

Wire Antennas: The Good, Bad, and The Ugly:

[bob raynor \(N4JTE\)](#) on October 6, 2007

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Wire Antennas: The Good, Bad, and The Ugly:

The following notes are from my experiences during the last 5 years of intense experiments with various wire configurations for the 80, 40 and 20 meter bands during the solar minimum. The hope is that some of the newer hams just might get some insights into the wonderful world of antenna experimentation and roll their own, so to speak.

CAVEAT: All antenna evaluations are purely subjective and as we all know, to the ham loading up a slinky in his attic a full size dipole will be nirvana.

The “ I can work anyone I hear” mantra can be seriously misleading but probably true for all the wrong reasons. So the following observations are from on air tests with familiar stations across the 50 states and friends from around the world. None of the antennas were store bought as I will leave those evaluations to the hype in their advertisements.

80/75 meters; My primary need on this band is for an antenna that allows me as a NCS to hear and be heard by stateside checkins on a nightly basis. My secondary goal was, of course, to be able to work some dx down the band.

Best To Date; 40 meter EDZ with 85ft ladderline to a one to one balun with coax to the shack. On 80/75 it is slightly long at 3.940 but is flat down in the DX window. Of course on 40 meters it has some real gain in a bidirectional, rather narrow, pattern to Europe and the US.

Second choice; Flatop dipole North/South or an inverted Vee, The flattop exhibited slightly more directionality broadside then the vee and was more quiet during the summer months. All flattop antennas were between trees with an average height of 50 ft. Inverted VEE was 45ft to center.

Third choice; Full wave vertical loop based on the Radio Works super loop.

This one I got up to 70ft. on a neighbor's tree with the other end at 60ft. in my yard. Finally got it loaded with a tapped 450 ohm stub to a one to one balun.

After many A/B tests against the EDZ over two months I could never get it to beat the ZEPP any time of the day on any part of the band.

40 meters; Due to my work schedule this is the band where I can spend most of my operating time and so I have invested much effort to squeeze out every available DB from my antenna experiments. The antenna of choice on this band needs to handle a WAS net including AK and HI where I am often the NCS and as such, I need to hear those guys when they are on. Also this is my main early evening DX window operating time so I need a good wire with gain.

Best To Date: 40 meter 2 element ground mounted diamond shaped quad, reversible. See: <http://www.n4jte.blogspot.com/>. This antenna is a parasitic array with 20ft. spacing that has out performed any other wire I have tried.

The top corners are at 45ft. on pushup masts and the ability to switch directions instantly with gain has made 40 meters my favorite band for local and DX work. A pleasant surprise was the fact that although basically orientated East/West I still have excellent copy to the north and south due to the wide beamwidth, so good that I took down a dedicated south sloper no longer needed, also freed up one of trees! When 15meters is open it works extremely well in all directions, not sure why but who cares.

Second Choice; 40 meter EDZ. Kept this one up a long time for comparison purposes. The gain it exhibits is obvious compared to a reference dipole at the same height but beware that gain comes with a very narrow beamwidth, was not a problem with me until the FB starting showing back up with a vengeance and I put the quad back up. If you need gain in two directions on a consistent station to station schedule, the zepp is the way to go, great value antenna.

Third Choice; 2 element phased verticals broadside switchable endfire configuration. Used this antenna on 40 meters for many years in Florida with exceptional results, big disappointment in NY. Gotta believe my ground conditions did this one in. Major time investment in radials and absorbing many books on the subject left me with a better grasp of phase systems and farfield requirements but not much of an antenna for my needs.

Fourth choice; 4 element sloper, K4AY type with folded in ends. Had high hopes for this one after figuring out a center support of 60 ft. tall. This time my greatest difficulty was getting the 4 different feedlines to have equal swr when switching directions. Gotta have those feedlines perfectly equal in electrical length, not for the faint of heart. After a month with it I was not impressed as the EDZ was always 3 to 5 s units better in the same directions.

With the folded in ends I was hoping to be less subject to crummy ground conditions but I might not have gotten the phasing correct. Big reason I went back to parasitic arrays.

20 METERS For the one or two hams out there that don't have a tower or beam for this band, including me, I needed to find a way to get on this band with some real gain, mostly for some DX contacts. This time of year at around 5pm local there are a lot of dx stations calling cq.

Best To Date: 20 meter EDZ, yep back to the old zepp again. The secret to this antenna is to make sure it's pointed at the area you want to work most consistently. At 65 ft.long, it should not be impossible to run two at right angles to each other and cover the world with a true doubling of power and reception. The zepp needs to be fed with the appropriate length of 450 ohm matching section in order to match to 50 ohm coax, there are many sources available on line or books that explain transmission line theory and I am still learning more on that subject daily.

