Scuttlebutt

June 2011 **Issue 209**

Next Meeting: YCCC Barbeque
June 4th - Noon till the fun is over
K1RX's QTH - 120 South Rd, Kensington, NH

Captain's Cabin

First of all, thanks to the membership for your vote of confidence to elect me your president…

How Did I get Here?

Believe it or not, I actually declined the nomination for president of YCCC less than two weeks before the election. Fortunately for me, and I hope for YCCC, the nominating committee politely ignored me! After first saying no, I began to seriously consider taking on the role of president, and I started to see the opportunity for what it was: a chance to do more for YCCC and the contesting community than what I can do with a tribander and wires. By the time the election rolled around, I had become thoroughly jazzed about the idea of guiding this great club. At this point I'm *thrilled and excited* about the opportunity to lead YCCC. But I must make sure I remember this 'don't take no for an answer' approach when it's time for an exit strategy!

One thing that helped me warm up to the idea of taking on this job was when Mark K1RX pointed out that I didn't have to do it all myself. I might have a tendency to try to take it all on, so I need to remind myself, and all of you, that you need to help me out as much as possible. This goes for all aspects of running the club, as follows: If you have an idea for a presenter/presentation, let me know. I want you all to think and act as ambassadors for YCCC. If you hear of an out-of-town contester who is passing through our area when we are having a meeting, speak up and try to get him/her to come to a meeting and maybe make a presentation. If you do a presentation for a local radio club, consider presenting it for us as well. If you know of a good venue for our meetings, perhaps at one of the different locations outside of Sturbridge, let me know.

So Now What?

I have the great fortune to be taking over the reigns at a time when YCCC is doing very well. We have a large and growing roster, and our treasury is in good shape. We have won 3 of last 5 CQWWs and 4 of last 5 ARRL contests. I'm a great believer in the saying 'If it Ain't Broken, Don't FixIt'. The club's not broken, so there's not much to fix. In general, my approach will be to continue the great programs and philosophies that are already in place and working well. Mark passed on his wisdom to me, in that the key to making the YCCC great is to make sure it is Fun to be a member.

FUN

When you think YCCC, what comes to mind? When I think of YCCC, I see these meetings with awesome presentations and good natured camaraderie. I see the picnics, BBQs and Area Meetings that have been so much fun. I see the name Yankee Clipper Contest Club spelled out at the top of the Unlimited Club Competition results. I see the club name listed on the summary sheet of many logs sent in.

I want to continue the strategy of making it fun to be a member, fun to come to meetings, and fun to operate in contests at YCCC stations. This is mostly a hobby, and we do it because it is fun. As long as YCCC offers fun to its members, it will thrive. As long as it's fun to come to meetings and be a member of YCCC, we will flourish. If we lose that formula then membership and scores will decline. As my son's fencing coach says," It's not all about winning. But remember – winning is fun"! ----- (Continued on page 5)

Yankee Clipper Contest Club

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New Members (603) 778-1222	Mark Pride, K1RX

Directions to K1RX Barbeque

K1RX is located approximately 7 miles west of Interstate 95, Exit 1 as you cross into NH from MA.

Coming from I95, turn onto Rt. 107 North (actually going west. away from the seacoast) and follow to Rt. 107, passing Rt. 150 and then look for house on left. House number is 120 South Road (Rt. 107). House numbers count down as you go west on Rt. 107.

From the west, Rt. 125 or Rt. 101: East on Rt. 101 to Rt. 125 South. Approximately 7 miles down Rt. 125, then left turn on Rt. 107 (not Rt. 107A) and follow for 4 miles. House is on right after passing the Kensington town line / Apple Hill Golf course.

Telephone: 603-778-1222

Area Managers

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NVT (802)	Al Frugoli, KE1FO	(802) 893-8388	ke1fo@arrl.net

The editorial deadline for the Scuttlebutt is the 10th of every odd month.

Flotsam & Jetsam

Barnacle Jack (BJ) Schuster, W1WEF **w1wef@arrl.net**

Ahoy Maties!

Hope to see many of you at the K1RX barbecue June 4. Looking forward to it more than ever after missing Dayton for the first time in years.

Speaking of Dayton and first time, there were a couple of neat firsts this year by the contest organizers.

