



March 2009

# MARC News

## *Greetings from the Pres...*

Hello everyone! I hope you all had a great Valentine's Day. It was a good one at my house. Not much has been happening in my neck of the woods. I have my building completed and I have built a couple of work benches. I added to one of them some shelves and it really got to looking like a radio desk. I started to envision my "stuff" out there, so I have decided to move my radio equipment to the building and have a real life "radio shack". Some of the logistics will include removing my coax from the corner of the house over to the wall of the shack. This shouldn't be very hard and the distance from the centerpoint of my 80 meter inverted V to the shack is about the same as it is to the corner of the house. I will move my vertical next to the shack which will not be a problem at all. I want to rehang my 40 meter dipole but I will have to put it a little lower than my 80 meter. It should all come together nicely inside the shack. I will have wireless internet and I will investigate running a cable out there for an old tv. Those are my plans anyway. If you have done a similar project, please let me know and if you have any pointers, send them my way.



This month, we will have Chris Fletcher, Editor of the Daily Herald newspaper as our guest speaker. Please make plans to attend and participate in what will be a very good meeting as he presents the ins and outs of running the newspaper in our community. It will be at Shoney's around 7:00. Get there early to eat, meet, and greet.

Many thanks to Art for his presentation and talk of alternative fuel. He did a wonderful job in telling us about the history of automotive fuel up to the present types of fuel and told of the current testing and experimenting of fuels and engines for the future. It was very informative and as always, there were great questions and thoughts presented after the talk.

The annual bike race will be here before you know it. March 29<sup>th</sup>, Sunday, will be the day. We will need at least 6 volunteers and I am quite certain we will have more than double that. Please make plans to attend. It is very fun and always gives us a chance to practice our communication techniques and skills. Speaking of this, after the triathlon, there were some suggestions made as to what a spotter might want to bring to an event such as this for convenience and comfort. These were some of the items mentioned to build a good kit. These are just suggestions but I feel it contains some of the standard items of any "go-kit" for a day. I know I probably left out some things but here goes: *continued next page...*

***Meeting Tuesday 7PM March 10 @ Shoneys***

- Chair
- Handy talkie with extra battery
- Earphone/speaker mic
- Map of race course (pdf. of race course is on columbiacyclingclub.com)
- Pocket knife
- Pencil and paper
- Watch
- Cell phone
- Phone numbers of other spotters and bike officials
- Gmrs radio (the bike club uses these)
- Scanner (can monitor EMS on site)
- Plenty of water
- Snacks
- Ibuprofen, antacids
- Sunscreen
- Insect repellent
- Moist towelettes
- Toilet paper
- Sunglasses
- Poncho/rain suit
- Jacket, cap, gloves (get weather report for the day. March weather can be CRAZY)
- Length of rope and a few carabineers (hang stuff in tree)
- First aid kit to include tape, gauze, bandages (sometimes bikers want band aids)
- Connectors like combinations of so-239, BNC, (for auxiliary antennas)



Whew! Sounds like a lot of stuff doesn't it? But, it will all fit (except for the chair), in a small daypack/school backpack. And even with the camp type chair in a carry bag, you can easily carry this and walk to your observation point. You will be set for the day and will be comfortable for a great experience of helping. Please let Bill Reed or me know as soon as possible if you can help.

I look forward to seeing you at the club breakfast Feb. 28<sup>th</sup> at Stan's at 9:00.

Please send me some more Shack Photos. Winner will be announced at the March meeting.

**10-15-20M QUADS**

*Pre-Cut	*Pre-Tuned	*Triband
	Bamboo	Fiberglass
Two Element	\$59.95	\$99.95
Three Element	\$99.95	\$149.95

*New*

- ROTATE WITH TV ROTOR
- HIGH F/B RATIO
- VERY LOW SWR
- LOW Q BROADLY TUNED
- HIGH GAIN
- EASY TO MATCH
- LOW WIND RESISTANCE
- ONE FEED LINE FROM XHTA FOR ALL 3 BANDS NO SWITCHING

WRITE DEPT. A  
406 San Air Dr.  
Temple Terrace, Florida  
Phone 908-4213

**Skylane PRODUCTS**

**NEW!**

**THE IMPROVED NIKEY**

Now with ball bearing pivots. The only key especially designed for use with all types of Electronic Keyers. Independent Out-and-Back Levers make your list sound "Truly Automatic." Standard Model \$17.95, Deluxe Model \$19.95. Check or Money Order.