Second choice; After I attempted, and failed miserably to construct a full size 2 element 40 quad on push up masts I ended up with a couple of homemade spider mounts and LOTS of fiberglass spreaders. So I built a 20 meter single element quad using the old armstrong rotator up about 20 ft to the bottom wire.

As the zepp is pretty much useless stateside except the Southwest, the single quad does a remarkable job of filling in all the blank areas and enables consistent qso's stateside.

Wrap Up; I am fully aware of the fact that all our antenna options are limited by many factors, I am lucky enough to have a reasonable sized backyard and an oblivious neighbor with a handy tree, all of which was scoped out before I bought the house!

There are thousands of wire antenna designs out there and they all work to some degree depending on your needs and expectations. I concentrated on mostly single band matched antennas with some gain that fit my needs and bands of interest. Others may wish for multi band single feedline antennas and that's fine too. I hope the readers of this article would consider their best experiments and share their experiences also.

As I aimed this article at the newer hams out there looking to step up their antenna systems, I would hope that some of my experiments will jog your interest and perhaps inspire you to explore wire antenna design more in depth. The satisfaction of communicating on a piece of wire that you designed and stuck up in the air is only exceeded by the fun you will have and the lifetime friends you will make in the process.

See you on the greyline.

Bob Raynor

N4JTE

Member Comments:

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Wire Antennas: The Good, Bad, and The Ugly:

by [LNXAUTHOR](#) on October 6, 2007

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- thanks for sharing your experiences w/wire... i'm convinced that wire is the best bang for the buck when it comes to antennas, even though i have (and use) other types...

- what i don't understand is why folks would buy a commercially made wire antenna, such as the various G5RVs or bazookas on the market, when one's own wire antenna may be built less expensively with better components?

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [K0BG](#) on October 6, 2007

[Mail this to a friend!](#)

If it weren't for wire antennas, about 80% of the amateurs in the world wouldn't have any antenna! What's more, everybody thinks a balun is a cure-all, and it might be in some cases. However, if one was absolutely necessary, about 80% of the amateurs in the world wouldn't have any antenna!

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [KCØROM](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks for the informative article on wire antennas, many of the Big Gun operators will give you a hard time if you tell them you are running a G5rv or a wire dipole, but I have to make do with what I can hide in the tree's at my qth and a G5rv bent in and I shape is the best I can do for 80, 40 and 20 meters, and I use an Imax 2000 for 10, 12, 15, 17 and 20 occasionally, and a Cushcraft beam for 2 meters. It is not the best set-up in the world but at least I am on the air. 73 and I hope to work you some day. KCØROM
SCOTT

Wire Antennas: The Good, Bad, and The Ugly:

by [K1CJS](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks for your relating your experiences. As most of the more experienced hams know there is no two antenna installations exactly alike--even with identical antennas. Differences in location, surrounding structures, height above surrounding ground levels and umpteen more little differences work together to influence the effectiveness, directivity, etc., etc. of any antenna.

I suspect that is why people can't understand someone buying a simple antenna rather than making one from scratch--especially the wire antennas.

Anyway, thanks again. You never know when someone will pickup on the many ideas expressed here and homebrew their own antenna or combination that will work well for them at their location. 73!

Wire Antennas: The Good, Bad, and The Ugly:

by [WX1F](#) on October 6, 2007

[Mail this to a friend!](#)

One of my ham friends would take exception to the Zep comment "useless stateside". He works all over the US with his homebrew wire and only his manufactured beam beats it..and not every time! It's all in that magic three words. Location location location. You see....all his wires hang over his in-ground swimming pool! So...if I can just convince my better half about the benefits of RF and sunbathing.....(splash...anyone got a waterproof see-thru bag for my Kenwood TS-2000?)

Wire Antennas: The Good, Bad, and The Ugly:

by [N9AOP](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks for sharing your experiences. I have settled on an OCF but I have played with a mystery antenna which worked well but was a couple s-units down on 80 from the OCF which is what you would expect. Homebrewing a wire is more fun than waiting for the brown truck and perhaps many hams do brew their own but you just don't hear about it. About 30 years ago I learned a lot about wire antennas at field day. Today at least through the eyes of Q-Street field day consists of trailer mounted towers with a pro-96 on top or at the very least, on top of a local FD tower-ladder.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [WL7CMG](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks Rob for a great post...!!! I too hope that new hams will take note and decide that they can build, and have a GREAT antenna of their own with only a little time and effort. Just wanted to mention, I use a full wave horiz. 160m loop up at about an average of 40ft. I feed it with 450 straight into the shack and the Palstar. On 160m I've worked down into the lower 48 where it is supposed to only be a "cloud burner???"....hi. On 80m it is FB all over the state of AK. with super quiet RX. Now on 40m, where you are now getting a few wavelengths....What A SMOKER!!! Sure is great to get many 5/9++ reports. Altho I think because of it's irregular formation, (not a perfect square by any means), I get some nulls in a few places. But to the west coast and VK land she sure is a solid performer. I know many hams will no way have the space to put up such a wire. But I do believe in the saying...."Put up as much and as high as you can and go from there"....!!! YOU GOTTA LOVE THEM LOOPS...!!!
Have Fun and Good DX...!!!
Dave / wl7cmg
PS....I have 3 acres here and soon hope to make the loop about 3 WL on 160m...Wonder how she'll do on 40m there...???!!!!!...- hih. 73

