WEST SIDE SIGNAL

Official Bulletin of Toronto's Oldest Amateur Radio Club

Issue No.152 Sep 2012

Club Executive

President
Dave Karecki VE3SB
1043 Royal York Rd Toronto On M8X 2G5
(416) 234 1456
e-mail karecki[at]acanac[dot]net

Vice President
Bert Almemo VE3NR
54 Rodda Blvd Scarborough On M1E 2Z8
(416) 283 4444
balmemo@sympatico.ca

Treasurer
Mike Durrant VE3PNX
10 Crane Ave Etobivoke On M9P 1T9
(416) 241 6017
e-mail mdurrant@ArcturusNetworks.com

Secretary
Bill Catlender VE3PA
2 Norwalk St Scarborough On M1J 2V1
(416) 439 2891
bill.catlender@sympatico.ca

Signal Editor
Dave Lott VE3BHZ
51 Lincoln Ave Cambridge On N1R 4W6
(519) 621 4396
e-mail david.lott@sympatico.ca

Custodian VE3JJ
Dave Karecki VE3SB
1043 Royal York Rd Toronto On M8X 2G5
(416) 234 1456
e-mail karecki[at]acanac[dot]net

Club Historian
Position vacant

Meetings

Meetings held at 7:30pm on the third Tuesday of each month , at the home of David VE3SB 1043 Royal York Rd between Bloor and Dundas at Kingsgrove Ave. No meetings in July or August. Visitors always welcome.

Club Nets

FM Net
Wednesday 8:00pm
VE3SKY repeater 146.985 Mhz

CW Net
Sunday 10:00am 3.567 Mhz

SSB Net
Sunday 11:00am 7.075 Mhz

Next Meeting

The Karecki Residence
1043 Royal York Rd at Kingsgrove
Etobicoke
Tue Sep 18th 2012
Tue Oct 16th 2012
Tue Nov 20th 2012

CLUB NEWS

Only Bert VE3NR and Bill VE3PA showed up at the meeting. We discussed how we should celebrate the club's 75th anniversary in 2013. A daytime lunch/brunch was suggested maybe at The Old Mill restaurant. A few of us still have day jobs so we will have to decide on a place and day etc. David VE3SB showed Bert a few antenna calculations for a 2 element quad compared to a 3 element Yagi using the freeware antenna modeling program 4NEC2. David's dipole is still down, so with only a vertical the Sunday 80m net is not working as well. David could hear Bill 579 last Sunday but nil in the other direction. No one had any firm plans for Field Day. David has some family issues this year keeping him from going to MI as he did last year. Regarding the Sunday morning 80m net, I have been unable to copy anything from Toronto or Scarborough for a few weeks now, noise level has for some reason been very high which is unusual for this location. Of course all the HF bands have been lousy for a while and for the Field Day weekend solar figures were as low as I've ever seen them. We didn't make a single contact on 10m and 15m was very quiet until Sat evening and again on Sun. We made 950 QSOs from VE3SWA, 639 on CW, 254 SSB and 57 Digital. Our total score was a little more than last year which surprised me considering the conditions. This Sunday (July15th) we tried the net on 40 meters again but it was unsuccessful, I didn't hear a peep from Toronto or Scarborough so it's back to 80 again and wait for conditions to favour the Cambridge/Toronto path once again. I find it most annoying having no radio contact with club members

DIVIDE AND CONQUER

VA3CBE

Divide and conquer, great military strategy but this article will show how a simple voltage divider circuit will protect test equipment from an invasion of electrons hell bent on overloading components.

Every problem has a solution, and this is no exception. Remember the soundcard oscilloscope program? Great software but the soundcard can be damaged if too much voltage is applied to it. The circuit to be tested was 120 volts ac, 60hz, my intent was to view the output waveform and harmonics from our portable gasoline generator. The problem was that 120 volts is obviously more than the 0.4volt maximum the sound card will allow. To find a solution we can turn to ohms law for help.

