SPURIOUS EMISSION

ORLEANS COUNTY AMATEUR RADIO CLUB (OCARC)
14064 West County House Road Albion, New York 14411
OCARC Newsletter June 2012
News Editor Steve Maier (KZ2R) Email kz2r@rochester.rr.com

Meeting Time

The Orleans County Amateur Radio Club (OCARC) meets at 7:30 p.m. on the 2nd Monday of the month at the Orleans County Emergency Management Office at 14064 West County House Road in Albion, New York except in September when we have a dinner meeting.The next meeting will be June 11, 2012.
Refreshments by KA2BCF(food) and KA2BCE(drink)

Club Officers

President: Andy Ogozaly KC2HZM
Vice President: Terry Cook KC2JKU
Secy: Ray Hertel N2VDR
Treas: Richard Toussaint KA2BCF
Dir: Bruce Sidari WA2TMC
Net Mgr: Marion Toussaint KA2BCE
Contest Mgr: Wayne King N2WK
Programs: Bruce Sidari WA2TMC

ORLEANS CO. AMATEUR RADIO CLUB 2-METER NET

WA2DQL repeater 144.67 MHz in/145.27 MHz out with a tone of 141.3. Every Tuesday night at 9:00PM We will be calling for officers first then anyone else that wishes to join in. We also have a simplex net once a month on the Third Monday at 9:00PM on 145.270.
Upcoming net control stations are:

June	5	KC2JKU	Terry
June	12	WA2TMC	Bruce
June	18	KA2BCE simplex	Marion
June	19	KA2BCE	Marion
June	26	KA2BCF	Dick
July	3	KC2JKU	Terry

WA2DQL 2-Meter Net

If anyone would like to be a Net Control station, please let me know, I'd be glad to send you the call up procedure or script for the net. It's not that hard. Or if anyone has any suggestions, please let me know.

73 Marion, Net Manager KA2BCE

OTHER NETS

2 Meter Sideband Net 144.260 USB 9:00 Mondays
Lara (Lockport Amateur Radio Club)
Sunday 8 p. m. 146.820
Swapnet after regular net Sept- May

BIRTHDAYS

Howard Flint KC2EZJ 6/1
Dick Fizette WA2HNA 6/7
Garry Torriere K2ZI 6/28

NEWSLETTER REMINDER

Just a reminder to everyone, all submissions for our monthly newsletter are to be submitted to the editor by the 1st day of each month. Please make submissions via email. If you do not have any email account, you may submit a typed copy to the editor. Any submissions submitted after the 1st of the month will be published in the next month's newsletter if still appropriate.

DAYTON HAMVENTION

The OCARC was well represented at this year's Dayton Hamvention with 12 members and guests attending. The weather was GREAT and a good time was had by everyone. The official attendance to Dayton has been increasing each of the past five years with this year having 24,483.
Your editor, KZ2R, was lucky again and won a dual band Yaseu handheld as a door prize. I always said that I wanted to make it to Dayton at least once in my life. After going my first time, I want to attend every year. I'm already looking forward to next year.

May 14,2012 Meeting Minutes

mtg called to order by hzn.
EOC drill was a huge success.Excellent job done by all involved. Thanks to all.
1524.53 prev.bal.
150.00 expenditures
o.00 receipts
8.50 50/50 steve&steve
1383.03 as of 5/14/12
OLD BUSINESS

Old business was a discussion on the up comeing events,gear needed,radio positions,assignments,
Everyone brings own head phones please.
Work party to be formed to put up new antenna—PARTS ARE IN.
Kc2jku suggestes a mtg on ham fest right after Dayton.
Audit change of dues—hzn to give results to kz2r
mtg to adjourn n2vdr---kc2jku
We welcome a new/old face randy boyle k2rlb
members present n2vdr-wa2hna-kz2r-wf2s-wb2glu-n2wk-wa2tmc-n2obx-kc2jku-k2zi-ka2bce-n8cl-ka2bcf-k2en-kc2ezj-karlb good job
thanks to