Wire Antennas: The Good, Bad, and The Ugly:

by [KC9MAV](#) on October 6, 2007

[Mail this to a friend!](#)

Even though I'm a new ham i love wire antennas. There so cheap all you need is a antenna tuner! For right now i don't have an hf rig i have a hallicrafters wr-600 that i use a cheap wire antenna for.

Wire Antennas: The Good, Bad, and The Ugly:

by [KA9VAA](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks Bob, pretty well written article. Hope some of the newbies see it, I have worked 5 band was with wire and 151 dx confirmed. Of course the bands were better.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N7YA](#) on October 6, 2007

[Mail this to a friend!](#)

Nice article. Now the very last thing i am is an curmudgeony OF who sits around steaming about "kids these days", etc, etc...but there is absolutely no reason why anyone should BUY a wire antenna. Granted, i dont have a problem buying a rig, buying a tuner, or even a nice beam or vertical (you can make all of these things too), but come on! wire?

I was just reading through my new catalog of ham goodies i got in the mail yesterday and saw at least 7 wire antennas for sale...some were selling for upwards of \$100. the money isnt the issue, its the fact that we should all know how to at least make a simple dipole or doublet, cut it and feed it properly, tune it up...its a fine DX and ragchew antenna setup, and there are countless choices. I have over 200 countries and scores of other tallies from 5 to 100 watts using only wire antennas, many of them indoor. Making wire antennas is the easiest thing, every entry level ham should have this basic skill, you can find the wavelength formulas everywhere.

Thanks for posting this article, i really enjoy seeing fellow hams out there building stuff...this is a big part of the fun and tradition of ham radio, not to mention the pride in using something you built yourself and making contacts with it...of course, there is always trial and error, some things will work better than others, but thats the fun of experimenting and fine tuning. Theres a great feeling when you build an antenna system then get on the air and hear DX coming back to you. I am always the most excited to hear how well it receives, i will also leave the old one up for comparison if i can...but the pride in building something that works the first time is great!

Good luck on your new system and again, thanks for sharing it with us...all info is good info.

73...Adam, N7YA

Wire Antennas: The Good, Bad, and The Ugly:

by [K8YZK](#) on October 6, 2007

[Mail this to a friend!](#)

Nice article, and what is a beam. In my 40+yrs as a ham other then operating at my dad's house or MARS station, my antennas have been either a verticle or wire antenna and 90% of that is time is wire. There like the title says good/bad/ugly to wire antennas.

Put up as much wire as you can, and work the world.

Wire Antennas: The Good, Bad, and The Ugly:

by [K6YE](#) on October 6, 2007

[Mail this to a friend!](#)

Bob,

Congrats on a great and informative article.

While I have one commercial yagi (FORCE-12 C4XLD), my other antennas are wire for 160, 80, and 40 meters. When I first hooked it all up, I mistakenly designated the wire 40 meter sloper as the 2L portion of the yagi. I managed to work a fair amount of DX in the Indian Ocean and the Middle east (14.010 MHz CW).

When I first began in ham radio in th 60's, wire antennas ruled the roost for us newbies. They were inexpensive, easy to erect, and with a pi-network plus tube finals, easy to load.

Your 40 meter 3L quad looks like a killer and gives me some ideas.

Keep up the great work.

Semper Fi,

Tommy - K6YE
DX IS

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [AA4PB](#) on October 6, 2007

[Mail this to a friend!](#)

"I can work anyone I hear"

Interpretation: My antenna is as poor on receive as it is on transmit :-)

And - you don't need an antenna tuner for a wire antenna if you build it correctly.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [K4FX](#) on October 6, 2007

[Mail this to a friend!](#)

Thanks for the fb article Rob.

I had been a ham for about 5 or 6 years before putting up a tower and have used most of the antennas you mentioned here, I recall trimming coax on 3 slopers in the freezing cold, you are very correct about that one not being for the faint of heart! One of the best antennas I have ever had was a 75 meter delta loop at about 90' at the top in the tall pines. At greyline the Asian stations would peak at 40db over 9!