Remember ohms law, and how resistors in a series circuit react? If not perhaps a refresher course would be in order. Ok here is the deal, after you read this read the ARRL chapter on "electrical laws and circuits" great reading if your having trouble sleeping HI!

Referring to figure 1 we can see two resistors in series powered by the battery on the left. The current is the same in both of the resistors but the voltage drop between the two is proportional to the resistors value measured in ohms. Using ohms law we can calculate the voltage drop across each resistor.

Now for the math part, lets say the battery is 120volts, R1=330K ohms, R2=1K ohm, total resistance in a series circuit is R1+R2 so therefore R1+R2=331K ohms.

$$I(\text{ampres}) = \frac{E(\text{volts})}{R(\text{ohms})} = \frac{120}{331} = 0.362\text{amps}$$

Now that we have established that there is 0.362 amps of current flow at 120 volts we can determine the voltage drop across each resistor

E(volts) = I(ampres) X R(ohms)

R1 volt drop 0.362amps X 330K ohms =119.46 volts

R2 volt drop 0.362amps X 1K ohm = .362 volts

The voltage at R2 is below the 0.4 volt maximum the soundcard can handle so it is safe to connect the soundcard oscilloscope at the point in fig1 labeled "output"

Your are probably thinking that 119.46 volts plus .362 volts does not equal the original value of 120 volts, well it does not due to the fact that the figures were only calculated to a couple of decimal spaces, being a ham is not an exact science. Close is ok.

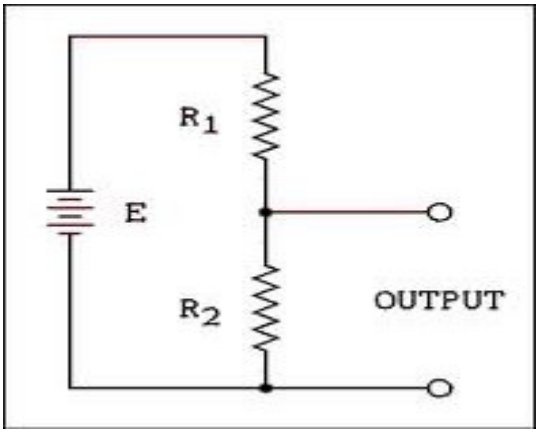

Fig 1

Do the resistors have to be 330k and 1k? Not at all, they were just the first two I picked out of my junk box that were a close enough match for the circuit I needed.

73 de VA3CBE

The Amazing Disappearing Antenna

A short story by Don Keith, N4KC

They were an easy-going group. Most were longtime friends, some went to high school or college together, others became acquaintances when they first took the test for their amateur radio license and joined the exalted fraternity of hamdom. Some were newcomers, teenagers, young adults, even a few husband/wife teams. Some newcomers were gray-haired, too. All of them shared one common bond. They were deeply involved in the hobby of ham radio and thoroughly enjoyed being with others who were members of the same tribe.

The brotherhood and sisterhood of the spark!

The group met once a month—on a Tuesday night—in a room at the downtown YMCA for their club meeting. They usually began with a warm-up session while everyone gathered and bragged about the DX they had worked or how great their newly-constructed QRP transceiver was working. There was some horse-trading, too. That was followed by a short business discussion, and then a program, delivered by a member or a guest, always on topics that might be of interest to the group, old-timers and newcomers alike.

As with all assemblies of human beings, there were those occasional moments when things got testy, when politics sparked a tiff or whoever was delivering the night's program made claims that were disputed by someone in the audience who had a different opinion. But it always ended amiably with a motion to adjourn for a cup of coffee and a doughnut at Krispy Kreme and more chatter, bragging and horse-trading.