Submitted by Ray N2VDR, Secretary

Hey Guys and Gals,

The antenna parts are in!!!
Paul from the EOC is getting the guy posts in for the antenna...
Every thing is coming together nicely. Now we have to get together and
Put her up! I'm looking for a few (6+ would be nice) willing sets of hands to
Help out putting up the vertical and for any thing that might be needed to be done
In the radio room to get ready for upcoming Field Day.
Saturday June 9th @ 9:00am for anyone that can make it. This will give us a
Chance to get it up and take care of any other little bugs that always seems to find
their way into the mix...
Thank you again for your continued participation,
73,
Andy. KC2HZM

2012 Field Day Plan

Class 2F WNY

With Field Day just around the cornor we need to sure up plans. We need GOTA station (WA2DQL) operators as well as (W2ORC) operators for the main two stations and the VHF station. You need to sign up. For those that are qualified to operate the GOTA station you also can sign up for the other 3 stations. So you can operate at all the stations if you so choose to. If you qualify to operate the GOTA station then you need to sign up.

Here is a list of club members that are NOT qualified (very active) stations to work the GOTA station:
WA2TMC, N8CL, K2EN, KC2JKU, KZ2R, WZ2MM, N2OBX, KC2HZM, WF2S and N2WK.
These club members cannot operate WA2DQL. Any others that believe they should be on this list?
What is "generally inactive" A term used by the ARRL to describe a Ham operator who is or has not been active for a period of time. No other explanation given.

Here are the guide lines for eligibility for the GOTA station. Your 2012 GOTA Station Coach is Terry, KC2JKU.

7.3.13.2.1. The GOTA Coach supervises the operator of the station, doing such things as answering questions and talking them through contacts, but may not make QSOs or perform logging functions.

4.1.1.2. The GOTA station may be operated by any person licensed since the previous year's Field Day, regardless of license class. This means if you are a new licensee since the 2011 Field Day you may operate the GOTA station.
It may also be operated by a "generally inactive licensee". Non-licensed persons may participate under the direct supervision of an appropriate control operator. Or by any Tech class licensees.

(ex.1 Ray N2VDR, Howard KC2EZJ and Shirley N2ABX can operate WA2DQL)
Under their class license (10M) or by supervision of the GOTA coach.
(ex.2 Marion KC2BCE and Dick KC2BCF can operate WA2DQL and can also sign up for W2ORC).

There are other club members that can meet the GOTA station guide lines as "generally inactive" but we need to Get you sign up and to know what role you can play in helping the club have a successful Field Day. The Club needs your help and participation. Remember the GOTA station does not limit you and you can work the main station also. All you need to do is sign up!!!!!

73, Wayne N2WK

Some Q&A About Coax and Stubs for Your HF Station

By Jim Brown K9YC

Second Edition – October 2011

PART 4

Q: Why Use Stubs?
A: Stubs can be used at the output of power amplifiers to attenuate harmonics; nearly all bandpass filters are rated for about 100 watts, so can be used only between the transceiver and the power amp. Stubs also add to the filtering provided by dedicated band pass filters (ICE, Dunestar, W3NQN), or they can function as a “poor-man's band-stop filter.” Properly used, a stub can provide 20-30 dB of attenuation at one or more harmonically related frequencies. The lower the loss of the cable used for the stub, the more attenuation it provides.

Q: Does it matter where a stub is connected? Why?
A: A stub works by placing a short circuit across the line at the frequency of interference. Placing a stub on a line forms a voltage divider between the line impedance and the stub impedance. The higher the line impedance at the point of connection, the greater the attenuation. If the line is well matched at both ends, the position doesn't matter, because the impedance at every point along the line is the same. But if there's a mismatch, the impedance will vary along the length of the line, and if the impedance at the location of the stub is low, it won't be very effective.

Q: If I connect a stub between my transmitter and my antenna tuner, isn't that a matched line?
A: Not at the frequency of the harmonic the stub is intended to suppress! All power amps include output networks designed to suppress their harmonics. The right place for a transmitting stub depends mostly on what kind of output network your power amp uses. If you put the stub in the “right” place (that is, at a high impedance point), you get closer to the full value of the stub's harmonic suppression. If you place it at a low impedance point, you may get little benefit from adding the stub.