I worked a lot of countries, and had a lot of fun with those wires.

73
K4FX

Wire Antennas: The Good, Bad, and The Ugly:

by [AC5UP](#) on October 6, 2007

[Mail this to a friend!](#)

'JTE is dead on the money regarding Extended Double Zepps... Had a 20 meter version @ 32' that was oriented true north-south and was absolutely killer into Hawaii. Given decent condx it did well into EU and KL7 land as well. I've also had excellent luck with a 135' off center fed dipole (aka 'Windom') and the only advantages the OCFD had over the EDZ was multi-band operation and a four leaf clover pattern that was very handy in a midwestern location like mine.

Best way I've found to build an EDZ is to divide 1500 by the lowest frequency (in MHz) of the band of interest. Cut a 10 or 12 gauge wire to that length (in feet), then cut the wire in half. Divide 1200 by the lowest freq and that's the tip-to-tip length of the top section. Use a dogbone insulator at the center (no need to cut anything, do a wirewrap thing with some 14 ga solid copper (stripped) to secure both legs to the dogbone) then cut a length of 1/4" C-PEX tubing into a dozen or more spacers approximately 1.5 inches in length. C-PEX is a plumbing item easy to find at the handy-guy store. Comes in 5' and 10' lengths and is cheap. Use a tubing cutter to make the spacers. Small-ish black Ty-Raps can be threaded through the C-PEX spacers in a way that makes the vertical wires look like ladder line. Place the spacers about a foot apart.

At the bottom end of the ladder line feeder attach a 1:1 current (choke) style balun, then any length of 50 ohm coax back to the shack. Tune-up is a matter of trimming the feed line until you see a slight rise in the SWR at the bottom of the band. My experience is that the SWR curve is very steep at the low end, delightfully flat mid band, then has a gentle rise toward the upper end. This means you stop cutting as soon as the SWR starts to rise at the lowest freq. CW ops may be tempted to tune an EDZ 10-20 kHz below the bottom, but I'm not suggesting anyone xmit out of band. Even if it is at low power. For a few seconds at a time. (cough)

A 20 meter EDZ carefully pruned can be damn near flat at 1:1 across the entire band, a 10 Meter version tuned at 28.2 MHz will be very usable from 28.3 through 29.3 (your mileage may vary) and at 42.5' tip to tip makes a dandy attic-tenna. Fairly immune to nearby conductors and won't jazz your stereo or phone line -if- you hold the power down to a same level. A 15 meter version is 56' tip to tip (which should fit many attics) and it's OK if the ends droop a bit. I'm no fan of QRO on an indoor antenna... For both health and technical reasons.

When 10 and 15 are open 25-30 watts is more than enough to do some business. 100 watts into an outdoor EDZ is adequate for worldwide coverage and I've worked South Africa a few times with mine... Back when Cycle 23 was having some good days.

- AC5UP

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [WA8MEA](#) on October 6, 2007

[Mail this to a friend!](#)

I use nothing but wire antennas, many of which are my own designs/inventions.

I just spent this horribly hot/humid October 6th day going through and replacing all of the bungee cords I use to support them. (Upper 80's in Michigan in OCTOBER? The horizon was so hazy it looked like mid July!)

I gave up on the pulleys and milk jugs filled with sand YEARS ago. I now use the almighty bungee cord. And I don't skimp on bungees; always buying the best available.

This year, I was very shocked to see how much damage the UV rays of the sun have taken their toll on the bungees I put up in the early spring. Some of the cloth coverings just crumbled in my hands!

Because of last year's ice storms, I decided to "double up" on the bungees in today's job. Instead of using a single bungee to hold up one end of an antenna, I am now using two bungees in parallel to add extra security in case of more Michigan ice/snow this winter. (We were belted three times with ice last year.)

73, Bill - WA8MEA
<http://HamRadioFun.com>
tinytenna@hotmail.com

Wire Antennas: The Good, Bad, and The Ugly:by [NOAH](#) on October 6, 2007[Mail this to a friend!](#)

I have had some good wire antennas. Beverages for example (they count) I also used 1/2 dipoles hanging off a 65 foot tower for a diamond shaped 4-SQR with some great results. My inverted L for 160 meters off my 75 foot tower was a smoker.

That said, I have never found a back yard antenna wire that work for salt except my 6 meter dipole. Height is every thing, right? G5RV's are just not it on a commercial basis.

I typically build my own verticals. But I like this article because it has an author who seems to be well informed on what he is talking about.