Joe Wynn, WB4CDB, was delivering the program one night. His subject was some kind of cobbled-together antenna he had conceived and then modeled on his computer, using the latest software. He had then erected and tested the monstrosity. It consisted of an odd amalgam of copper wire, coax cable, snippets of 300-ohm television twin-lead, a strange circuit at its middle with capacitors and coils soldered together, and a bunch of rope to string it up from tree limb to tree limb. Antennas were always hot topics at the club meetings. There was an abundance of opinions about what worked best and what did not. Most agreed that a hundred watts of power output was basically the same, regardless the kind of radio that was generating it. But it was the antenna and the feed line that led to it that took those watts, converted them into magnetic energy, and threw it off into space to reverberate off the ionosphere. The more efficiently it did this beautiful trick of physics, the better. The more efficiently an antenna worked, the more successful an amateur radio operator would be in communicating with others of a similar ilk around the state, the country or the world. There was no argument there. But the more Joe talked about this odd, ugly duckling of a radiator, the more complicated and obtuse his drawings on the white board became. And the more he pontificated about how great it worked, the more some members of the club frowned, snorted, and exchanged quick glances with each other.

"Now when I first looked at the computer model and saw the specs on this aerial, I was amazed," Joe proudly claimed. If he noticed the doubting looks on some faces out there in the group, he ignored them. "SWR below two-to-one across the 40-, 30-, 20-, 17- and 15-meter bands without having to tune it. A very fat lobe that radiates in practically all directions. And a gain over a dipole of 6 dB. And the thing is only 50 feet long in its entirety. I have been using it for a month now and it is by far the best performing antenna I have ever seen. Anybody have any questions?"

John Carlson—a local broadcast engineer and easily one of the more technically competent among the club members—raised his hand.

"Joe, that's a mighty fine explanation, but that all looks like a mess to me." John was always cordial but he also tended to cut to the chase when he had an opinion on something. "If it really does as well as you say, you must have just gotten lucky. I don't see any way that can work."

"Yeah, I can see the SWR being low," Roger Schwartz chimed in. He was the acknowledged "antenna

“Seems to me to be way complicated, too,” Jack Mainerd jumped in. Jack’s antenna farm—which actually grew from the black dirt at his spacious farm south of town—was the stuff of dreams for most of the hams in the bunch. “You could just put up a 65-foot dipole, feed it with ladder line, and hit all those bands just fine without the weight, the parts, and all that precise measuring.”

Joe Wynn took the comments in stride. He simply rocked back on his heels, grinned, and folded his arms across his chest.

“All I know is it works. I’ve got the contacts and the signal reports in the log book to back it up. You’d need a couple of trees in the right place for your dipole antenna, Jack. And figure a way to snake the ladder line around gutters, cables, wire and stuff to get it inside. Then you have to use an antenna tuner—and you all know how I feel about antenna tuners—to get a match on all of those bands. And you would still have a figure-eight pattern with some really nasty nulls and no gain at all. The same as a dipole because it would be…well…a dipole!”

“Heck, Joe, you can make contacts using a ten-penny nail for an antenna if…” Roger started, but just then, Bob Marx, the club president stood up and interrupted before things went sour.

“Well, Joe, thank you for another interesting program,” he said with a smile. “You always bring us a project that will make us think. It’s past nine already and some of us have to go to work tomorrow to earn money to support our hobby. Let’s give Joe Wynn a round of applause.”

Everyone did, including the three men who had challenged Joe’s weird antenna experiment. It was true. Those members who were good enough to volunteer to conduct a program were always appreciated. And it was also true that WB4CDB always came up with things that…well…made them think. And shake their heads.

There was the transmitter he built from an old television set that dimmed the lights when he transmitted and emitted a signal that sounded more like an elephant burping. The Morse code “translator” that was supposed to take the characters through a microphone set up next to a speaker and convert them into letters that were displayed on an old Atari game console. Only problem was, it could not tell a dash from a dot, a rather fundamental flaw for such a device. But mixed in were some occasionally usable and practical items, too, and, as Bob Marx noted, it made everyone in attendance think, and thinking inevitably led to learning.

This night, the discussion of what Joe had dubbed his “flotsam and jetsam antenna”—he noted that you could just take the flotsam and jetsam from your junk box and build it—continued over the hot coffee and the sweet pastries at the doughnut shop. John, Roger and Jack all continued to challenge, in a friendly enough way, the theory, complexity, and claimed results of the antenna. And Joe stuck to his guns. “Best antenna in my arsenal right now, and I’ve got one of about everything growing out there,” he maintained. As they headed for their cars, the three questioners told Joe and the others goodnight, but they huddled at Jack’s car for a few minutes before they all loaded up and headed home. Nobody noticed the sudden burst of laughter just before they climbed into their vehicles and went their separate ways.