**THE PRODUCTIVE TOOL & MFG. CO., INC.**  
9 Market Street  
Stamford, Conn.

*Until then, 73's  
Greg KF4ZKV*

**Ads  
from  
1964  
QST**

# Coming Events



**Club Meeting....** We will have Chris Fletcher, editor of the Columbia Daily Herald newspaper, to explain what is involved in putting out the daily paper. The meeting starts at 7PM but most start arriving around 5:30 so they can finish their meal before the meeting.



**VE Testing....** takes place 9AM at the Pleasant Heights Baptist Church on Trotwood Avenue. If you hold a present license or CSCE be sure to bring us a copy along with the \$15 testing fee.



**Club Breakfast....** 9AM at Stan's on Bear Creek Pike. This is a very informal gathering, no agenda, no speaker, no nothing. Just good conversation and a good breakfast. Join us to swap lies and stories.



The Columbia Cycling Club will be sponsor the bike bike race at Chicasaw Trace Park again this year and the MARC will once again be providing emergency communications. It's really a fun day to be out in the fresh air and if you haven't seen these guys tearing through the woods, you will be amazed. Charge up the batteries for the HT and join us. We will gather at the park shortly after 8AM.



**Faster CW-  
BETTER READABILITY**  
Sole license under  
Patent No. 3,098,898

Preferred by better operators  
**TRY IT! 10-day money back  
guarantee. \$19.95**

AUTRONIC — the finest. For any keyer. Improve your list. For right- or left-handers. Velvet touch. Micrometer screw adjustments. No contact bounce. Big silver alloy contacts. Many exclusive features. Small, modern, attractive. Proper weight distribution. Thousands used by commercial, military, and ham operators. Also try the companion  
AUTRONIC KEYSER — \$69.50. Best for reliability, performance, results. Free brochure.

**ELECTROPHYSICS CORP.** Since 1929  
3017 West Coast Highway, Newport Beach, Calif.

Ads  
from  
1964  
QST

ENJOY EASY, RESTFUL KEYING  
With **VIBROPLEX**

Send the heaviest key instead of  
work with the SEMI-AUTO-  
MATIC Vibroplex. It actually  
does all the pen-tiring work  
striking work for you. All-  
purpose 20 amp. Heavy  
speed. Standard stroke have  
patented Chromite tip pins  
and gray base. Deluxe mod-  
els also include Chromite  
base and red finger and  
thumb pieces. Fine models to choose from, priced at \$17.95  
to the 24K Gold Plated Base "Presentation" at \$22.95.

**VIBRO-KEYER**  
Works instantly with any  
Electronic Transmitting Unit.  
Weights 2 1/2 lbs., with a base  
3 1/2" x 4 1/2". The Vibroplex's  
finely polished parts, red  
knob and finger, and thumb  
pieces, standard model \$17.95. De-  
Luxe model includes Chromite  
Plated Base at only \$22.95.

Order today at your dealer or direct  
**THE VIBROPLEX CO., INC.**  
833 Broadway New York 3, N. Y.

**FREE  
Folder**

## *Old Hams and DSP Filters*

DSP (Digital Signal Processing) Filters use state of the art DSP technology which greatly improves signal clarity by reducing or eliminating Noise (QRN) and interference (QRM). DSP Technology has existed for many years but has always been very complicated and expensive. Recent advances in integrated circuits have greatly increased the processing power and reduced the size of the DSP units and lower the cost.

The heart of any DSP system is the Digital signal processor. Almost any Microprocessor can perform DSP, such as a personal computer. But only very fast or special function processors perform DSP in real time. DSP commands are tailored to the type of instructions used in signal processing. The use of special DSP commands allows a DSP filter function to be completed in very few clock cycles, usually one. The CPU in a typical personal computer would require a long set of instructions and therefore many clock cycles to perform the same function.

The DSP filter converts the analog audio signals from your receiver to digital information. This conversion is achieved by sampling the audio signal many thousands of times per second with an analog to digital converter. The result is a string of digital numbers that represent the amplitude and frequency of the analog input signal. The end result is a digitized signal with undesired signal components either reduced or removed and the desired components enhanced. The processed digital signal information is converted back to an audio signal by a digital to analog converter and sent to the audio amplifier and out to the speaker.

