



# WEST RIVER RADIO CLUB

## DIGITAL DISPATCH

### February - 2007



**Volume 2**

**Issue #2**

**The West River Radio Club, an ARRL affiliated club, was founded in 2004 through the efforts of KA1ZQX, Tim Bell, and N1JSG, Richard Pierce.**

**Our fifty members pride themselves on belonging to an active and productive organization with involvement in many aspects of this great hobby: public service, special events, Field Day, repeaters, emergency communications, contesting and chasing DX.**

**Current officers are:**

**N1TOX, John Borichevsky; President  
KD6MPY, Sean Sanderson; VP  
K1KU, Darrel Daley; Secretary/Treasurer  
KA1ZQX, Tim Bell; Pubic Relations**

## PRESIDENT'S CORNER

### February 2007

#### *CW and Testing*

**W**ell, as we all know, effective February 23, 2007, the FCC has dropped the Morse code requirement from the General and Extra class licenses. This is the end of a long era of a communications mode which many hams enjoyed for years. With every Dit and Dah that was transmitted over the air, there was someone on the receiving end writing down the message he or she was receiving. It was just another language to learn and use with great success of message delivery. The beauty of this mode was that you would never have a "regional accent" barrier to get around. Maybe you might be talking to someone from the south that had a strong southern drawl and you could not understand them, or someone from Down East Maine where they replace the

"R's" with "A's" and put the "R's" where they don't belong. With CW, you could understand everything as it was a sound and not a voice. This is the beauty of mode.

Personally, I disagree with the FCC's decision eliminating the code requirement totally. I would have liked to have seen them remove the requirement for the General License and retained for the Extra Class license. This would have given the ability of Technician Class hams to have HF privileges once they upgraded to a General class, but would retain the code requirement for the next level, which would have made the Extra Class just that, "Extra". If you get your General license the new way, I personally would like you to consider learning code. It has been a standard of ham radio operators for years, and without you carrying on the tradition, it will be a lost art. I am not real good with the code, but I sure am trying my best to learn it better. I hope you will too.

Now, with that said, we will be having a Technician Class Crash Course with a VE Session on March 3<sup>rd</sup> and 4<sup>th</sup> to drum up some new hams in the area. This training will be held in Brattleboro. Then, we will have a 10 week General Class starting on March 8<sup>th</sup> for ones who would like to upgrade their license to General without the worries about the code test. This would be a great opportunity for all Technician Licensed operators to get the new HF privileges you've been seeking and also to upgrade our VEM RACES team operating levels.

In closing, if you or someone you know would like to get a new license or an upgrade, now is the time to do it. We have plenty of registered VE people ready to administer a test for you.

Check out the website for more information on the classes we will be having, and lets make the number of licensed hams grow to new heights as it is a declining art overall. With the new cycle starting up soon, it would be a great opportunity to get ready for that first or next “Trans Global” QSO.

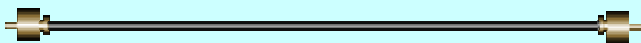
Until next time, keep the sparks flying!!

73

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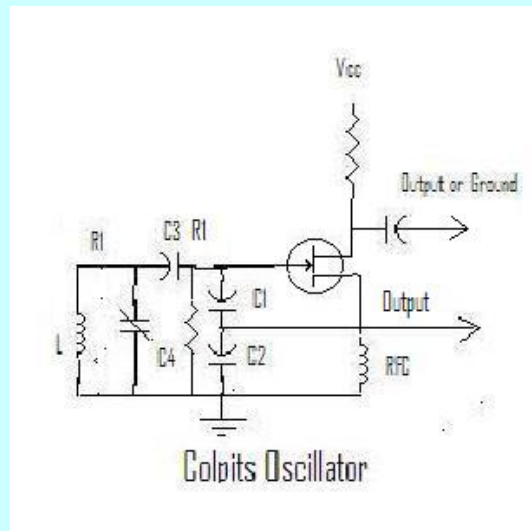
de N1TOX

John Borichevsky – President WRRC



## The Colpitts Oscillator

The Colpitts Oscillator is probably the most common oscillator built by Hams. It is straightforward to construct and does not require a tapped coil as does the usual form of the Hartley oscillator. Like all oscillators, it performs best when constructed using high quality components and solid construction.



