



# Scuttlebutt

April 2011

Issue 208

**Next Meeting: April 9 - Noon - 4:30PM  
Publick House Historic Inn, On the Common,  
277 Main Street - Route 131, Sturbridge, MA**

## Captain's Cabin

The search continues for that fresh set of officers! Jim, K1IR and Jack, W1WEF have been working hard to find the right combination of folks to serve us all for another contest season and maybe beyond. My thanks to Jim and Jack for doing this important work.

Need to make an apology – in last Scuttlebutt, I made mention here that Dale, AA1QD had put together our Rev. 0 of the Awards Program but I was mistaken to think it was a single op effort. Al, KE1FO worked with Dale to pull the program together and did a nice job scoping out the program. Follow-on comments and suggestions have spurred new work on the program which I will refer to as Rev. 1 – details will follow soon.

We have elections set for the next meeting (April 9) and need all hands on deck for this event. Please make arrangements to attend and cast thou vote. We are also planning a nice program too that will entertain and enlighten you all. But before this day, please let Jack and Jim know your interest in any position on the officer's lineup. And as usual, the past officers will be on hand to assist with the transition.

And finally, I wish to thank the membership for the past several years of your support as the president of the YCCC. I have truly enjoyed my time taking the lead in the group but honestly must say it was pretty easy because I had some really great support from not only my fellow officers but also the membership. I managed to collect (with all of your help) a number of ARRL Gavels and CQ WW Club plaques along the way (that is the really cool part of being your prez!) We have some truly fantastic people in this club – all talented, skilled, technically advanced, motivated and ready to pitch in when asked. I am asking you now to step up and give one of the officer's positions a shot. Call Jim or Jack now!

See you in Sturbridge on April 9!

73, Mark, K1RX

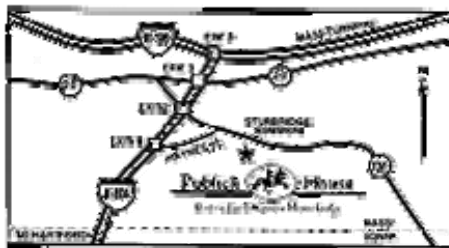
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<b>Ship's Log</b>	<b>April 2011</b>	<b>Issue 208</b>
<b>Captain's Cabin</b>	Mark Pride - K1RX	1
<b>Meeting Directions</b>		2
<b>Flotsam &amp; Jetsam</b>	Jack Schuster - W1WEF	3
<b>Super Contest Radio for &lt;\$1700</b>	Tony Brock-Fisher - K1KP	4,5
<b>Radio Antenna Engineering - Laport</b>	- YCCC Reflector	6
<b>Idea for Sealing Coax Splices</b>	John Vogel - N1PGA	7
<b>3-Leg Yagi Tower Mounting Sys</b>	- Jeff Briggs - K1ZM	9

## Publick House Historic Inn

On the Common, 277 Main Street - Route 131,  
Post Office Box 187  
Sturbridge, Massachusetts 01566-0187  
508-347-3313 • 800-PUBLICK

**Directions:** Publick House Historic Inn is one-quarter mile from the junction of the Boston - New York and Springfield - Providence highways, with entrances on each route. It is one mile from Exit 9 on the Mass Turnpike.



**From Boston & Springfield:** Mass Pike (I-90) Exit 9 to I-84, I-84 Exit 3-b to Route 20 West, At lights take a left onto Route 131, Publick House is 1/2 mile down on the right

**From Hartford:** Exit 2 off I-84 East, follow to right, Second stop sign take a left at E&J Candy , At lights take right onto Route 131, Publick House is on the right

### From New York City:

I-95 North to I-91 North to Hartford I-84 East, Then follow "FROM HARTFORD" directions

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The editorial deadline for the Scuttlebutt is the 10<sup>th</sup> of every odd month.

# Flotsam & Jetsam

Barnacle Jack (BJ) Schuster, W1WEF [w1wef@arrl.net](mailto:w1wef@arrl.net)

Ahoy Maties!

BTW, I stole that salutation from our old friend Stu, KC1F years ago. He got it from a ham pirate .

