar flux is closely related to the amount of ionization and hence the electron concentration in the F2 region. As a result it gives a very good indication of conditions for long-distance communication.

The figure for the solar flux can vary from as low as 50 or so to as high as 300. Low values indicate that the maximum useable frequency (MUF in August Sinewaves) will be low and overall conditions will not be very good, particularly on the higher HF bands. Conversely, high values generally indicate there is sufficient ionization to support long-distance communication at higher than normal frequencies. However, remember that it takes a few days of high values for conditions to improve. Typically values in excess of 200 will be measured during the peak of a sunspot cycle with high values of up to 300 being experienced for shorter periods.

K Index

There are two indices that are used to determine the level of geomagnetic activity: the A index and the K index. These give indications of the severity of the magnetic fluctuations and hence the disturbance to the ionosphere. The first of the two indices used to measure geomagnetic activity is the K index. Each magnetic observatory calibrates its magnetometer so that its K index describes the same level of magnetic disturbance, no matter whether the observatory is located in the aurora regions or at the Earth's equator.

I don't want to get into the math in figuring the Kp Index at any given time. Just remember that the K Index has to do with what is called the Aurora effect and how far south of the North Pole it extends or how far north it extends from the South Pole. The Index numbers run from 0 to 9. Zero is the least effect or the nearer the

Aurora effect is to the Pole and nine is the maximum distance the Aurora effect extends south.

A Index

The other index is the Ap Index which is a measure of the general level of geomagnetic activity over the globe for a given day. A mean, 3-hourly "equivalent amplitude" of magnetic activity based on K index data from 11 Northern and 2 Southern Hemisphere magnetic observatories between the geomagnetic latitudes of 46 and 63 degrees. The Ap Index runs from 0 to 400.

Speaking of the Kp and Ap indices, they are used to determine the K and A Indices that are published each day.

A Index is a daily index determined from eight Ap index values.

K Index is a quasi-logarithmic local index of the 3-hourly range in magnetic activity relative to an assumed quiet-day curve for a single geomagnetic observatory site.

Now all of this may have an effect on how good the bands are or how bad the bands can be but it is just a prediction. You may have a high Solar Flux, a high K index, and a high A index and the bands can be completely dead in your particular area or extreme good for long range communications. It is just a rule of thumb and over a long period of time usually is a very good rule to follow.

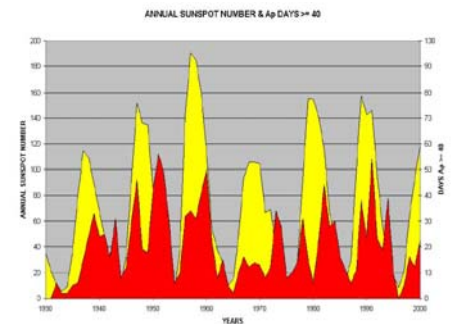
The following is a chart showing the relation of the K index and the

A index with meanings of each level.

A	K	Comments
0	0	Quiet
2	1	Quiet
3	1	Quiet
4	1	Quiet to unsettled
7	2	Unsettled
15	3	Active
27	4	Active
48	5	Minor storm
80	6	Major storm
132	7	Severe storm
208	8	Very major storm
400	9	Very major storm

HF Propagation

<http://www.sjara.org>



WWVA

August 4, 2010

WWVA(AM) in Wheeling W. Va., lost all three towers during a severe thunderstorm. The Wednesday storm knocked the entire three-tower phased array for the 50,000 watt AM to the ground. The array is in St. Clairsville, Ohio. Studios for the talk-formatted Clear Channel station, known as "The Big One," are in Wheeling.

Engineering crews were on site working to get some temporary towers in place as soon as possible, to return the station to normal programming to the 1170 signal. The FM station remains on the air.



OLD IS WHEN

You don't care where your spouse goes, just as long as you don't have to go along..

SJARA Tuesday Night Net

147.210 MHz PL tone 103.5

August. 2010

Sessions	5
Total Check-ins.....	35
Total time.....	1 hr 15mins
Traffic.....	0