> Two sessions of Contest University could be viewed live on- line. BJ caught the second one by Rob Sherwood, NC0B on contest radios. If you missed them they will be available on the PVRC Webinar site at pvrc.org/webinar.
>
> The second neat live on- line idea this year was to be able to look in on the gang in the Crowne Plaza Super Suites on Wed, Thursday, Friday and Saturday nights. BJ tried it on Wed night but it wasn't up, and I'm not sure how well it worked the other nights, but I'm told there was also a replay of an EZNEC session from Contest University on Thursday night when I was out.

In case you never noticed, AK1N points out that the MFJ catalog offers many individual parts for sale, that are no doubt used in their products but that you might need for a homebrew project. For example, air variable capacitors, roller inductors, air wound coils, knobs, rotary switches, transformers and lots more. Smart marketing if you ask BJ...they have the parts, why not sell them? Order your catalog at 800-647-1800 or www.mfjenterprises.com. When BJ visited and toured some of the Starkville, Ms MFJ facilities a few years back, it was good to see American assembly workers building all kinds of products.

I'm sure I said this before, but it's worth repeating. When my old buddy, K1TO was here recently and did some antenna work for me that I normally would have done myself - but couldn't because of a back operation, Dan didn't have tools with him. Because I had documented all the bolt and nut sizes on the tower, I could send him up with just what he needed and it became a fast job. (my back is doing fine but still have to watch the lifting)

Dan's business in Florida is "A-1 Tower Service". You can read the reviews on EHAM.NET.

Although I've been doing tower work for years, I learned a few things from Dan in his short visit. He impressed me with his safety considerations...two things I always knew I should be doing but foolishly didn't. Dan wore a hard hat; I almost never wore mine because it wasn't comfortable. I should have gotten a better one. When I came to obstructions on the way up the tower, like guys or the sidearm mount, I always unbelted until I was past them. Dan has two lanyards on his belt, and ALWAYS had one around the tower when he unhooked the other.

I also learned that I have never installed a mast in a rotor properly. I always left a space between the top of the rotor and the bottom of the mast, and supported the weight of the mast with the rotor mast clamp and/or thrust bearing. I did this for easy rotor removal. Dan pointed out that the weight of the antenna and mast should be resting on the rotor. While he was up the tower, I got my Yaesu rotor instruction booklet, and sure enough it says the rotor can support 550 lbs! Thinking about it, that bearing ring on the rotor is DESIGNED to support more of a load than the top half of the rotor itself! HyGain rotors are similarly designed to support the load.

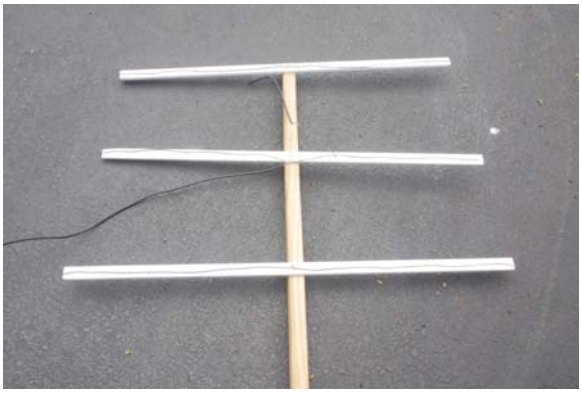
If you do have to raise the mast so you can remove a rotor, you need a way to then support the weight temporarily while the mast is raised a half inch or so above the rotor. Dan uses a clamp he makes from two U Bolt saddles with a couple of bolts and nuts, that he places just above the thrust bearing or tower sleeve..

By the way there's an excellent new book published by ARRL, written by Don Daso, K4ZA. If you read Don's column in NCJ, you know you can expect an excellent comprehensive manual in "Antenna Towers for Radio Amateurs" .

Don, K2KQ sent along a photo of his sidearm for a small antenna made from readily available plated perforated angle iron stock. If you're lucky, the holes will even be in the right place!

"Each pair of angle irons forms a triangle when attached to the tower.
The two pairs are about a foot apart, one pair below the other. A mast is U-bolted to one of the triangle members. Each piece of the triangle is U-bolted to two of the tower legs, one piece below the other. Where they cross over, they are bolted together with 1/4-20 stainless hardware. What you see holds a Cushcraft A3S. It's the bottom antenna of my little stack, fixed on Eu. It's been in use for about ten years. You could put a rotator on the mast and could turn the antenna around 150 degrees."

Don also describes the following simple 2M yagi that he built to use in finding a noise source in his neighborhood.