Like nearly all oscillators there are some aspects of the design that can not be treated casually. Capacitors C1 and C2 are known as the Colpitts capacitors and C2 should be no smaller than C1, although one occasionally sees designs where C2 is smaller. The value of C3 should be as small as consistent with reliable start-up since the smaller C3 is, the more the frequency

determining components of L and C4 is isolated from the rest of the circuit. High isolation of the tank circuit results in less loading resulting in higher Q and allows higher power build-up in the resonant tank. Higher power in the tank results in less noise in the output. The maximum frequency is determined by the value of the inductance of L and the minimum value of C4 in parallel with the equivalent value of C1, C2 and C3 in series (and we all know how to calculate the total capacitance of a series and parallel network – right?). The minimum frequency is determined by the maximum value of C4 in parallel with the net capacitance of the other three capacitors.

Some other variations that may be useful in some cases are use of a resistor in place of the RFC which introduces some current feedback which generally helps to stabilize the amplifier portion of the oscillator. Output of the oscillator may be taken from the drain via a resistor capacitor network as shown or the drain capacitor may be grounded (converting the circuit into a source follower configuration) and output taken from the source. Output taken from the drain is reasonably well isolated from the frequency determining portion of the device but will be richer in harmonics than output from the source. The output from the source will have fewer harmonics, but is not well isolated and so will need a following amplifier to prevent frequency pulling from the load of the remaining circuitry.

Biasing is crucial in the design of oscillators (and solid state amplifiers in general). They must be biased such that current limiting takes place not voltage limiting. To this end the resistance of the RFC may have to be augmented with a resistor.

BJT transistors are often used in oscillators. They have stronger (exponential) curvature of their characteristic curve and so tend to produce more harmonics than the softer quadratic response of the FET. Never the less, all oscillators produce harmonics to some degree. An oscillator using a strictly class A amplifier would produce no harmonics, but unfortunately no strictly class A

can not be incorporated into an oscillator. You might wish to ponder the reason for that.

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## RUNNIN' ON EMPTY

**O**ne month of 2007 is already down for the count. Knowing you people you're all probably still hanging in there with those resolutions. Don't waver!

It appears that the FCC (in its infinite wisdom??) has decided that even a smidgen of ability at using CW is no longer necessary to obtain an Amateur license. The rule of 3rds probably applies. Here, to wit:

- Some are mourning
- Some are rejoicing
- Some could care less

I admit to being a mourner, but don't mean to open any heated debates on the merits or lack of them, of this venerable mode of communication. I would only reply to those who view CW as an antiquated mode of exchanging information. The human voice was there long before CW and, in truth, it is not all that accurate. If you've ever worked some DX where the op on the other end has a poor command of English and/or a bad accent you'll know very well what I mean. Or, are conditions really bad? A switch over to CW and the problem is often cured.

So, if REAL accuracy is called for and we dump "outmoded" means of communication, then we all need to exclusively use some error correcting digital mode, like packet or pactor.

I'm convinced that CW will be in use on the Ham bands for a long time to come. Through the efforts of organizations like FISTS and individuals to promote the learning and usage of CW the QSOs will continue long after we've all gone to that big Ham Shack in the Sky. (BTW, were you aware that the WRRC is a FISTS affiliated club?)

Perhaps, as someone on eHam.net opined, the ranks of CW ops may in fact grow as a result of the FCC ruling – the idea being that CW clubs

and individuals will now be more motivated to entice Hams into learning this wonderful aspect of the hobby. It could also become one of those situations where, if you don't have to do it, some may now choose to and discover its merits and how enjoyable a mode it is.

My only fear is that at some point the FCC will use more of its infinite wisdom and eliminate the CW sub bands altogether or incrementally cut those bands down to nothing. In the meantime it remains the only mode that can be used wherever you please.

Knowing the code won't make you a better person or even a smarter one, for learning CW is definitely a no brainer. It will, though, give you a pride of accomplishment that comes from mastering that skill which lies as the foundation stone of Amateur Radio. And no matter how hard we try not to (if we try at all) please excuse those of us who know and use CW for harboring a bit of smugness.

And so, I remain ebullient and optimistic. My resolution is to carry on in the spirit of that little ditty that goes like this:

In days of old  
When men were bold  
And sideband not invented  
The word was passed  
By pounding brass  
And all were quite contented

73,  
Darrel – K1KU

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## HOWTO BUILD A SATELLITE STATION in *thirty* easy steps

(Ed note: Here begins a series of articles on yet another fascinating aspect of our hobby. Methinks that down the road a club visit to this satellite shack for a demo might well be in order.)

At the WRRRC Christmas party, K1KU challenged me to write a series of articles for the club newsletter. Knowing I am starting to build a satellite station, he suggested (as only Darrel can) a series of articles describing the project over time. Here we go.