Just read a good line on the CW Ops Reflector. Don, K2KQ suggested that someone do a PET scan study to determine what part of the brain remembers the code, since no matter how long you stay out of Ham radio, you never forget the code. I was amazed when my sister recently said "dah dit dah dit dah dah dit dah" ...and she remembers "EISH, TMO" from when I was learning the code! I think it was G3UZN who replied to Don: "It has nothing to do with the brain as was just demonstrated in the pileup on VU4PB

Thanks to Jeff Briggs, K1ZM for the following good ideas:

To ensure you can get a PL259 male off an outside female (after some years outside), put some OXGARD on the female threads BEFORE screwing on the PL259 male. Then apply your tape or coax seal. This will prevent seizing of the joint over time. It should come open years later with pliers or perhaps even by hand.

Tape all the joints on your yagi booms and elements to prevent water intrusion over time. Your yagi will work BETTER longer and better yet, you will not take a bath if you tilt the boom vertical to work on the antenna some years later.

Double truss long booms (those over 40 feet for example) to help provide better support in bad weather. I like to put the first phillystran support out about 12 feet from the tower and the second phillystran support about 1 foot from the end of the boom near the last element on the boom.

Whitey, K1VV passed this along:

"With my beam tilted over to the ground and pointed almost straight up ... we have been working JAs ...UA0s ... and VKs with 200 wts on 20 CW !!! All antennas work but some work better than others !! " BTW, my foldover tower and beam is for sale : \$999.00 ( Lakeville, MA)

["http://southcoast.craigslist.org/ele/2270082259.html"](http://southcoast.craigslist.org/ele/2270082259.html)

From Randy, K5ZD: I discovered a new feature of the Elecraft K3 the other day. There is a button labeled "spot". On CW, if you press "spot" it automatically tunes the radio so it is on frequency of the CW signal in the passband. Cute feature, although may not be so helpful in busting a pileup if everyone is on exactly the same frequency!

(Hmmm, there's a SPOT button on my 5K...wonder what that does? BJ)

BJ sometimes wondered how much electric power is used in a contest and what it cost? I guess I was looking for something to do recently when I decided to figure it out for my 1500W SO1R station. I have a neat device called a " Kill A Watt" which measures line voltage, load current, power in watts, Volt-amps, line frequency, power factor, and power consumption in KWH. Mine is a model P4400 and can be found on line for \$20 to \$60. It's made for 120V lines, so I could plug all my 120VAC station components into it and I measured 550W key down for the rig, rotor control boxes , computer, 12V power supply and miscellaneous other. The rig was set at 50W out which is about what it takes to drive the AL1500 to full power. Allowing for a CW duty cycle of 50% I called it 500W total.

The amp runs on 240VAC, so I couldn't just plug it into the Kill A Watt. I figured I could measure the power on one side of the 240 line, and double it, but to make an adapter to get into it at the AC plug looked like a real pain in the butt. To remove the cover from this amp is a real pain too, so I decided to get at it thru the fuse holder. I found another fuse holder cap that fit and I drilled a hole thru the cap to allow two wires to fit thru. I then took a fuse and drilled a hole thru one end so one wire could go thru the fuse to the opposite end where I soldered it to the inside of the end cap. Next, I soldered the other wire to the fuse holder cap, and could now access one side of the 240 and wire up a 120V plug and receptacle.

OK...the bottom line; the amp took about 3KW. Allowing again for a 50% CW duty cycle, the total station power was 2KW and at 15cents a KWH, operating 40 hours came to \$12. At worse...\$12 to \$15 for a serious contest effort. Cheap FUN! (Did I just admit I actually DID THIS?...hi)

I hope we have so many volunteers for office in YCCC this time around that we actually have to vote! Unfortunately, I wont be able to attend the meeting as I have a serious back operation scheduled the day before the meeting. To keep this the best contest club around we need everyone's support!

73,

Barnacle JACK - W1WEF

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# How to Build a Super Contest Radio for Under \$1700

Tony Brock-Fisher, K1KP

From time to time every contester starts to think about getting a new transceiver. I just went through this exercise, considering what was available on the market versus what how much I might be able to spend on the purchase. I came to a very interesting conclusion – the best transceiver value available was already sitting on my operating desk!

When it comes to comparing transceivers these days, everyone is still concentrating on receive performance, especially third-order intermodulation dynamic range. There seems to be a battle of the 'numbers game' going on, and what had seemed like the 'sound barrier' of IMD3 figures was shattered a few years ago by Elecraft with the K3. After the K3 became a very popular contest radio, Yaesu read the handwriting on the wall and has come out with some radios (the Ftdx-5000 family) that beat even the K3 and now stands at the top of the heap of Bob Sherwood's list (see <http://www.sherweng.com/table.html>).