"The 2M Yagi is pretty simple. The three elements are #12 solid insulated wire, stapled to three furring strips nailed to a piece of 1x1.

The lengths of elements are: Director:35 1/4 inches;
Driven : 36 1/2;
Refl : 38 1/2.
Spacings are 12 inches for both D-De and R-DE

The feed uses an off-center arrangement. The shield of RG-58 is attached to the center of the DE and the center conductor goes through a capacitor made of 11 inches of RG-58 and attaches to a point 4 1/2 inches from the center of the element. The capacitor could probably be eliminated. It's made by connecting center conductor to center conductor and then attaching the shield at the same end to the feed point. The far end of the "cap" is just open.

The little Yagi works pretty well. It has lots of directivity and I can key repeaters all over the place if I attach it to my HT. I've used it with a 706 to find power line noise. You need to put the 706 into AM mode with the agc off and the attenuator in. If you don't, you won't be able to see a peak in the received noise."

See you at the pileups at the BBQ!

73
BJ, W1WEF

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YCCC Officers 2011-2012

Elections were held at the April 9, 2011 meeting. YCCC officers for the 2011-2012 club year are:

President:	K1KP Tony Brock-Fisher
Vice-President:	W1UE Dennis Egan
Secretary:	NJ1F Brian Szewczyk
Treasurer:	K1EP Ed Parish
Activities Manager:	W1EQO Jim Ussailis

Appointed Positions:	New Member Manager:	K1RX Mark Pride
	Webmaster:	WB1CCL Linda Glagowski

Thank you to the outgoing officers for their years of dedicated service to the YCCC.

Brian Szewczyk
YCCC Secretary

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Thanks from WRTC2014 Committee!

On behalf of the entire WRTC2014 Organizing Committee, I want to thank the YCCC for supporting the project with the two generous Station Sponsorships that were approved Saturday at the meeting.

Also, quite a few people expressed interest in helping us organize and execute the event. If you have a specific area of expertise, please contact the relevant Director directly. They are:

K5ZD – Web, Marketing, PR	WC1M – Finance	K1KI – QTH acquisition
K1TO – Team Selection	K1RX – Antennas	N2NT – Station/Competition rules
KM3T – IT	N6TR – Judging	K1AR – Travel/lodging

They can be reached by email at: (callsign) @wrtc2014.org

Doug

Captain's Cabin (Continued from Page 1)

Personal Involvement

In the same way that I went through a transition of attitude about serving the club, it is my hope that others will go through the same thought process and become excited about opportunities to serve the club. We have many members who have served for years in some capacity or other, with a title or without. I realize all too well that as individuals we all have many demands on our time from organizations and individuals far more important than a hobby club. Having returned from a long absence from YCCC to raise some kids, I know that we are all in transition. Some lives are becoming busier, while others may be gaining free time. The natural tendency for all of us is to vigorously protect our time resources. In my case, it was almost an automatic knee-jerk response, until I gave it some serious thought and realized that serving the club was something worth my time commitment. It is my hope that as you hear about opportunities to serve the club you will realistically consider your availability to commit some time to make YCCC more fun for everyone. If you have enjoyed being a member of YCCC for a while but haven't yet helped out by serving in some position, I'd like to ask you to consider giving some time back to the club. I'm going to be looking through the entire organization of the club, to make sure that all positions are filled with motivated people. Some of these transitions have already started. I have formed an Advisory Council to give me guidance as I transition into the role of president. I have asked Mark K1RX and Jack W1WEF to be on this council, and may add others as I go forward. Additionally, Mark will not be getting off easy or riding into the sunset, as he will take on the role of New Member Manager, to better welcome new members and integrate them into the spirit and activities of the club. The website will be taken over by Linda Glagowski, WB1CCL.

Area Managers & Local Meetings

I previously served YCCC in the capacity of Vice President, and before that, Area manager for EMA. I learned then of the huge contribution that the area mangers and local meetings can make in helping the club provide more fun and value to the members. I want to make sure that the Area Manager positions are filled and that we do as much as we can to support the Area Managers and local meetings. I'm currently working to make sure that all the Areas have an Area Manager, and that they have a clear understanding of how they can help the club. There are openings in a couple areas, so if you are interested, please let one of the officers know!