Part One: You need to put up the tower before the snow flies.

A major consideration in this project is the ability to see a large part of the sky. The Andrews residence has a small cliff in the backyard, which blocks the view to the east. In order to increase this view, either the hill could be blasted away or the antennas could be raised in the air. The neighbors don't like high explosives (that's a story for another time), so a tower is in order.

The next consideration is the feedline paths to the shack. Some of the signals may end up being on frequencies with significant feedline loss, so short runs would be best. The antennas and tower should be close to the future shack. There is also the XYL factor. Putting a tower in a location that is not conducive to spousal relations isn't wise. Two strategies have been developed here. Get the spouse active in the hobby, and get buy-in on the proposed locations. Both have been accomplished. Swoosh!

The tower will be placed on the north side of the garage, and the new shack will occupy the vacant second floor of the garage. The tower will need to be 33' tall, in order to allow free movement of the Yagi beams and to clear the roof of the garage.

Tower erection can be a blast. I traded some of my labor on another project in exchange for the required sections of used Rohn 25 tower. Take some concrete, a section of sonatube, one gin pole, some assistance from N1REB and WB1EWS, and a dash of good December weather, and voila, one tower is erected. The photos show the tower as it now stands, bare

and in need of antennas. But that is a subject for another day.

In part two, I'll describe the components of the complete setup, and my progress at scraping together the components to get on the air.

David Andrews, N1ESK



## For Sale: Yaesu FT-990AC

A mint condition FT-990AC is looking for a good home - Includes SP-6 external speaker and MD-1 desktop microphone. N1REB (my XYL) won't let me get the new Kenwood TS-440 until I sell the 990, so I'm a motivated seller. Asking \$850 O.B.O. Contact David Andrews, [N1ESK@sover.net](mailto:N1ESK@sover.net) for additional details.

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## FAMOUS HAMS

(Ed: You probably all knew this anyway.)

**W6QUT** - Freeman Gosden - Actor; most famous role was "Amos" of the old "Amos 'n' Andy" radio show; Official web [site](#); the show is a Radio Hall of Fame [inductee](#);

(SK) 10-DEC-1982

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## You Might Be a Radio Ham if...

- ❖ The salespeople at Radio Shack can't answer any of your questions.
- ❖ The microphone at a meeting doesn't work and you rush up to fix it.
- ❖ You think your computer looks better without the cover.
- ❖ You have ever purchased an electronic appliance "as is."
- ❖ You have ever saved the power cord from a broken appliance.
- ❖ You have never sat through an entire movie without having at least one device on your body beep or buzz.

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## FEBRUARY DOINGS (Es looking ahead)

**Feb 3-4:** VT QSO Party. A fun operating event where you can become the DX. Last year your humble editor took the 2<sup>nd</sup> place single op honors.

See [http://www.qsl.net/w1bd/qso\\_party.htm](http://www.qsl.net/w1bd/qso_party.htm) for more information.

Digital Dispatch – February, 2007

**Feb 10:** FISTS Sprint, 1200 to 16:00L. A good way to get some OJT on CW. For rules and more information go to <http://www.fists.org/sprints.html>

**Feb 16-18:** ARRL DX contest/CW. Add some new countries to the log in this popular worldwide contest. The bands will be hoppin' for sure. For rules go to <http://www.arrl.org/contests/rules/2007/intldx.html>

**Feb 13:** Regularly scheduled meeting in the EMT room at Grace Cottage Hospital. 19:00L.

**Feb 24:** WRRC Board of Director's meeting at Brattleboro House of Pizza by Staples in Brattleboro. 11:30L. All are welcome.

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## NEED HELP?

**W**e can't solve any personal problems, but for Ham and club related matters we'll try our darndest.

General club related matters: contact our President, John Borichevsky, N1TOX – [n1tox@comcast.net](mailto:n1tox@comcast.net) or 802-257-5526

Membership, ARRL renewals or joining the League, and financial information: contact Darrel Daley, K1KU, [k1ku@arrl.net](mailto:k1ku@arrl.net) or 802-387-5822

VE tests, club programs, or Ham classes: contact Sean Sanderson, KD6MPY, [kd6mpy@arrl.net](mailto:kd6mpy@arrl.net) or 413-695-5133

PR or ARES ideas? Contact Tim Bell, KA1ZQX at [ka1zqx@arrl.net](mailto:ka1zqx@arrl.net) or 802-365-7046



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