RE: Wire Antennas: The Good, Bad, and The Ugly:by [WR8D](#) on October 7, 2007[Mail this to a friend!](#)

After years of experimenting myself i've found a loop works better for me. I have homemade feeders spaced six inches apart made out of number 12 stranded. The feeders are about 150 feet long. The loop is in a triangle configuration and there's about 280 feet of number 12 in it, and the whole triangle is at 40 feet. The antenna is fed in one corner and i have ran it in a verticle configuration too but i just like the horizontal better. Using a centaur 4:1 and a small run of 213 into the shack to differant station setups all with legal limit tuners.

Now guys some hate 450ohm wire and just about any antenna system using it. Myself i love it. That's why i took all that time making my own homemade feeders. I've put up dipoles and windoms and this loop configuration has out talked them all for me. Feeding it this way i get all band except 160 coverage and it really plays. But...everyone does'nt have the room to put these things up so we have to make the best of what we have.

Someone made the comment about a proper antenna does'nt need a tuner. Well i put up antennas cut for individual bands and they had a perfect swr. Those antennas were put up in free space usually around 35-40 feet off the ground and this loop configuration beat the socks off them...

It's design requires a tuner at all times. If i'm not using one of my amplifiers then the built in tuners in my rigs take care of the swr perfectly.

Try one if you have the room, like myself it'll probably be the last wire antenna you ever build and put in the sky.

--... ..-- WR8D

Wire Antennas: The Good, Bad, and The Ugly:by [K8CXM](#) on October 7, 2007[Mail this to a friend!](#)

Bob, I enjoyed reading of your experience with different wire antennas. Thanks for sharing them with us. I also have built, and junked numerous wire antennas, but have a few I regard as being maybe a bit better than others. The key factor on almost any antenna, wire or otherwise, is height above ground, at least if you like to work DX. I do. I sure wish I had 60-70' trees! But, the best I can use are 48' trees, and that's at the very top. They do tend to move a lot with the wind. But we make do with what we have. Foot for foot, the best all around inexpensive, simple wire antenna is still the dipole whether in a flat top or V configuration. But, for DX, get it at least a half wave up. I spent hours with EZNEC modeling different antennas, and it still offers the best bang for the cost of a foot of wire. My other favorite is a simple Delta Loop. I have one on 17M, and while it's not a great pile up buster, it still does a nice job with my 100 watts. I built any number of half squares, mainly for 30M, and have had fair success with them, but find verticals of any sort to be noisy on receive when doing A/B tests with an equally oriented horizontal antenna. But, they do get out as well and in some cases (depending on skip and propagation) much better. I have also built and used G5RV's (big and Jr.), OCF Windoms (ala. Carolina windom design), Zepps, extended double Zepps, end fed Zepps, inverted L's (160 and 80M) and too many dipoles to remember (in multiple orientations) and a variety of wire loops (4 sided and 3 sided). My friends told me I was in the the wire antenna of the week club, sole member. Probably they were right, and I still get the idea to try something else on occasion.

A few thoughts on the good old extended double Zepp(EDZ). I've used one on 30M, 20M and 17M and the one on 20M was indeed a fine antenna (couldn't get the one on 30M up high enough). But I've always had one major complaint: it's extreme narrow beamwidth. You DO get significant gain from it, but at a cost. The energy is focused in a beamwidth of 30-35 degrees if I remember correctly. Great if you install it pointed at a part of the world/US you like to talk, but if you are chasing DX it's tough to rotate those fixed trees. Even 2 at right angles doesn't give you enough coverage. For that reason, I junked a near perfect 20M EDZ and switched for a while to a homemade G5RV. Not the gain, but at least the multiple lobes gave me better coverage. Only wish I could figure out how to rotate one of those EDZs instead! BTW, if you model the much maligned G5RV on 20M, it's easy to see what it is: it IS a collinear not totally unlike an EDZ. The EDZ is much more efficient of course. Like all collinears, they need to be installed in a straight line, either horizontal or vertical or as a sloper, NOT in a V. Best results are horizontal.

These are my own opinions, and I'm sure others have their own opinions. In any case, I STILL enjoy picking up a 100' of #14 from R&L and building a new wire, even though it might not last the week. Still fun to see what happens. Just wish I had some 70' trees.

Regards... Jim ... K8CXM

Wire Antennas: The Good, Bad, and The Ugly:

by [KE4ZHN](#) on October 7, 2007

[Mail this to a friend!](#)

I use a tried and true center fed doublet. This basic antenna dates back to the 1930's. I use 600 ohm open wire feed to minimize losses. It worked well then, it works well now. You cant change the laws of physics.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N4JTE](#) on October 7, 2007

[Mail this to a friend!](#)

Tnx for all the feedback, exactly what I was hoping for, btw, the "Ugly" in the photo that was pictured shows the ice covered wires and masonry string spacers sagging big time, of a 3 element quad experiment last winter, nothing broke, guess antenna nuts like us get lucky sometimes, gotta love that masonry string.