Contest University/Contest Cookbook

Another really great concept that was originally started at YCCC is Contest University. It seems the Contest University idea has 'gone big time' with K3LR at Dayton – and it is very successful. Still, I believe there is a need for it in YCCC. It's been a while since we held them, and we have many new members who have never benefitted from a CU. I'd like to hold them, as we used to, in the fall before the start of contest season, as a means of getting folks together and fired up about contesting. There's more to come on YCCC Contest University. Would you like to help out by being a professor or providing a place to host a CU? I am often reminded about a Contest University at my home which was attended by about 60 YCCCers!

Coordinate with WRTC 2014

Aside from the landslide vote that elected your new slate of officers, there was another landslide vote that approved the expenditure of $2K towards sponsorship of two WRTC 2014 stations. I'm proud that YCCC has stepped up to the plate financially to support this unique radiosport event. We need to be ready to provide other support, in whatever form it might take, as the event comes closer to reality right in our backyard. Many YCCC members are already heavily involved in the management and organization of WRTC 2014. I'm sure there will be plenty of opportunities in the coming years to support WRTC 2014.

Recognition

We have kicked around various ideas for a Recognition program long enough – it's time to get down to business and DO SOMETHING! It seems that no recognition program is going to be perfect, and you can't please all of the people all of the time. So I think it is important to put something in place and get it started, then work to improve it as time goes on. In my mind, I envision a Recognition Program that is simple to run and provides recognition for three areas: Participation, Improvement, and Achievement. If you look at our score distribution by operator, you see the entire spectrum from beginner/newbie to the super achievers. Our recognition program should provide incentive for members to get on the air, do better than last year, and contribute big scores to the club. I'll be working to put such a program into effect in time for the coming contest season.

One New Initiative

Finally, I don't want to stretch the resources of the club too thin by taking on a lot of new initiatives. So I'll have to pick just a single new effort to add to the club's plate. I would like the club to do it's best to encourage more young people in contesting. We have a handful of really young contesters. I realize that it's hard enough to interest today's youth in ham radio alone, let

alone get them to make the transition into contesting. I don't have any good answers right now for this challenge, so I'm looking to the membership to provide some ideas to support young people in contesting. In 40 years, I'd like YCCC to continue to be an active, successful, growing contest club. In order to achieve this goal we need to be attracting young people into the contesting community.

We need to join with the efforts of Near-Fest locally and K3LR's CTU nationally to place an emphasis on youth involvement. K1AR and K1DG started contesting when they were in their teens – where are the ' ARs and 'DGs of tomorrow?

Field Day

The next big upcoming (non)contest is Field Day. Historically, YCCC has encouraged members to join with their local clubs and groups for Field Day. I look at this as a golden opportunity to 'spread the word', and find new blood for the contest ranks. Several guest operators at K1KP got their feet wet at Field Day. Be on the look out for the wide-eyed kids, and the iron-butt unlicensed Field Day ops! Have Fun, & Be Safe for Field Day!

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Save these Dates!!		
2011-2012		
YCCC MEETING SCHEDULE		
Day	**Date**	**Location**
Saturday	Jun 4, 2011	K1RX BBQ Kensington, NH
Sunday	Aug 7, 2011	Boxboro or EMA/SNH
Saturday	Oct 8, 2011	Springfield, MA
Sunday	Dec 4, 2011	Sturbridge, MA
Saturday	Feb 4, 2012	Newington, CT
Sunday	Apr 1, 2012	Sturbridge, MA
Note: Dates are firm **Locations may change based on rooms/facilities availability**		

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W1ZM, Gerard "Jerry" Scarano SK at Age 96

W1ZM was a contesting powerhouse in the 60's as W3MVB, He was a member and past president of PVRC, a YCCC founding member. and the source of literally millions of YCCC contest points. More importantly, Jerry was also the source of friendship and mentoring for many of the top contesters in the Northeast US.

Moving back home to CT in the early 1970's after retiring from federal service (DoD), he started his own engineering consulting firm and in his spare time built an incredible station on a hill in Gales Ferry, CT overlooking the Thames River.

He was given the call of W1ZM and hosted numerous multi-multi's contest entries in addition to record setting Single-Op entries.

One of Jerry's last "expeditions" was last summer to VY2; where, along with K0EJ, he visited K1ZM/VY2ZM and inspected Jeff's station and his incorporation of some parts from Jerry's former Gales Ferry antenna farm into the VY2ZM antennas.