Two nights later, Joe Wynn was goofing around in his shack, working on some project he had discovered in an old ARRL Amateur Radio Handbook from the 1950s. There was a “ding” on the computer indicating someone had “spotted” a DX station. The station was on some tiny island in the South Pacific and when Joe tuned him, his signal on 40 meter CW was marginally readable, though not nearly as strong as the reporter who had spotted him indicated. Rubbing his hands together in anticipation, Joe waited impatiently for the old tubes in his amplifier to warm up. He clicked the rotary antenna switch around to make sure he had selected the spot on the dial where the plastic label indicated that his super-duper “flotsam and jetsam antenna” was hooked up. Then he hit the button on his transceiver to send power to the amp so he could quickly tune it up. There was a brief hiss and just the slightest hint of a spark from somewhere inside the cage that housed the amplifier’s innards. “That’s odd,” Joe muttered,

but he quickly twisted the dials until the arcing ceased. Still, the loading was not nearly as smooth as it typically was.

There were surprisingly few other stations calling the distant one, but it took Joe a good half hour to finally get a response from him, even though the DX station called "CQ" several times but did not seem to hear WB4CDB when he responded. Joe simply chalked it up to poor-but-just-good-enough propagation as he proudly logged the new country and placed a pin in the map on the wall to formally mark the accomplishment. If it was easy, every ham out there would have confirmations from every country on the planet.

The next night, Joe had a 40-meter schedule on single-sideband with an old friend halfway across the country. They usually had no trouble carrying on a conversation, but this night, his friend could hardly hear him and finally lost him altogether. And the amplifier had been even balkier in tuning up, too. Now Joe was curious. He disconnected the amp from the AC power and carefully lifted the lid and looked inside. Everything looked all right. No smoke. No sign of the tell-tale black carbon streak that would have indicated arcing damage. He scratched his chin, considered the possibilities, and finally decided to sleep on it. A new DXpedition was set to be on the air starting the next weekend. They would be operating from a tiny coral reef in the middle of the Dangerous Grounds off Malaysia. It would not take long to see if he had some component going on the fritz. In fact, in Joe's estimation, the easiest way to trouble-shoot a problem was to keep using it until "it released smoke" or made enough noise to easily locate it in the midst of whatever might remain.

It had not occurred to Joe Wynn to check his whiz-bang, Rube Goldberg antenna that stretched across the backyard.

The same antenna that John, Roger and Jack—his buddies from the ham club—had been whittling down a few feet or so each evening ever since the night after the meeting!

After they were certain Joe had turned in for the night, the three men crept into Joe's backyard each evening, untied the rope supports from the trees at each end, and lowered the aerial to where they could reach it. Then they took the wire loose from the end insulators, measured precisely with John's pocket tape measure, folded it back on itself, and carefully twisted it so it would be secure. And they did the same thing on the other end. That effectively shortened it each evening by about four feet on each end without really doing any lasting damage to it. They could always let it back out to its original length after putting Joe in his place and showing him the error of his ways. The men knew Joe's old watchdog, Sparky, was too deaf to hear them and too lazy to alert his master even if he did. They figured the minimal change each night to the antenna would hardly be enough to be noticed. But then, suddenly, Joe would realize that his wonderful concoction of a radiator was not so great after all. After the fifth night of antenna modification, John Carlson could not resist it any longer. There had been no word whatsoever from Joe Wynn about any issues with the antenna of which he was so proud. Then John heard him on his morning commute, talking to another station on the club's two-meter repeater. John stifled a yawn—the late-night shortening operation was cutting into his sack time—and broke into the QSO at the first opportunity. "Mornin', Joe and Mel. How you fellows doing? Joe, what's the latest on your 'flotsam and jetsam' antenna?" John asked.