Of course, these new products come at a premium price. Tom Erdmann, W7DND,(SK) said that if one had \$100 to spend on their station, they should spend the first \$90 on the antenna, the next \$9 for the receiver and the final \$1 on the transmitter. (quoted indirectly from <http://www.antennasbyn6lf.com/>). So spending \$6000 or more on a new transceiver does not seem like a wise investment, unless I already have \$60,000 invested in an antenna system!

Another really interesting piece of information from Bob Sherwood's web page are the summaries from his talks at Dayton Contest University 2008 (<http://www.sherweng.com/documents/NC0B-Contest-U-2008-9.pdf>) in which he states that for CW, the close-in IMD3 requirement at 2 kHz is realistically around 80 db, given the limitations of atmospheric noise at HF. He further states that for SSB, the limitation is not in the receivers being used by hams today, but the IMD3 performance of the low-supply-voltage solid-state PA stages of today's transceivers. So it would seem that for most contesters, having more than 80db of close-in IMD3 is overkill. If you live in Europe, or have other special circumstances such as other high power contesters nearby, or a very quiet noise level, then your requirements may be higher.

There are many other features to consider besides this single measurement of receiver performance. There are filtering options, ease of use/agility, a bandscope, etc to consider when selecting a transceiver. I did consider all these when doing my search, and here is what my thoughts were on three of the transceivers considered:

## Yaesu Ftdx-5000:

**PROs:** Definitely the new 'king-of-the-hill' for close-in IMD3. Also a really nice looking, full featured radio, 200watts output, class A if you want it. Optional spectrum scope. Real analog S-meter.

**CONS:** Upwards of \$6K fully equipped. Transmitter phase noise is VERY suspect per QST review. Spectrum scope not as eye-appealing as the new Icoms.

## Elecraft K3:

**PROs:** Around \$3500 fully equipped, but not a cheap radio. Available used on eBay frequently for about 80% of the new price. Damn good close-in IMD3. Super customer support and software updates.

**CONS:** Plain Jane front panel, no panadapter scope built in, some ergonomic issues per eHam reviews, excellent receiver design at expense of 'just average' transmitter design. Crude bar-graph S-meter.

## Icom 7600:

**PROs:** Large color display for spectrum scope, latest receive technology from Icom with three roofing filters.

**CONS:** \$3650 street price, differs from Pro3 by only a few features, close-in IMD3 only 78db per Bob Sherwood (<http://www.sherweng.com/table.html>); no analog S-meter.

So the winner is (drum roll please) NONE OF THE ABOVE! For the costs involved, I concluded that none of the rigs considered were worth the added investment over what I already had sitting on my desk, which can be reproduced by anyone for around \$1700. What is that rig? It is a modified Icom 756 Pro2.

I'll explain: Of the Icom Pro line, there are three models to choose from. They are all now only available on the used market. The typical original Pro sells for around \$100-\$1100 on eBay, while the Pro2 can be had for about \$1400 and the Pro3 is selling for closer to \$2100. Comparing features and specs (from QST reviews and Bob Sherwood's web page) the original Pro, while definitely a revolutionary transceiver, had some flaws and issues. The Pro2 did a lot to correct the important receiver deficiencies of the original Pro. The Pro3, while touted by Icom as another giant leap in IMD3 over the Pro2, is only marginally better according to some, and equivalent by other's measurements, to the Pro2. So the Pro2 is definitely at the 'sweet spot' of the price/performance curve of the three.

I'm sure many of you will be quick to point out that all the Pro's had mediocre close-in IMD3 numbers. Bob Sherwood rated the Pro/Pro2/Pro3 at 71/75/75 db IMD3 at 2kHz. Close to his 80db number, but no cigar. As you all are no doubt aware by now, the limitation is the ability to build a high-Q roofing filter at the first IF of 64 MHz.