This is a brief description of a DSP Unit. The DSP unit can be external or internal to the Radio. The external units are used mostly on older Radios and these are the audio units that take the signal from the speaker out put. They work good but not as well as the radios with the internal units that get there signal from the IF stage of the radio. I have a MFJ DSP unit that I use with my old Swan and Kenwood TS 820 rigs. It works very well.

The Kenwood TS 570, Icom 706, IC718, Yaesu FT 897 and FT857 radios all have DSP Units that use the audio signal after the audio amp like the external units and work very well. The Yaesu FT 1000s and FT2000 and FT950 and FT450 also the newer Ten Tec and Kenwood TS 2000 and Icom 746 an 756 Radios use the signal from the IF stage and are 16 bit and 32 bit processors used in the DSP processing. I have a Ten Tec Pegasus and a Yaesu FT 450 that is all DSP. The Filters for SSB and CW are DSP and are programmable to the band width that you want like 2400 or 1800 hZ for SSB and 500 or 300 hZ for CW plus has all types of noise reduction. These are low cost radios. The high cost radios do much more but are more complicated to work with (you will need a good User Manual) and some times software on your computer to program them. Most will hook to the computer with a serial or USB port and you can run the radio from the computer with the right software and some can be run from over the Internet. I have used three makes of DSP Units over the years ,MFJ unit works well but is hard to set up. The Old Radio Shack DSP Unit , was one of the first low cost unit out and would work fair for one of the first ones on the market. The best one that I have used is the Time Wave unit it is very easy to set up and use and worked as good as the MFJ on my old radios. I used the Time Wave 59+ on the Heathkit SB 101 an 102 and it worked fine. I hope this little bit of information on DSPs was helpful.

Art,WD4NCO



## *notes from the February meeting....*

We had 20 people at the February meeting where Art WD4NCO gave a very informative talk on "Alternative Energy". We learned quite a bit about burning alcohol or ethanol in our vehicles. At the March meeting our speaker will be Chris Fletcher who is the Editor of the Columbia Daily Herald newspaper. We will learn what goes into putting out the paper everyday. Bring your questions.

We had two new members at the meeting. Paul WB0CJB has joined our club. He has recently moved to the Columbia area. He has been a ham for several years. Also joining the club was Andreas KJ4JEK who has just recently joined the ranks of the ham radio community. Welcome to both of you to the club.

Items discussed:

Treasury Report: We currently have a balance of \$967.

=====  
APRS digipeater rig needed. The club has come up with 4 options so it looks like the APRS Digipeater may soon be back in operation.

=====  
440 repeater update. We are still trying to contact a tower climber to install the 440 antenna. Steve N1LHW mentioned another climber that we will look into.

=====  
The big Bike Race at Chicasaw Trace Park will be Sunday March 29. Mark your calendars and get the extra HT batteries charged up. It's a fun day out in the fresh air and if you have never seen the bikers flying through the woods you will be amazed.

=====  
April meeting..... will be kit building night and will take place at Greg's home. I'm sure more details will be coming at the next meeting.

=====  
May Meeting..... For our May program, Steve N1LHW will speak to us about Voice over IP commonly referred to as VOIP. Learn how to talk to people in far away places with a little help from the internet.



## *Tidbits....*

You've all heard of YouTube..... but have you seen CQtube? When the bands are quiet check out <http://www.cqtube.com/> for several ham radio videos to entertain yourself.

## *batteries... batteries...batteries...*

The following is an excerpt from an article by batteryuniversity.com. I ran across this article and it gives a very basic introduction to the various types of batteries. There are many articles on batteries and pros and cons for the different types. Most, if not all, of us radio people have some type of battery backup. It would be interesting to hear what type of batteries you have for your radios and why you use them. Let's hear about your battery set up. I know Bill, K4BX, has expressed an interest in sharing his battery story in a news article. I just wonder how many different types of batteries we have in our homes. Anyone willing to check around? I bet we would be amazed to hear the results!



Below is a summary of the strength and limitations of today's popular battery systems. Although energy density is paramount, other important attributes are service life, load characteristics, maintenance requirements, self-discharge costs and safety. Nickel-cadmium is the first rechargeable battery in small format and forms a standard against which other chemistries are commonly compared. The trend is towards lithium-based systems.