73

Bob

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [WR8D](#) on October 7, 2007

[Mail this to a friend!](#)

Thanks for the really nice thread Bob. They seem to be getting fewer and fewer in number these days.

73, John

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [KC8VWM](#) on October 8, 2007

[Mail this to a friend!](#)

Try one if you have the room, like myself it'll probably be the last wire antenna you ever build and put in the sky.

--... ..-- WR8D

John, we both know there's no such thing as "the last antenna" we will ever build and put into the sky. :)

My Best.

Charles - KC8VWM

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [KT8K](#) on October 8, 2007

[Mail this to a friend!](#)

Trees not high enough? Consider tree fertilizer. It may take a couple of years, but ... they do get taller.

I am moved to try a 40m wire quad-beam, though I am considering hanging the top corners from a rope strung between two trees. At 20' separation I should be able to fit a 3 element ... but I think I will put the relays at the bottom of the loops instead of the tops, as I might be able to reach them with a 10' step ladder if I set things up right.

Nice article, with some good ideas. Thanks & 73 de kt8k - Tim

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [2E0MCA](#) on October 8, 2007

[Mail this to a friend!](#)

Excellent article. After reading, I just wish I had room for an 80M EDZ. Wire antenna's are a great way for beginners to get on the air - or anyone else for that matter.

Currently using a 1/2 G5RV at 25ft with the ends dropped down. Very happy with it because it's just about all I can fit in the garden that covers a lot of bands, (verticals excepted). When you're limited to what you can put up, you have to make the most of it. Just short of DXCC now after two and a half years on the air with a maximum of 50W, so it's not doing too bad!

Don't laugh, I've got 4 Slinky's sitting on the shelf behind me ready for when I get the time to climb in the loft and run that 80M antenna :-)

73 de 2E0MCA

Wire Antennas: The Good, Bad, and The Ugly:

by [W1FBV](#) on October 8, 2007

[Mail this to a friend!](#)

Isn't the length of an EDZ for 20 meters 88 feet, not 65 feet as stated in your article? Nevertheless, thank you for an interesting article.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N4JTE](#) on October 8, 2007

[Mail this to a friend!](#)

Yep 20 meter EDZ is 88ft, did catch this and resubmitted but not in time, tnx for reading it that carefully, hi Bob

Wire Antennas: The Good, Bad, and The Ugly:

by [W4VR](#) on October 8, 2007

[Mail this to a friend!](#)

Bob - excellent article. Most hams know a thing or two about wire antennas but don't realize that you can install a wire beam that works as well as a high gain rotary beam on an expensive tower...as your article clearly demonstrates. But, as you point out, one must be blessed with tall trees and at least 1 acre of land, although in one instance I've been able to shoe-horn in a 4 element 40 meter parasitic array on a lot 80'X200'.

I've been experimenting with wire beams for the past 32 years. I've tried them all, phased arrays, co-linear arrays, parasitic arrays, V-beams, etc., and I keep coming back to the parasitic array for 40 meters and above because they're easy to install and always work as designed on paper. One thing I've discovered over the years is that if you want to maintain good front-to-back with horizontally polarized arrays, you must use baluns at each feedpoint.

It appears you've had good success with the EDZ...so have I. Although I use a slightly different feed method on mine...I feed two separate dipoles (colinearly) with equal lengths of transmissions that terminate into a 2:1 UNUN....this antenna exhibits the same gain and bi-directional pattern as your EDZ. I get excellent results with this antenna on 17 meters from my Maine QTH.

For the 80 and 160 meter bands I've been using inverted-L systems and plenty of ground-mounted radials. These are hard to beat, unless you're able to install a horizontal dipole at 80 feet or more above ground level.

With regard to dipoles and inverted-vees, it's been my experience that horizontal dipoles perform better than inverted vees, unless you can get the ends of the inverted vee very high above ground. You can see the difference on EZNEC.

Corner-fed, vertically-mounted full-wave delta loop antennas are also excellent on 80 meters. It's a very good DX antenna. Sloping dipoles also work fine on 80 but they tend to be slightly directional and require a 100+-foot support. It's pretty hard to find a 100 foot tree most parts of the country.

Phased wire arrays are hard to beat if you're looking for high F/B, but I find that a wire parasitic array can be tuned for 25-30 dB F/B and better forward gain than a phased array, depending on the number of elements of course.