INRAD to the rescue! International Radio sells roofing filter kits for the Pro series. They are not cheap, at \$200. And they are not easy to install, especially for the old, blind, or faint-hearted among us. But they do drag the Pro-series rigs kicking and screaming into the current decade for close-in IMD3 performance. Consider these figures, measured by George W2VJN on a Pro2, before-and-after installing the roofing filter:

Spacing:	20kHz	15kHz	5kHz	3kHz	2kHz
<b>Before Roofing Filter:</b>	93dB	89dB	76dB	75dB	75dB
<b>After adding Roofing Filter:</b>	96dB	94dB	92dB	90dB	79dB

I have installed one of the roofing filter kits in my Pro2. The way this kit is inserted into the receive chain allows the operator to compare performance with and without the filter in line, by switching between the two sides of dual receive. How does it really work in a contest? I listened on 20CW this morning with the UBA contest going on. Many stations were 20 over s9, with no preamp and no attenuator inline. (Last night I calibrated my s-meter and it is within a couple db of the Collins -73dbm=s9 reference). In this case I did not hear any intermod with or without the filter.

Then I cranked in Preamp2, which is 17 db gain. Now signals appeared 30 to 40 db over s9 and using the B side of dual watch (no Inrad filter) I was able to clearly identify intermod. It sounds like chopped bits of CW, as the two strong stations mix and cause intermod only when their CW patterns overlap. By switching the A/B side of dual watch and the preamp gain, I was able to observe the effect of the filter.

### Here's the bottom line:

At my station, with signals set up at s9+20, I heard no intermod from the unmodified B side of the 756Pro2. Adding preamp gain (either preamp 1 which is 10db of preamp 2 which is 17 db) I could clearly hear IMD products from the unmodified B side of the 756Pro2. Switching in the INRAD filter by listening to the A side completely eliminated the IMD products in every case.

These observations are entirely consistent with Bob Sherwood's measurements of the unmodified 756Pro2 at 75 db IMD dynamic range at 2kHz and his assertion that 80db of close-in dynamic range is required on CW. They are also consistent with W2VJN's measurements of the improvement in close-in IMD with the INRAD filter, which was over 10db improvement from 15 to 3 kHz away from carrier.

If you routinely encounter CW signals greater than s9 +20db on the s-meter, the filter will remove IMD products. However in my station this situation is relatively rare, even with gain antennas on 40 and 20. Especially on 40 and even on 20 meters, you can reduce the impact of strong signals by reducing the front end gain using the attenuator so that atmospheric noise is just above the receiver noise floor. This acts to reduce the strong signals below the point where IMD appears.

If you still experience signals above s9 +20 on a 756Pro2 (or 3) after doing this optimization, the INRAD filter will be very effective at improving IMD3 performance. Adding the \$200 filter will improve the rig's performance for a fraction of the cost of a K3, FTdx5000, or IC-7700 upgrade.

Needless to say, the filter performs very well as advertised.

So the \$1400 used 756Pro2 plus the \$200 filter adds up to \$1600. What about the last \$100? That's in case you decide you want to have the INRAD filter professionally installed. If you can do the installation yourself, you can either pocket the \$100, or use it on an outboard audio CW filter. You might ask why, with all the DSP-IF filter choices in the Pro2, you would need this. It turns out the Pro-series has a potentially annoying audio distortion which appears on strong CW signals with fast AGC. The notes sound 'flutey'. This is actually caused by 3<sup>rd</sup> and 5<sup>th</sup> order audio harmonics, which are easily removed with an outboard audio filter, such as the Autek QF-1A.

I'm sure that there are testers out there that will agree or disagree strongly with my evaluation here. My point is not to start a 'battle of the brands' but to show that transceivers that are one generation behind the 'bleeding edge' can provide very high performance value for their costs.

### Conclusion:

The most cost effective rig might just be the one already sitting on your desk! You can make older rigs perform 'good enough' for today's contesting environment at a fraction of the cost of the 'latest-and-greatest' with a few add-ons, such as a roofing filter. Save those bucks for where it really matters – aluminum in the sky!

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## From the YCCC Reflector:

### “Radio Antenna Engineering” by Edmund Laport

Thanks to John W1FV who announced the book’s availability and everyone who contributed to the resultant discussion.

Attention all you antenna engineers in radio land..I discovered that the classic book "Radio Antenna Engineering" by Edmund Laport, which I believe has long been out of print, is now available online.

