The Black Hole

Official Journal of The Society of Midwest Contesters

Volume XVII Issue VII *September 2009*

Adventures in SO2R Land - Part 7

By Bill Axelrod ND9E

Prolog. So there I was, the next Saturday morning, sitting in front of my computer, making lists and ordering antennas, cable, and parts. Parts simply aren't just parts. An antenna farm needs all kinds of parts.

With a garage full of cable and parts, a workshop full of tools, and plans in hand I was ready to get cranking. But I forget a critical essential ingredient – the weather. The central Illinois snow and ice kept me indoors for a few months. Did I mention that I really don't like cold weather? Or digging in the frozen ground? But I did get a lot of quality time on a set of poor bands eking out some DX while missing out on great 160 meter conditions. I needed KP5 on 160 when the K5D guys were there. Decided that if a beverage on the ground (BOG) worked for some people, why not try a dipole on the ground (DOG)? So using some of the parts laying in my garage, I put a 160 meter dipole on the ground. And worked K5D! Couldn't work much of anyone else but it did the job. Do you believe in miracles?

Then we finally had a thaw in March. Added another 16 radials to my 43' vertical which helped a lot. First antenna up was my phased verticals for 40 meters. I used a trap so they would also resonate on 30 meters. And despite the phasing for 40 meters they had gain and a good front to back ratio on both 40 and 30 meters. This antenna worked well from the get go. My first QSO with it was working the VK9 on Mellish Island long path with a HUGE pile up easily. Great start. This antenna worked well from the get

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Rock the QSO Parties

In an effort to increase SMC activity, we're encouraging everyone to actively participate in state QSO parties in 2009. Let's make a concerted effort to rock the state QSO parties.

Colorado QP	12Z, Sep 5 to 04Z, Sep 6
Tennessee QP	18Z, Sep 13 to 03Z, Sep 14
Arkansas QSO Party	14Z, Sep 12 to 06Z, Sep 13 and 15Z-24Z, Sep 13
Washington State Salmon Run	16Z, Sep 19 to 07Z, Sep 20 and 16Z-24Z, Sep 20
South Carolina QSO Party	13Z, Sep 19 to 21Z, Sep 20
Texas QP	14Z, Sep 26 to 02Z, Sep 27 and 14Z-20Z, Sep 27

How to Get On 40 In 10 yrs

By Brad Anbro , N9EN

My 10 year long off & on (mostly off!) project of building a copy of a Telrex 40M346 3-element 40 meter monoband yagi is now finished and installed at the top of my 130' high guyed Rohn 55G tower.

The 40M346 was Telrex's 3-element 40 meter monoband yagi with 3 full-length elements on a 46' long boom. I got the idea of building a copy of it after I had helped a local ham (Wes, W9UO - now W7UO in Arivaca, AZ) take his 40M346 down, along with a bunch of other Telrex yagis that he had up. He was retiring and moving from IL to AZ.

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The Black Hole is published monthly, September through June, by The Society of Midwest Contesters. Permission for use of the materials is hereby granted on the sole condition that credit is given to the source of those materials.

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Membership in **The Society of Midwest Contesters** is open to all persons with a bona-fied interest in amateur radio contesting. For more information contact one of the following officers:

SMC Dues

Dues are $10 a year, but may be waived based on the fulfillment of participation requirements:

In the SMC SS circle: Make 100 total Sweepstakes QSOs over the two weekends and submit your score(s) for "Society of Midwest Contesters." In addition, submit one other score for an SMC club competition in one of the following contests: ARRL VHF, 160m, or 10m, NAQP, CQWW, ARRL DX , etc.

Outside of the SMC SS circle: Submit two scores per year for SMC club or team competition in any of the six NAQPS and four Sprints.

Qualifying scores are those submitted during the calendar year prior to January 1.

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1. Send a check, money order, or cash to:

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2. Use Paypal and email your donation to dues@w9smc.com.

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Shirts

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go. I couldn't wait to see how it would do in a contest.

As the weather got cold again I got started on my tower and beam. Built the roof-top tower in the garage. Lots of wrenching. Actually 196 nuts and bolts, but who's counting? Put the three element SteppIR together. Next break in the weather which was in early May, along came a great big bucket truck. By evening I had the beam up and operating. Yee Haw! This antenna worked well from the get go. I couldn't wait to see how it would do in a contest.

Now I had decent gain antennas for 40 through 10 meters.

Time for more parts and planning. Next up were the 160 and 80 meter transmit antennas and beverages. And waiting for the CW WPX contest to work out the bugs in my evolving SO2R station.

No plan ever survives contact with the real world. Especially mine. After some somewhat gentle nudges from friends, the 6 meter bug bit. For all my years on the air I have studiously avoided VHF hamming. That may be a flashback to my early electronic technician days when I was responsible for a lifetime supply of really crappy VHF radios on mine sweeping boats in Viet Nam. Or not. But I now realized that I had an antenna for 6 meters (my SteppIR 3 element) and an amplifier that did 6 meters (my Yaesu VL1000 Quadra). Only missing a radio. That was an easy fix. So, with a used radio and my existing other stuff, there I was, 6 metering away instead of building antennas. And still waiting for the next big contest. And did I mention loosing time while not putting up antennas?