Wire Antennas: The Good, Bad, and The Ugly:

by [KB2DHG](#) on October 9, 2007

[Mail this to a friend!](#)

Your article was well done and a needed information for new comers to the hobby.

One may ask, what is an EDZ or ZEPP antenna so a discription should be listed for those who don't know...

I would like to add one more bit of information and addition to your list.

I am using the famed G5RV in an inverted V configuration.

As compaired to a lot of antennas this antenna has given me the best of all worlds with little diffaculty. NO, it is not gang buster as was my dedicated 40 and 80 meter dipoles and my 3 element beam for 10,15 & 20meters, BUT being that I am now in a restricted apartment The one antenna if you have only one antenna to use is the G5RV.

Don't even think about using it without a tuner BUT with 100 watts on a good day I have worked great DX,

On normal conditions it is fair to say the best. In short a G5RV can get you some results as a multi band antenna. Grounding and height is the key elements to good antenna performance.

Thank you, DE Lou, KB2DHG

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [KC8VWM](#) on October 9, 2007

[Mail this to a friend!](#)

It isn't the physical length of one's antenna that matters, It's the length of one's enjoyment along the way. - Charles KC8VWM

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [W9HQ](#) on October 9, 2007

[Mail this to a friend!](#)

This is a great, positive thread. Great job everybody.

I now live rurally, so I'm very keen on putting up a bunch of wire antennas. Currently I have an OCFD cut for 80 meters that performs very well as a multi-band antenna. My next will probably be an inverted-L for 160 meters. Ultimately I'd like to do a full-wave horizontal loop for 160--I just keep hearing great things about that configuration.

73,

David

Wire Antennas: The Good, Bad, and The Ugly:

by [K1GUN](#) on October 9, 2007

[Mail this to a friend!](#)

Pardon my ignorance buy wat is a EDZ???

Wire Antennas: The Good, Bad, and The Ugly:by [K1GUN](#) on October 9, 2007[Mail this to a friend!](#)

Pardon my ignorance buy wat is a EDZ???

RE: Wire Antennas: The Good, Bad, and The Ugly:by [K8CXM](#) on October 9, 2007[Mail this to a friend!](#)

Extended Double Zepp, or EDZ as used here for short.

RE: Wire Antennas: The Good, Bad, and The Ugly:by [KC8VWM](#) on October 9, 2007[Mail this to a friend!](#)

EDZ means Extra Directional Zenith.

This was a special antenna used for older TV sets.

Hope that helps.

73 de Charles - KC8VWM

Wire Antennas: The Good, Bad, and The Ugly:by [KI4TZX](#) on October 10, 2007[Mail this to a friend!](#)

As a newbie I want to thank you for sharing information.I have a vertical and a beam that work great but have more fun experimenting with wire antennas. Working DX into Europe on something I built is more of a thrill. Thanks again

Wire Antennas: The Good, Bad, and The Ugly:by [K8VF](#) on October 10, 2007[Mail this to a friend!](#)

Great Post and comments!

Here is a quickie for those whom happen to be running a "carolina windom(OCF dipole) 160 Special. Should work with Carolina windom 80 also. Should work on a regular dipole, too.

They are 132 feet long and mine was stretched between 2 trees. I happened to notice a third tree midway between those two about 75 feet away.

Added 123 feet of wire to the dipole, soldered at each end. Hooked an insulator to the middle of the additional wire and VOILA! Instant delta horizontal loop. This cloudburner is quiet, flat from 3.6 to 3.98 Mhz, and you could do this with your dipole, too.

It is good enough that I have not chosen to go back to the old way.

Let me also say that I have 3 of the CW antennas and have been very happy with them. Solid, strong, 100% no problems ever in 10 years.

I use them as a starting point.

Added some wire to one end of a CW 160 antenna (short end) and got full 40 meter band coverage, full 12 meter coverage, and 28.300-29.000 coverage without a tuner.....(essentially you are moving the feedpoint)
Plus with the added 15 feet or so of wire, my tuner settings on 160 meters are good for 1.8 to 1.88 mhz without touching the tuner...Nice on those contest weekends. Trimming is required and YMMV!

YES, the patterns will be changed. But I can live with that and my rig is very happy. And NO it is not a dummy load in the air.

If you have one of these or a dipole, give it a shot!

Wire Antennas: The Good, Bad, and The Ugly:by [N6VL](#) on October 11, 2007[Mail this to a friend!](#)

Nice article Bob!

I've had the materials to start on a basic Hex Beam for over a year now. I held back because of my love for simple wire antennas.