It's difficult to say enough good about Jerry, but we can try. Jeff, K1ZM/VY2ZM has added a link to a tribute to W1ZM on the VY2ZM.com website - the link is on the homepage on the left hand side at the bottom of the clickable links.

Link to W1ZM Tribute Webpage at: http://www.k1zm.com/
Tribute Webpage to W1ZM at: http://hamgallery.com/Tribute/W1ZM/

Re-visiting the Double-L

Don Toman, K2KQ

In 1999, I published a short piece in the 'Butt about what I had hoped would be a proposal to end the excuse for not getting on 160 meters. It was (and still is) a simple vertically-polarized antenna for 160 meters that doesn't need a "ground" system...and works. The original idea was to have a configuration that got people on the low bands with decent signals, a minimum of complication and without a lot of cost connected with trying it out. It was centered on 160-meters and I added the 80-meter antenna because it was essentially free.

The idea was:

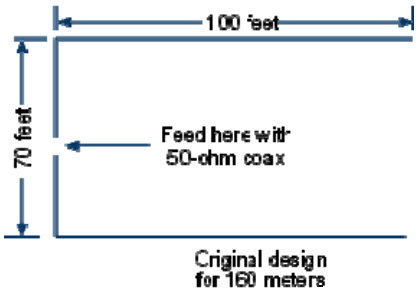
> *Lay out a 270-foot wire dipole, haul up the top corner (35 or so feet above the feedpoint) with a suitable halyard, attach and dress a 50-ohm coax feedline, attach the rest of it with ropes or heavy strings, trim it to resonance, and get on the air.*

I called it a *Double-L* because it can be looked upon as an inverted-L fed against an L. *It's a shortened half-wave vertical with a wide-spaced transmission line as an end load.* Because it's a half-wave antenna, it does not depend on a current return path that includes the lossy earth. For the vertical length, it has the highest attainable radiation resistance, and therefore the highest possible efficiency for a given near field earth loss. It works best when the vertical portion is between 70 and 90 feet in extent. It requires two fairly tall supports, and has the virtue that it's easy to adjust to resonance by trimming the bottom horizontal leg.

This is a *half-wave antenna.* As such, it does not use the ground as part of the return current path. Ordinarily, feeding a half-wave vertical is tricky because the feedline passes close to the high-voltage portions of the antenna. One usually gets around that problem by feeding it at the end, as with a J-pole, Ringo or other variants. This configuration can be fed with coax directly in the center because the ends of the antenna are kept far from the feedline by the geometry.

In contrast, an inverted-L has the current peak at ground level, depends on a return path that includes, instead of avoiding the ground. That arrangement is often lossy, and, for the same vertical length, has half the radiation resistance of the half-wave configuration. Much of the folklore associated with grounded verticals has to do with avoiding loss in the return path. The Double-L avoids much of that loss.

The L-over-L geometry is simple:



It's hard to understand how such a simple antenna can be complicated. Since the original article was published in the 'Butt, it has been published in a few other places.

As a result enough people have now used the *Double-L* antenna over twelve years and in enough different places, to know that it works and works very well.

I use #14 plated, stranded teflon-covered wire for mine. It's hung from the top corner by a strain relief made of a foot of braided dacron rope attached to the antenna wire with solid wire, either copper or aluminum, wrapped around the rope and antenna wire. It's self-supporting, if you are careful to keep strains off the radiating wire. I hold the bottom corner in place by running the wire through a loop of rope that ties the corner to the ground. I like to use a bowline to form the loop and a double half-hitch to hold the bottom of the rope. Anything more complicated is unnecessary. My current one has been in place for about eight years.

The idea of a full-sized quarter-wave vertical with 120 half-wave radials was cooked up by Brown around 1939 to give broadcast engineers a design that would assure a workable antenna every time. Brown's approach will not work much better than this simple configuration, none of the variants of which I'll show you below require any radials. The variation from the most costly and complex to this simple variant is no more than about 2 dB. That fact has been covered by other writers such as Cebik and Severn, who have done meticulous work proving what basic physics tells us, and I won't repeat their good work here.

The vertically-polarized radiation is omnidirectional; circular in the horizontal plane. It is independent of the orientation of the horizontal loading wires.

This is NOT a multi-band antenna. While one could feed it with a tuner and open wire line, performance on any band but the one at which the wire length is a half wavelength will not be optimum. Since it's a very good match to 50-ohm coaxial line on the band at which it is a half-wave antenna, it's hard to understand why anyone would want to feed it in any other way.