**Nickel-cadmium** - mature but has moderate energy density. Nickel-cadmium is used where long life, high discharge rate and extended temperature range is important. Main applications are two-way radios, biomedical equipment and power tools. Nickel-cadmium contains toxic metals.

**Nickel-metal-hydride** - has a higher energy density compared to nickel-cadmium at the expense of reduced cycle life. There are no toxic metals. Applications include mobile phones and laptop computers. NiMH is viewed as steppingstone to lithium-based systems.

**Lead-acid** - most economical for larger power applications where weight is of little concern. Lead-acid is the preferred choice for hospital equipment, wheelchairs, emergency lighting and UPS systems. Lead acid is inexpensive and rugged. It serves a unique niche that would be hard to replace with other systems.

**Lithium-ion** - fastest growing battery system; offers high-energy density and low weight. Protection circuit are needed to limit voltage and current for safety reasons. Applications include notebook computers and cell phones. High current versions are available for power tools and medical devices.

As you can see, there are different type batteries for different applications. The biggest thing I got from this excerpt was this: If you are going to buy a battery, do a little homework just to be sure you get the right battery for your particular use.

*Greg KF4ZKV*

## *from the editor...*

First of all I'd like to welcome our two new members to the MARC. A big welcome to KJ7JEK Andreas, a brand new ham. Also a big welcome to Paul WB0CJB, an oldtimer. It was great to hear Paul enjoys Field Day and I know he won't be disappointed in our FD operation. And Paul, if you are reading this check out the video on the w4ggm.org website to get an idea of our FD event. I know it will be great this coming FD to have someone else at the CW station. It has been getting lonely on the CW station.



Thanks to Greg for the Battery article. It's amazing to think about the li-on batteries also starting to be used to power automobiles. If you haven't heard of the Tesla Motor Company go on YouTube and search for *Tesla Roadster Leno* and you will find a great video about the electric car.



Anyway, I run all my rigs on battery power and have been doing so for over ten years. At one time I was a QRP only guy and running on batteries was no problem. Eventually I hooked up the 100 watt HF rig to the batteries also and have had no problems. I use two huge 6 volt deep cycle batteries. They weigh 70 pounds each and I think their main use is in golf

carts. Not being battery smart I went to an Interstate Battery distributor near Nashville and told them I wanted something that may get run down at times. Deep cycle batteries can be run down without damage unlike a regular car battery that is designed to put out a lot of power at once to get a vehicle started. From what I understand it is bad for a car battery to let it get below 10 volts or so.

Like I said when I first went battery power it was for my QRP rigs which only ran 5 watts. So I decided that it would be neat to be solar powered and I bought a 42 watt solar panel to keep the batteries charged. The setup worked very well and I knew I was wasting a lot of solar power so I added the 2 meter mobile rig to the batteries. It wasn't much later that I added the 100 watt

HF rig and all has been running fine.

I have to admit that from time to time I hook up a little trickle charger and top the batteries off. The charger I have is called a battery maintainer and can be left hooked to a battery all the time with no danger of overcharging. When ever I hook it up it usually only takes a few hours and it will cut off after fully charging the



42 watt solar panel, 29 x 35".

*continued next page...*

batteries. Therefore I think it's a waste of time for me to hook up the charger and I don't do it very often.

What kind of operating do I do? These radios are on everyday but I don't always make contacts. Most weekday mornings I do CW with a friend in Ohio for 30-45 minutes. I play on PSK once in a while and I enjoy messing around in the contests that take place on most weekends. I have to say solar/battery power has served me well.

Have you ever wondered if there were any hams near your home? You will be amazed how many hams are around and wonder why you never hear any of them. Anyway go to this web site, <http://www.vanityhq.com/> and on the left side click on N4MC's Ham Locator. The map below is part of Columbia where there are 113 hams with the zip code 38401.

Feel free to send me your stories, pictures, etc. for the newsletter. Send whatever you would like placed in the newsletter to [k4bx@hotmail.com](mailto:k4bx@hotmail.com).

Print a color copy of your FCC license, suitable for posting, framing, or laminating & carrying.

<http://www.ae7q.net/>



*73 de Bill K4BX*  
*k4bx@hotmail.com*