"Even better than I thought!" Joe responded enthusiastically. "I worked a QRP station in Slovenia last night on 17 and then got three more good ones on PSK31 on 20." John frowned as he eased to a stop at a traffic light. Had old Joe not yet realized that his miracle antenna was working even worse than before? Or was he just too stubborn to admit his antenna did not work before and was a total failure now. John had an idea. It was time to press the point. Heck, a few more nights and there would be no "flotsam and jetsam antenna" left to trim! "Hey, that's great. Do you mind if some of us drop by and see her in action this weekend?" "Not at all," Joe Wynn responded immediately. "I'll be home Saturday, trying to work that DXpedition out in Malaysia."

John grinned broadly, ignoring the lady in the car next to him as she gave him an odd look. “Perfect. We’ll probably stop in mid-afternoon.”John could not wait to tell the others about his chat with Joe and how the guy was so sure his antenna was something special that he was blocking out completely its worsening performance. Just to be sure, the three of them made one more late-night stopover in Joe’s backyard on Friday night, but this time, they took a good ten feet off the antenna’s length. That only left a few feet of wire either side of the monstrosity Joe had hacked together at its center. Unless that bunch out in the Indian Ocean was using the world’s highest-gain receiving antenna and some kind of spectacular noise-reduction gear, there would be no way Joe could ever work them.

Truth was, Roger, Jack and John were beginning to feel a tad bit guilty about the dirty trick they were playing on their friend. Even if they did all agree that he deserved it for being so haughty about his physics-defying antenna. To atone, they stopped and got a bucket of chicken wings and some cold beers on the way over to Joe’s place on Saturday afternoon. Joe’s wife showed them into the shack in a corner of the garage where Joe was already busy at the radio, tuning in the distant station and setting the proper split between his listening and transmitting frequency. The three visitors could hear the bedlam of chirps and cheeps from all the hams around the world who were desperately calling the rare operation way out there on the other side of the planet. It was a mess. What little power Joe’s miscreation of an antenna might spit out would be lost amid all that mob of stations trying to get the rare contact on the operation’s first weekend. “How’s propagation?” Roger asked Joe. “Not the best,” Wynn replied. “Solar flux is only about 95. I can hear him, though. I think he’s coming up some.” The men suppressed grins. Sure he could. With that diminished shrimp of an antenna? Not a chance. Not on 20 meters in the middle of the afternoon, even if they were on CW. Joe punched a button on the front of his radio.

“Back to his frequency,” he announced. “I can see a few holes in the pile-up on the spectrum scope so I’ll call him on one of those frequencies.”

With the chicken wings spread out on the corner of the operating desk and with each of the hams enjoying the cold beer, they each listened to the frequency where the faraway station was supposed to be transmitting. There was nothing. Nothing but the hiss of atmospheric noise. Jack Mainerd dropped a chicken bone in the trash can, turned his head sideways, and said, “Joe, I don’t hear him. You sure you are on his frequency. There are lots of stateside guys calling him so I figure we would at least be able to…” But just then, there was the sound of rapid Morse as the rare station’s operator sent, “N4KC, 599,” and then, three seconds later, “R, TU, UP.” (The DX station has just acknowledged hearing the call from station N4KC and gave him a signal report, then confirmed he heard a report from the calling station, said, “Thank you,” and indicated that he was listening for calls up a few kilohertz in frequency.)

All three doubters looked at each other. The station was actually quite strong. Stronger than he had been at any of their houses an hour before. Propagation must have improved since then. He had to be booming in for Joe to hear him that strong on his junk antenna. Roger Schwartz glanced at the labels on Joe’s antenna switch. Sure enough, it was on the position that said “Flotsam/jetsam.” Wynn was already busy pounding out his call sign on his ancient J-38 straight key. Joe did not believe in computerized CW keying or using his radio’s CW memory to save info that could be transmitted merely by hitting a button or keyboard key. True CW operators did it the old-fashioned way, with an arm-numbing straight key. The DX operator answered another station, a W6. Then three Japanese stations in a row. Jack, Roger and John settled back in their chairs, sure that Joe could call all day and all night but would never be heard. Not with all his RF power likely eaten up in heat in the mess of an aerial he was using. They had already decided to let him try long enough to make their point about the ineffectiveness of his homebrew antenna and then gently let him off the hook with an explanation of what they had been doing.