You can download the entire book in HTML format from: <http://www.vias.org/radioanteng/releasehist.html>.  
(Mac users can read the Microsoft proprietary format using chmox: <http://chmox.sourceforge.net/>)

Radio Antenna Engineering is also available at: <http://snulbug.mtview.ca.us/books/RadioAntennaEngineering/>

and as a free download from lulu at: <http://www.lulu.com/product/paperback/radio-antenna-engineering/188778>

and from Scribd at: <http://www.scribd.com/doc/25351579/Laport-Radio-Antenna-Engineering>

#### Comments

##### Jim, W1EQO:

Also for anyone driving to Nova Scotia, check out the info in LaPort's book about Radio Canada International's shortwave transmitter and antenna farm. You will pass it just before entering Nova Scotia.

Day or night, you can not miss it! The antenna farm can be seen for several miles.

##### Craig, K1QX

Radio Canada International is located in the Tantramar marsh in the beautiful town of Sackville, NB.

It is home to our daughter's alma mater, Mt Allison University.

I need an Atlantic Canada fix!

##### Brian -- K1LI

Yes, she's a beauty, isn't she? And situated as she is in that big salt flat really gets the juices going!

My XYL was working as a TV news reporter for CBC in Montreal when we passed RCI on our way from Moncton to Halifax. Given her "status," the RCI staff gave us a tour, including allowing me to step inside the old transmitter - what a beast!

##### Dave K1WHS

I have driven by the SW BC station in Sackville NB a few times, and the last time, I decided to stop in. It was a Sunday, but they had someone there who gave me a ripsnortin' tour of the facility. I could take pictures and see everything. Most of the transmitters were ABB Swiss made and used special modulation techniques so that the carrier power was absent when there was no modulation. The net effect was that their electricity usage was way down over a conventional AM transmitter. They had a few older units on standby. I took a few pictures of the meter panels. It was scary to see screen currents up in the many ampere range! I got a nice view of the switching matrix and saw all the feeders that went to the arrays out back. (HUGE) The guide told me that they occasionally had grass fires if they did not keep the grass cut.

Anyway, if you pass the station, feel free to drop in. It is well worth it.

Some links to photos and information on Radio Canada International; (RCI, Sackville, New Brunswick, Canada)

[http://en.wikipedia.org/wiki/Radio\\_Canada\\_International](http://en.wikipedia.org/wiki/Radio_Canada_International)

<http://www.mds975.co.uk/masts/sackville.html>

<http://www.rcinet.ca/english/>

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# Another Idea for Sealing Coax Splices

John Vogel N1PGA

I've found a very cheap way to help water-proof outdoor coax and electrical connections that may be helpful for you to consider. It's not a complete solution all by itself by any means, but I really think it's going to become a standard practice for me on all outside connections. And did I mention it's cheap?

Getting ready for ARRL-SSB a few weeks back it became apparent from the traffic on the YCCC reflector that 10m might actually open to EU during the contest. I determined that if I was going to be serious about putting in a big effort and doing my best, I needed to get my 2-ele Quad out of storage in the garage rafters and get it back up in the air pointed to EU. So within 30-minutes I had it re-assembled and back up in the air using my typical rope & pulley system. It metered out well enough on the antenna analyzer, so far so good. My only problem was now what to do about a feedline.

My cable entry point to the shack was buried under compacted snow that a few weeks earlier I had pulled off the roof. The stuff gets compacted pretty well when it falls off the roof and its like cement after a while. I didn't have the time to dig out the hatchway doors to pass thru a dedicated coax line, so I decided I would share the existing 160m feedline because it was a natural given the daytime/night time natures of 160m & 10m. There also happens to be an accessible barrel connector for that feedline directly below where the quad is hanging out in the back yard.

Like I suspect most YCCC'ers also do, I use the outdoor rated Scotch Super88 electrical tape everywhere I can to help prevent moisture related problems and the resulting intermittent electrical contact (which leads to intermittent on the air contacts...).

For this contest I figured I really only needed a 48-hour solution, and I'd run out back and manually change the coax at dawn and dusk. I really didn't want to use up a lot of the Super88 doing re-wraps twice a day, and to be honest with you my track record at re-using electrical tape is pretty poor, so I needed to find another way to help keep the rain out. Even though the contest is only 48-hours, water in the coax is a gift that keeps on giving, year round...

I've been bicycling pretty regularly for the past couple years now for fitness and non-ham fun. One day I had stopped into my local bike shop to shoot the breeze with the boys, when I noticed they had a barrel full of used tubes they had left over from all the flat tire repairs they do. The bike shop had no use for them whatsoever and they gladly let me take as many as I wanted. So I grabbed a couple of each size and headed back to the bench.