But, then I'm just an engineer and not a psychologist.

It's important to understand that, no matter how much copper you put into the ground, the only way to get superior performance at low radiation angles is to install a vertical antenna with miles of salt water in the foreground in the direction of the desired propagation. For a good illustration of that fact, take a look at the coverage diagram for WCBS (880 kHz) and WFAN (660 kHz). The antenna for these stations is a single diplexed radiating system located on an island in Long Island Sound. Note how much better the coverage is in directions where there's salt water compared to directions where there isn't much. Your antenna will not be any different.

http://www.radio-locator.com/cgi-bin/pat?call=WCBS&service=AM&status=L&hours=U

Putting a lot of copper into the ground, while, for a grounded quarter-wave may be necessary for the sake of efficiency, will not improve low angle coverage.

It's like feeding a dummy load with a really low-loss transmission line.

I get a lot of correspondence regarding the antenna and the dual-band variant I originally showed for both 160 and 80 meters. I'll show you some variations and I'll try to answer some questions that come up repeatedly. For this discussion, let's talk only about the single 160-meter antenna. I'll leave 80-meter variants and combinations to another article.

Questions regarding the C-shaped (lazy U) configuration:

1. What happens if the top leg is tilted down?

If the top leg slopes downward, the radiation resistance is lower than it would be if the leg were horizontal. You will probably not notice much of an effect until the top wire is tilted down beyond about 30 degrees from horizontal. If, for some reason, the top wire can tilt upwards, the radiation resistance will be a bit higher than it would if flat.

2. What happens if the vertical part is shorter than 70 ft?

As a rule of thumb, the antenna works best if the vertical part is around 1/3 of the total length. That length gives good efficiency and a reasonable match to 50-ohm coax. While, for 160, 90 ft vertical would be ideal, I find that 70 feet is still effective. Less than that works too, but efficiency falls off at less than 50 ft.

The radiation resistance of the antenna (NOT the feed impedance) for a short antenna changes as the square of the length. Therefore, changing the length by a percentage, results in the radiation resistance changing by the square of the percentage. Change the vertical length by 10% and the radiation resistance changes by $(1.1)^2$ or 1.2. A 70-ft 160-meter radiator has a radiation resistance of about 12 ohms. A 50-ft one has a radiation resistance of about 6 ohms.

This antenna, as described, has maximum current flowing at the center of the vertical portion, with small, oppositely-flowing currents in the horizontal legs. The currents in the horizontal legs are nominally in opposition and partially cancel out horizontally-polarized radiation. Current in the vertical section is nearly uniform, tapering to the top and bottom. The shorter the vertical section, the lower the current-length product and the more current there is in the horizontal wires.

3. What happens if the top and bottom wires are not in the same plane (parallel)?

If the top and bottom legs are not parallel, there's an increase in horizontally-polarized radiation and a corresponding decrease in vertically-polarized radiation.

4. If I don't have enough space for the top, bottom or both wires, is it OK for the wires to meander?

Yes. The top and bottom wires are there as a load and have little effect on the radiation pattern. You can turn them at right angles (more than once) in the horizontal plane with no major effects on the antenna other than possible changes in where it resonates. Since cancellation of horizontal radiation is maximum when the wires are parallel, if you have a straight top wire and a meandering bottom wire, you will get a small increase in horizontally-polarized radiation, and the vertically-polarized radiation will be very slightly asymmetrical with a variation of only about a half decibel in the worst case.

The worst case is when the antenna takes the shape of a "Z" with the top and bottom horizontal sections going in opposite directions. That configuration results in the largest degree of horizontally-polarized radiation.

Most of the current in the top and bottom wires is carried in the first third of their length. You should therefore try to keep the bottom and top wires parallel for about a third of the length (about 30 ft or so). After that, they can meander with minimal effects.

5. How high should the bottom wire be?

I put mine high enough so that deer and people don't run into it. It's OK for it to tilt...within reason, just like the top wire. Remember that the far end of the wire is at high rf potential, so it's important to keep it away from ground and things to which an arc might be struck. You don't want to start fires.

6. Do I need a balun

No!