Q: How do I figure out what to do with my amp?
A: See the table below, or study the manual for your amplifier. One common form of amplifier output network is the so-called pi-L – starting with the tube, there's a shunt capacitor, a series inductor, a shunt capacitor, and an inductor in series with the feed to coax connector. A pi-L network will have a fairly high output impedance at the frequency of the harmonic, so for these amps, any stub intended to short out a harmonic works best right at the output terminals of the amp (or a half-wave away at the frequency of the harmonic). That same circuit, but without the last inductor, is called a pi-network (because it looks like the Greek letter pi). Many lower cost tube amps, and most solid state amps use either a pi-network or a multi-stage filter with a shunt capacitor at the output. These amps will have a low output impedance at the harmonic, so any stub intended to short out a harmonic should be placed one-quarter wavelength up the line from the output terminals of the amp at the frequency of the harmonic (because the quarter-wavelength of line transforms the low impedance to a high impedance). For example, a quarter-wave shorted stub on the output of a 40M power amp with a pi-network output should be at a distance of 1/8 wavelength on 40M. When computing the length to move the stub, use the velocity factor of the main transmission line, not the velocity factor of the stub.

Pi-L Network	Pi-network or multiple-Pi	Pi-L on 160/80, Pi other bands
Put stub at the amp	Put stub λ/4 up the line at the harmonic	Stub at the amp if operating on 160/80, λ/4 away on other bands
Acom 1000, 1010	Commander HF-1250, HF-2500	Ameritron AL80, AL82, AL-1200
Alpha 374, 76, 77, 87, 91B	Dentron Clipperton L, MLA-2500	Heath SB1000
Ameritron AL800H	Drake L4, L7	
QRO 2500DX	Elecraft KPA500	
Ten Tec Titan 425	Heath SB-200/SB201/SB-220/SB-221	
	Kenwood TL-922A	
	Ten Tec Hercules II, Centurion	

Thanks to W5IFP, W4TV, K6XX, and K1HI for adding amplifier models to the table.

Q: I have a set of bandpass filters. Do I also need stubs?
A: Maybe. Nearly all ham bandpass filters are designed for 100-200 watts in matched lines, so in a high power station, they must be placed between the transceiver and the power amplifier. They protect the receiver from other nearby transmitters, but they can't reduce harmonics produced in your power amp. You could buy bandpass filters to go after the power amp, but they are very expensive! It also depends on the quality of your bandpass filters, how much power you're running, how much signal your receiver can tolerate, the spacing between your antennas, and their orientation. Some bandpass filters are much better than others. W3NQN-designed filters are generally acknowledged as the best, Dunestar a bit behind them, and ICE at the low end. The owner of ICE recently became a Silent Key, and the filter business has been taken over by Morgan Manufacturing.

Q: Which coax works best for HF stubs?
A: The best coax for HF stubs is one that combines low loss with a low velocity factor. Low velocity factor means the stub will be shorter. Loss at HF is entirely the result of conductor resistance. It doesn't make sense to spend extra for a premium foam coax that offers low loss at UHF – foam has a high velocity factor, so the stub must be longer to resonate. Beefy cables like Belden 8237, 8267, and 9251 are great for HF stubs. Coax with a foam PE dielectric will work, but you'll need 25%-30% more cable, and you'll need a #10 center conductor with a heavy copper braid and heavy foil shield to be as good. Commscope 3227 fits this bill, and is great cable if you can find it.

Q: What stubs do I need for a typical SO2R contesting station?
A: A good start is outlined in the table below. It was developed many years ago by Fred Lass, K2TR.

Band	Stub(s)	Approx Length ($V_f = 0.66$)
160	λ/4 Shorted stub to kill harmonic on 80/75M	89 ft
80	λ/4 Shorted stub protects 40, 20, 15, 10	46 ft
40:	λ/4 Shorted stub protects 20, 10	23 ft
	λ/2 Open stub kills harmonic from 80	46 ft
	λ/6 Shorted stub + λ/12 Open stub kills 15M harmonic	16 ft, 8 ft
20	λ/4 wave Shorted stub protects 10	11.5 ft
	λ/2 Open stub protects 15 (3/4 on 15), kills 40M harmonic	23 ft
15	3 λ/4 wave Shorted stub protects 20 and 10 (1/4 wave on 40M)	23 ft
10	λ/2 wave Open stub protects RX from 20M	13 ft
	1 λ wave Open stub protects RX from 40M and 15M (λ/4 wave on 40M)	23 ft

(To Be Continued In Next Newsletter)