I found that the skinny little 23c tubes that are used on my road bike tires are just a little too snug for a pair of PL259s and barrel connector. Actually the rubber stretches just fine to make a nice tight fit, but it wasn't exactly easy or fast to do. When you're a Low Power contester, you need to be fast on the change-overs!!

The fatter tubes from either a comfort bike or a mountain bike work out pretty well. I cut about 24" lengths and when it was time to open up the barrel connector and switch antennas for the first time, I slid a piece of tubing over both the end of the now disconnected coax, as well as another piece slid over the barrel connector joint.

There certainly are 1000 other ways to help weather proof connections, but this method has some merit in my eyes. It may not be a lifetime seal, as a matter of fact I'm pretty sure it's temporary. But because it's so easy to do and cheap, who cares if you need to replace one after a year or two?

This summer I think one of the projects will be some feedline replacements. I'll try to do continuous length feedlines, but where ever they might wind up with a barrel, or at each feedpoint, I'll be adding a bike tube sleeve as an extra measure of protection.

You might just want to stop in your local bike shop to see if you can take a couple used tubes off their hands, and see what you might do with them.

(Some other time I'll be glad to tell you how cool my spare fiberglass quad spreader arms worked out as snow rake handle... I easy removed snow 30+ feet up on the roof and earned the WAN award (Worked All Neighbors) in just one weekend...)

73 John N1PGA

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## Don't Fall Off the Active Roster!

George Harlem - W1EBI

Are your dues current? The YCCC financial year is April 1 to March 31, so this would be an excellent time to get current with annual dues. Check your dues expiration date today by visiting the website at [yccc\(dot\)org](http://yccc(dot)org) and go to "Members Only".

As of March 31st, members with dues paid to 3/31/2011 will be one year in arrears. Members with dues paid to 3/31/2010 (more than one year in arrears) have technically fallen off the Active Member roster. However, YCCC typically extends an unofficial "amnesty" period to the end of April. Don't fall off the ship! Send dues to K1EP, or use PayPal, see the YCCC website. Better yet, pay your dues in person at the upcoming regular meeting in Sturbridge, MA, on April 9. Remember, it's the annual election of officers along with some interesting presentations.

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# WRTC-2014 Update

[www.wrtc2014.org](http://www.wrtc2014.org)

## 3 Years, 3 Months to go!



- Northern California DX Foundation (NCDXF) has made a generous financial contribution.
- The NCDXF is also serving as a fundraising partner, and since they are an IRS-approved 501(c)(3) organization, contributions to WRTC2014 made via NCDXF are tax-deductible for most U.S. taxpayers. If you are doing your taxes now and wishing you had more deductions, now is your chance to get one for next year! And if your employer has a matching-gift program, make sure you include the necessary paperwork with your donation. Details on what address to use are on our Web site.
- Fundraising managers have been appointed in most regions to promote WRTC-2014 at club meetings, hamfests, and similar gatherings. A short video is in production for use at such events.
- About 10 (of the 55 total) qualifying events have already taken place.
- People are working on making WRTC points, and asking questions about interpretation of the point-scoring system.
- WRTC-2014 is looking for a suitable site (or sites). Stations need to be spaced about 500 meters apart to minimize QRM. A square field with station at each corner needs to be over 50 acres in area. A field capable of holding 9 stations (arranged in 3 rows of 3) is over 200 acres. WRTC-2014 is planning on having 65 stations, so real estate is essential. Anyone knowing of "Big" Field Day operating sites or any towns with relatively large "Recreation Areas" that we may be able to use should contact the WRTC-2014 chairman, K1DG at [info@wrtc2014.org](mailto:info@wrtc2014.org)
- Tower/antenna and coax (6 miles of coax) procurement begin as funds are available. Anyone owning or having access to a suitable storage/warehouse facility should contact the WRTC-2014 chairman, K1DG at [info@wrtc2014.org](mailto:info@wrtc2014.org).

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## YCCC NYC/LI Area Meeting 3/15/2011, Bethpage, NY

NYC/LI area YCCC meeting was held in conjunction with Long Island DX Assc. (LIDXA) 3/15/2011 in Bethpage, NY.

Meeting was opened at 8PM by LIDXA president John W2GW with introductions, club business, DX info followed by a discussion of LIDXA origins. At the conclusion of the LIDXA meeting, the floor was turned over to YCCC.