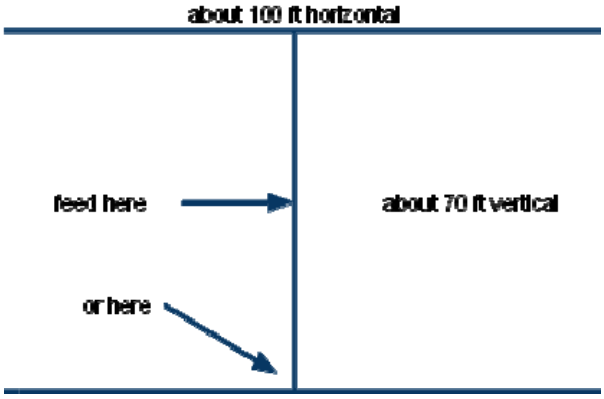
As long as the transmission line isn't close to the ends (which are at high potential) coupling to the outside of the feedline with geometries shown is negligible. Feed it directly with 50-ohm coax. If it makes you feel better, put ferrites on the feedline, but you are just wasting money. If you feed it at the bottom corner instead of at the center of the vertical, you may need to add some isolation, but not if you feed it at the center.

You can also end-feed it as a Zepp (at the end of the lower wire), but that requires a matching network or a tuner of some kind. As long as it's symmetrical, the current maximum is still at the center of the vertical portion. Don't try to make it into a multiband antenna this way.

Keep in mind that this is a shortened vertical that keeps the high-voltage parts of the antenna well away from a center-located feeder. Center feeding a *full-sized, straight* half-wave vertical presents a problem that's avoided with the *bent dipole* configuration. One needs to avoid inducing voltage on the outside of the feeder due to proximity of the end of the dipole. That's why full-sized half wave verticals are often end-fed (like the J-pole or Ringo arrangement). That problem does not exist with bent dipoles because the feeder does not pass close to the high-voltage-carrying ends of the antenna.

Keep the feeder away from the ends and run it perpendicular to the plane of the antenna.

Here's a variant that's shaped like a lazy "H" and has no horizontal radiation. The primary reason that I don't use it myself and didn't describe it in the first place is that it's not as simple to erect as the basic Double-L. Typically, it may require three supports, and the performance difference, in my opinion, is not worth the trouble.



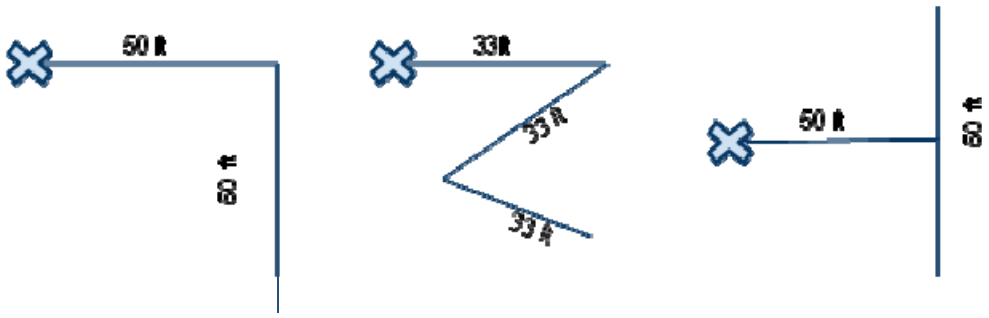
A way to erect this configuration with only two tall supports could use a strong catenary rope to support the top wire, with the rest of the antenna hanging off it with other ropes as needed. An 80-meter version that's about 40 feet high is easily erected this way. A 160-meter version is more challenging.

Of all the correspondence I get on the antenna, the most common problem people encounter is lack of enough space to stretch out the horizontal legs.

Here are a few ways to reduce horizontal extent that work well, with small variations in performance. *These are nominally ways to manage the bottom wire, but what's done about the bottom wire is equally applicable for the top wire.*

If you do not have enough room to stretch the top wire out to 100 feet, stretch it as far as you can and then turn it at right angles, in the horizontal plane. If the turned piece slopes down, it's not the end of the world. Do the best you can.

Here are some horizontal wire variants, shown in the horizontal plane. The vertical radiator runs perpendicular to the page at point X:



Single bend **Double Bend** **Tee End**

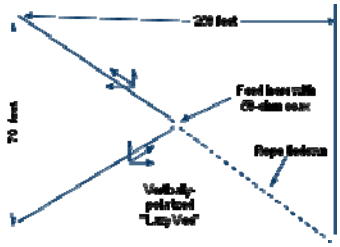
All of these will work. The single bend and the Tee end are especially convenient for the top wire. Lengths are approximate and will require some experimentation to make resonant. Keep the feed line away from the ends, which carry high voltages. You can also use the bottom part of the lazy-H variant (two wires instead of one) with a single top wire. The bottom wires can be bent as in the variants above.