Preview… So there I was, Friday evening, all charged up, butt in the chair, waiting for the CW WPX contest to start…..

73 and GL… Bill ND9E

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I was so impressed with the construction & over-all condition of his antenna after it had been up for over 10 years -- comparing it to my KLM 40M-4 that I had up for only a couple of years and it was already showing its age.

I copied every dimension on Wes' Telrex 40 meter yagi exactly as the original. After we had got his antenna on the ground, I made drawings of the antenna with notes on every possible dimension that would be needed to copy the design & build another one.

The only differences between my antenna and Wes' original antenna are a couple of physical modifications that I made to the antenna to make it more rugged. The original antenna used 3" O.D. x 0.090" wall aluminum tubing for the boom extension pieces; I used 3" O.D. x 0.125" wall tubing so it would be more rigid.

The 22' long middle piece of Wes' boom was 3-1/2" O.D. with an inside dimension that was slightly less than 3" I.D. - to allow for tubing with 3" O.D. to fit into it. Telrex must have had that tubing made up for them because it was not a stock mill size. I used 3-1/2" O.D. tubing with a 0.250" wall and because of that, had to hone out the I.D. of each end to allow for the 3" O.D. pieces to fit into each end. That took a LOT of time, using a cylinder hone and an electric drill, doing it by hand.

The only other physical modification that I made to the antenna was the addition of overhead guys for the three 65' long elements. I used 3/16" ultraviolet-stabilized non-stretch braided dacron rope (black in color). I provided supports for the guys that were 12" above the boom and the element half-sections were guyed at a point about 22 feet from the boom.

Forged, galvanized 1/4" turnbuckles were used and were tightened up only to the point of taking out most of the sag in the elements. I also used 1/16" dia. galvanized steel "aircraft cable" as safety wires that went through the turnbuckles so that they could not loosen up.

I assembled the antenna as last winter was ending; I wanted to allow the physical connections of the elements to "temperature-cycle" so I could re-tighten all of the connections a few times. There was one other thing that I did differently with my antenna. The original one used #10 stainless steel hardware to connect the element pieces together; I used double all-stainless steel hose clamps at each connection.

As I was assembling the antenna, I weighed each piece of aluminum and all of the hardware & fasteners. The total weight of the antenna is around 215 pounds, plus or minus a couple of pounds. I probably forgot to weigh a few of the many pieces but the 215 pound figure is pretty close to the total over-all weight of the assembly.

Raising the antenna to the top of my 130' high guyed Rohn 55G tower went smoothly; I used my usual method of unfastening 2 of the 3 guy wires at a guy level and raising it above that point, then re-fastening the guy wires before unfastening 2 guy wires at the next level.

The tower is guyed at 3 levels so that process had to be repeated 3 times. I made sure that we did the hoisting on calm days. My wife drove the pick-up truck, which was used to supply the power for pulling that antenna up. I didn't want to use my garden tractor, as I usually do. I was afraid of the tractor losing traction, because of the antenna being unusually heavy.

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I was originally going to use a 5' long heavy-duty home made steel gin pole with a 3/16" diameter galvanized steel cable to do the lifting but one of my other towers was damaged by a windstorm (a tree trunk fell on one of the lower guy wires for that tower) and I wanted to use the gin pole clamping device on that tower.

So I used a 1/2" dia. solid braided nylon rope with a 1800 pound-rated sheave at one of the top corners of the tower, along with a heavy-duty pulley sheave on the corresponding leg of the tower at the base - so the rope could pull straight out from the tower.

The lifting went in 3 "stages" - the first lift was to just above the 2nd (middle) set of guy wires - the 85' level. I fastened the antenna to the tower after that and a few days later, we raised it to just above the top set of guy wires, again fastening the antenna to the tower at about the 124' level.

A few days after that, I went up the tower (by myself) and hoisted the antenna up to the mast, using a 1500 pound-rated worm gear hand-operated hoist that was fastened to the mast. The hand winch was very slow going but it did the job just fine; the antenna is now fastened to the mast and the boom support cables have been tensioned, too. (Pictures on page 5).

I don't know what Telrex used for aluminum alloys for their antennas; I used 6061-T6 alloy for the elements and 6061-T6511 for the boom pieces. Most of the mfrs now use 6063-T832 alloy for their antennas but the 6061 is a slightly stronger alloy and stands up to the elements much better than the 6063 alloy.

73 de Brad, N9EN @ Radio Free Roscoe (IL)

FD 2009 KJ9D with N9NS at the keyboard

INQP 2009 Results

http://www.hdxcc.org/inqp/scores.php

N9FN/K9FN's INQP portable operation on the Tippecanoe/Warren County line.

N9EN's 40 mtr Beam

3 full-size elements on a 46' boom @ 130'

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by NV5A

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