An intro to YCCC, its origin, goals and invitation to join preceded the presentation "How new technologies affect the art of contesting" by Tobias Wellnitz DH1TW, moderated by Tom KA2D.

A Discussion and Q&A followed the presentation. The upcoming CQ WPX SSB contest was part of Q&A.

Several YCCC members present renewed their annual dues along with one new member.

I want to thank John W2GW and LIDXA for their hospitality and the use of their meeting facility.

Eight YCCC Members plus 12 LIDXA and two guests attended.

**Renewals:** W2GW K2MFY N2YBB W2FX

**New Crew:** K2RB

Submitted by  
Tom Carrubba KA2D  
YCCC NYC/LI Area Manager



# A Three Leg Mounting System for Side Mounted Yagis

Jeff Briggs K1ZM/ VY2ZM

When affixing a lower yagi to the side of your tower (if not using a ring rotor), it is a good idea to use all three legs of the tower to share the load. Put the boom to mast plate on the leg desired as normal - and then use steel strapping plate to anchor the boom to the other two tower legs.

On one LEG I am using a standard boom to mast plate with 3/8" stainless U bolts to affix the OWA to the tower at 120 feet.. That leaves the two other legs on the other faces of the tower available for my 3 leg mounting system. I went to my local True Value hardware store (but I am sure Home Depot has this stuff too) - and purchased flat steel bar stock.. They usually have this stuff where they keep the threaded rod and all that kind of specialty stuff.

The steel is 1/8" thick and measures 1 or 1.25" wide and I think it is either 18" or 24" long. I think what I used was probably it 18" come to think of it. It could be as short as 14" but I think it is 18" - but no matter as this is not rocket science.

At one end of the steel I drill two holes to accept the U bolt from a small muffler clamp - I am pretty sure I am using either a 1.25 or 1.125 size. You want something that will fit snugly around the tower leg with its own saddle. The rest is very simple - at the OTHER end of the steel, you make about a 30 degree bend down 4" from the end of the piece - you can do this by putting the end under a board, standing on the board and then lifting the steel up to make the 30 degree bend.



**6EL OWA at 60° - Director End**



**Director Side Bracketing**

Now at the boom, you take one piece of the steel and affix one end to the tower leg using the small muffler clamp and saddle be sure to affix the steel so that it is level and parallel to the boom. The other end of the steel is then rotated on the tower leg until the 4" flat piece hits the boom flush (meaning the 4" segment is now parallel to the boom and resting against the side of the boom.. Hopefully you will not have an ELEMENT mounted just there - so plan ahead on this stuff!

Where the 30 degree 4" piece mates up with the boom, I put (2) 3" or 2.5" muffler clamp U bolts around the boom (this depends on your boom diameter - if a 2" boom then the two muffler clamps would be 2" ones) with the saddle piece of the muffler clamp grabbing the flat steel and holding it to the side of the boom.

I use 4" spacing between the U bolts so I get good purchase of the steel piece to the boom. If your 30 degree bend was not perfect, you can bend the steel between the tower x bracing (if necessary) in order to make the 4" piece lie essentially flat against the side of the boom - it will flex enough to do this if you have some leverage).

Now you do the same thing on the remaining tower leg and affix the second steel piece to the other side of the boom.

When done this way, the boom to mast mount is not relying on a single tower leg for yagi support and the tower is completely safe from torquing - plus all three legs are taking the brunt of the weight & twist caused by the antenna - and not a single leg.



**Reflector Side Bracketing**

BTW - no one ever told me this one - it is my own solution to a very real problem!

And it REALLY works.

Jeff K1ZM

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# YCCC CLUB RESOURCE INFORMATION

**DUES AND MEMBERSHIP STUFF** Dues are payable as of the April election meeting, which begins our club "contest year". The YCCC has adopted a multi-tiered membership format as follows: Please note that payment of dues IS NOT a prerequisite for contributing scores to the Club aggregate, but IS for the various YCCC Awards Programs

**Full Member** - \$20 (\$35/2 yr) (Eligible for YCCC awards programs and paper delivery of Club newsletter)

**Full Member** - \$15 (\$25/2 yr) (Eligible for YCCC awards programs and electronic "Ebutt" delivery of Club newsletter)

**Family Member** - \$0 (Grants full membership to all amateurs residing at one domicile on payment of one member's "Full Member" annual dues and entitlement to one Club Newsletter sent to one domicile or email address. All members of said family are eligible for YCCC awards programs.)