Here's another variation on the basic idea...a half-wave antenna with a simple feed system.

a *lazy-V.*

Everyone is familiar with an inverted Vee, which is predominantly a horizontally-polarized half-wave antenna. A little quick vector analysis shows that the horizontally-polarized currents add and the vertically-polarized currents (mostly) cancel, leaving mostly horizontal polarization.

Imagine now that you turn the inverted vee on its side, rotating it 90 degrees. You now have a vertically-polarized antenna. An advantage of this configuration is that you need only one tall support. The feed point and the top leg can be anchored to the ground (or a short mast).

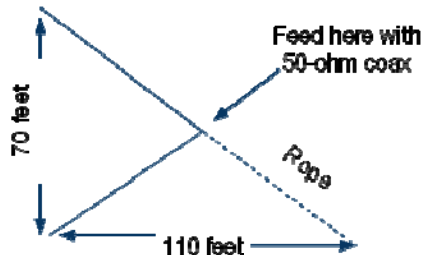


This configuration has been covered by others in the literature...and it works. It needs more room in the horizontal dimension than the lazy-U, but it will work about the same. If you can put up a half-wave "sloper," which has substantial high-angle horizontally-polarized radiation in the plane perpendicular to the wire, you can eliminate the slant polarization by simply running the bottom portion back to base of the main support. As with the previous examples, the fact that the feed point is far from the high voltages at the ends makes a balun unnecessary. Note that the current maximum is at the center of the vertical extent, again making the radiation resistance as high as possible for the height.

The Lazy-V is a neat approach if you only have one tall support. If you can erect a lightweight support at about 30-40 ft. to hold the feed point, you don't need as much horizontal space as for the case where you support the feed point with a rope alone.

Using Loading Coils with a lazy Vee.

This Lazy-Vee arrangement is attractive if you use a loaded dipole, similar to the kind sold commercially by a few suppliers. You can make a good-performing 160M vertical with one high support, a loaded 170 or 135-ft dipole and some rope. Here's an example:



A 135-ft loaded lazy-Vee dipole with one high support

A dipole with loading coils in the wires is more efficient than one might believe. Its primary disadvantage relative to a full-sized dipole is reduced bandwidth.

The long rope to the ground can be truncated if you can support the apex or a point further along the extended top leg with something suitable. If you can get the tensions right, you can use a horizontal rope, tied to a tree or whatever is suitable. A little thought will present other variations that will be apparent to anyone with a little rigging experience.

A combined loaded 160 and full-sized 80-meter antenna can be made this way. A few companies make choke-loaded single or dual-band examples. Drop me an e-mail for a name.

Verticals work well at 160M, are acceptable at 80M and are at a disadvantage to horizontal antennas at 40M and higher due to phase shift in the field reflected from real ground. Phase shift (due to the dielectric constant of the ground) leads to the pseudo-Brewster effect, which, for any ground other than a lot of salt water, kills low-angle radiation.

Try one of these on 160 or 80 meters. It will be worth the small effort involved.

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YCCC Moxon Project

It's my guess that many, many club members have Cushcraft 2-element 40 meter beams, either the old 40-2CD or the XM240 version. (I am one proud owner of the old style). I was wondering if anyone has done the W6NL Moxon conversion? Lee presented a great upgrade at Dayton years back. There are many references on the web – you can get an idea of the mod here:

http://www.k3lr.com/engineering/moxon/W6NL_Moxon104.pdf

This looks like a great improvement to the venerable 'Shorty Forty', with great improvements in efficiency and bandwidth. By my calculations you could get 1 db net gain from the efficiency improvements.

I was wondering if there might be sufficient interest to make it a club project. Group parts buy, etc.

If you have serious interest, email me at barockteer@aol.com. I'll make a list. (Not volunteering to be project manager; got plenty to do in my new job)!

Tony, K1KP

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** 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**. 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**

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**, detailing card information per "QSL Request" form available at 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 callsigns.

COMPUTER STUFF *INTERNET REFLECTOR* There is an Internet mailing list for YCCC members. To subscribe, send mail to 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**.

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