I've settled on two wire antennas:

The first antenna is a delta loop, 225 feet in circumference, and sloping in a diagonal plane. It is 40 feet at the apex and about 6 feet on the lower corners. It is resonant just above 75 meters at 4.4 MHz, so it works well on 80/75. I feed it with open wire line in the lower corner. That is where EZNEC says the lower angle of radiation occurs on 80 and 40. The downside is the assymetrical

placement of the balanced feed. I have to route the feedline back to the shack inside the loop. It probably is not that balanced. My lot won't even accommodate an 80 meter dipole. This shows with a little research, you can still get a good signal out of 80 without a full length antenna. Another 50 feet of wire in my loop, or about 17 feet per leg, would make my delta loop full sized on 80. There is very little handicap in my case.

The second antenna is a 44 foot long dipole, as shown on the Cebik web site at <http://www.cebik.com/gup/gup34.html>. My loop didn't have the best performance on the higher HF bands, so I tried the diople instead. It is two 5/8 waves in phase at 10 meters, and slightly short for 30 meters by a couple feet. Mine is in an inverted vee configuration, about 60 degrees, and about 30 feet at the apex. This is my antenna of choice for 30 to 10 meters. It will also work on 40 meters, but the height is too low. The loop is much better on 40.

I'd like to find a single antenna for all the HF bands. But it better to use a single antenna over one octave. I don't have much room on my lot, so I can't put up too many wire antennas.

Another bonus of wire antennas, it that the neighbors will like it better than a tower and a large beam. I got enough strange looks with wire antennas. I couldn't imagine the response with a beam. It also keeps me from applying for a tower permit with the city.

73,

Steve N6VL

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N6HPX](#) on October 11, 2007

[Mail this to a friend!](#)

I have always ran nothing but dipoles like the G5RV's and also the Bazooka's as I can't afford to install a directional yagi in my area..most of my antennas have worked good for me from my QTH in Manila and have worked both the eastern and western United States on all band except 40,80,160 as these bands are off in conditions when I am home<6 months away from home stinks>. In fact my G5RV which was built by antenna west a 55 ft. worked good for me where I managed to talk to Malaysia on 6meters. The other G5RV is 102ft in lenght and my 2 others were installed in July and they worked good.

My area I have strong typhoons that hit at more than a 100 to 180 in winds and they are the only antennas that have held up. All my other ham friends take there antennas down. So wires for me are the best way to go.

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N5JYK](#) on October 13, 2007

[Mail this to a friend!](#)

Great thought provoking article Bob! Thank you!!

I just wanted to mention something about horizontal loops on the low bands....

Those of you who have an interest in working local stations on the low bands for RACES or rag chew, specifically on 80/75 and 40, string up an approximate full wave for 80m (260-270ft) as symmetrical as you can, and hang it between 8 and 12 feet (no higher) off the ground. Feed it with ladder (less noise) or coax (more convenient) and a transmatch (tuner), add a little power (500w), and you will cover your local area (out to 350-500 miles max) well. >>length of loop isn't critical and neither is the length of feedline or location of feedline<<

Of course this antenna isn't meant for HF dx and shouldn't even be considered for HF dx. (You might get some 6m dx out of this antenna but not regularly and that topic deserves its own article anyway.)

73

Brandon N5JYK

RE: Wire Antennas: The Good, Bad, and The Ugly:

by [N2XE](#) on October 14, 2007

[Mail this to a friend!](#)

"CAVEAT: All antenna evaluations are purely subjective and as we all know, to the ham loading up a slinky in his attic a full size dipole will be nirvana."

All? I do this for a living and my customers aren't in the habbit of forking over huge sums of money of purely subjective analysis ;-)

Different antennas suit different applications and the constraints of time, money, space and propagation. That said, I'm partial to wire antennas! Great article Bob -- thanks!

Wire Antennas: The Good, Bad, and The Ugly:

by [SM5JAB](#) on October 23, 2007

[Mail this to a friend!](#)

For once a balanced account of what to expect from some antenna types! A very nice posting! There is otherwise so much hype out there.

While I haven't been in the EDZ-trenches I have made several wire antennas over the years and can only second the opinion on the 2 el quad. Several experiments have been performed (www.isy.liu.se/~mj/HAM/ANT) and with a trimmable reflector the quad is a really nice antenna. When it comes to directional antennas then the G0GSF-beam also very good in my opinion, as wire antennas go. My "basic ever-there" antennas are a vertical half-wave dipole cut for 15 meters and a 40 meter half-square. Nothing beats the half-square in terms of simplicity/performance (unless one has tall trees nearby...).

I found that collinear dipoles were too narrow to be fun. As I don't exactly want a point-to-point QSO but rather look in a general direction I have come to my conclusion that my antennas need to be fairly broadlobed.

I would really like to test the 2 el vertical broadside/endfire combo you mention! Oh, well, there is a 2009 for that I hope...

/Micke