**Student Member** - \$10 (Grants full membership to students at a reduced level. Eligible for YCCC awards programs and paper or electronic delivery of the Club Newsletter.)

**Subscription** - \$\*\* (A "friend of YCCC" - not a member but a possible candidate for future membership. Receives club newsletter only in paper or electronic form. Fee basis is \$20 for overseas paper delivery, \$15 for domestic paper delivery and \$10 for electronic "Ebutt" delivery domestically or overseas.)

Club members who move out of club territory and so are not eligible to contribute to club aggregate scores automatically become subscribers. New members who join at the February meeting are credited with dues for the year beginning the following April. You can tell if you owe dues by checking your 'Butt mailing label. **Mail your dues to the club treasurer, Ed Parish, K1EP, 9 Spoon Way, N. Reading, MA 01864**

**SCUTTLEBUTT ARTICLES** should be sent to the Scuttlebutt editor, Steve Rodowicz N1SR, preferably by E-mail at [n1sr@arrl.net](mailto:n1sr@arrl.net) or on 3½" disk (in MS-Word format or text file) by snail mail to Steve Rodowicz, 809 Pendleton Avenue, Chicopee, MA 01020. The deadline for each issue is the 10th of the preceding month..

**Scuttlebutt Advertising:** Nominal Business Card sized ad, \$50 per year (6 appearances)

**CONTEST SCORES** should be sent to the club scorekeeper, Dave Hoaglin, K1HT, preferably by E-mail at [scores@yccc.org](mailto:scores@yccc.org). Please include details such as numbers of QSOs, QSO points (if appropriate), and multipliers (all types); entry category; and power.

## CLUB GOODIES

**BADGES** YCCC badges are available from Ric, KV1W. Send \$2, name and call desired on the badge, and your mailing address to: Ric Plummer - YCCC Badge, PO Box 1103, Westborough, MA 01581-6103.

**APPAREL** Contact Bob Rogers [KB1LN@yahoo.com](mailto:KB1LN@yahoo.com)

**YCCC LOGO ITEMS** <http://www.cafepress.com/n1ik>

**QSL CARDS** are ordered through Burt Eldridge, W1ZS. To order, send Burt an email at [w1zs@arrl.net](mailto:w1zs@arrl.net), detailing card information per "QSL Request" form available at [http://www.yccc.org/members/yccc\\_qsl.htm](http://www.yccc.org/members/yccc_qsl.htm). You will receive a proof by email. Approve the proof, making any corrections, and return to Burt *with payment* (make checks out to Burt, not YCCC). Current price is \$50 (delivered) for 1,000 cards. Also available is the glossy version for \$70/1000.

**MEMBERSHIP ROSTER** is posed on the YCCC website. Updates are published in 'Movers and Shakers' when members move or change call signs.

**COMPUTER STUFF INTERNET REFLECTOR** There is an Internet mailing list for YCCC members. To subscribe, send mail to [yccc-REQUEST@yccc.org](mailto:yccc-REQUEST@yccc.org). Insert only the word "subscribe" in the subject of the mail message. (Do not send messages to the reflector that have file attachments, HTML formatting, use boldface or other fancy fonts, etc.)

**WWW HOME PAGE** Come visit us at <http://www.yccc.org> Our Webmaster is Mike Gilmer, N2MG.

**ADMINISTRATIVE STUFF The W1 QSL BUREAU** is sponsored by the YCCC. Keep your account up to date by sending a check. Stamps are sold at face value, envelopes are 20 cents each. Address: W1 QSL Bureau, PO Box 7388, Milford, MA 01757-7388. Email address: [w1qsl@yccc.org](mailto:w1qsl@yccc.org).

**ARRL COMMITTEE REPS** are:

**CAC:** New England Dick Green, WC1M    **Hudson** George Wilner, K2ONP    **Atlantic** Michael Gilmer, N2MG

**DXAC:** New England Bob Beudet, W1YRC    **Hudson** John Sawina, NA2R    **Atlantic** Chris Shalvoy, K2CS

**VUAC:** New England Ed Parish, K1EP    **Hudson** Frederick Lass, K2TR    **Atlantic** Joe Taylor, K1JT

**ARRL LIAISON:** Tom Frenaye, K1KI.

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