“Anybody ready for another beer and some chicken…?” John started.

But just then, out of Joe’s radio speaker, the DX station clearly sent, “WB4CBD, 599.” Joe raised his hand to quiet John and calmly—as if it was no surprise at all that the operator had managed to pull his

signal out of the wall of stations that were calling him—sent back a maddeningly slow, “599, TU.” All three visitors sat there, eyes wide, jaws dropped, as Joe turned and smiled at them.

“And that was without the amplifier,” he said, beaming. “I had a grid resistor go bad and I haven’t had a chance to fix it yet. I just worked that guy with 100 watts. And on the fifth call, too.” Joe did not seem to notice the amazed looks on his visitors’ stunned faces. “That antenna has just kept getting better and better. Don’t know why it’s changed since I first put it up, but it’s hotter than blue blazes now.”

John Carlson stood and walked to the garage door and on out into the backyard. Sure enough, most of what he saw stretched across the yard was rope, not copper wire. Joe’s antenna was only a small pair of wires and the junkbox-in-a-bundle at its center. He looked at the antenna then back through the window at the radio. At Joe and at the other two hams. “Well, I’ll be,” was all he could manage. He stepped back into the shack, settled into his chair, and studied the fine print on the beer can. Maybe they had somehow made the antenna better by making it smaller. Odds were against such a phenomenon. No way that should have happened. But maybe. Still, they were all baffled. It just did not make sense.

“Hey, there’s Pitcairn Island on 14 dot 007. Let’s give him a try,” Joe said and made his call. The VP6 came right back, and he gave Joe the highest possible signal report, 599, as well. “Now he’s just showing out,” Jack whispered.

They watched as Joe made a few more impressive contacts before they all suddenly stood and told him they had to go.

“We all have to try to work the DXpedition, too,” John explained. “And I have to tell you, Joe, I think I’m going to try to put that antenna contraption of yours together, too. Maybe a little shorter than how you drew yours up. But I have to admit, that baby works!”

Roger and Jack nodded. Reluctantly, sincerely.

As they left, Joe Wynn thanked them for the wings and beverages and wished them luck on working the DXpedition. Then he watched them go, a sly grin on his face. Watched them as they paused in the driveway and studied his “flotsam and jetsam” antenna for a long moment, pointing, shaking their heads, even arguing with each other. Watched as they shrugged their shoulders before climbing into Roger’s car and pulling away.

Finally, sure the doubters were not going to come back, Joe Wynn leaned over to where his antenna switch was bolted to the back wall. He pulled off two of the labels, one that read “Flotsam/jetsam” and the other one that said “Beam.” He switched the labels back to their rightful spots on the switch, where they belonged. To the place where his abysmal junk box antenna was hooked and the other to the position on the switch where his five-element Yagi beam—the one mounted at the 100-foot level on his tower, and the antenna he had actually just used to make those impressive contacts—was attached.

The smell of the chicken wings had lured Sparky into the shack. Joe leaned down and scratched the dog between the ears. He handed the mutt one of the wings.

“You deserve this, old boy,” he told Sparky. “I do appreciate you bringing me my present last night, buddy.”

Joe pulled from his pocket a metal tape measure. Etched in its side was the amateur radio call sign that belonged to John Carlson.

“You know what I always say, Sparky,” Joe told his watchdog. “The best antenna is always the one you got!”

ANNOUNCED DXPEDITIONS

Sep 5th to Sep 18th
SWAINS ISLAND
NH8S
Large scale operation
All bands and modes
QSL via AA4NN or OQRS

Sep 14th to Sep 28th
PALAU
T8XX
All bands and modes
QSL via DL5AXX or OQRS

Sep 24th to Oct 5th
CONWAY REEF
3D2C
Large scale operation
All bands and modes
QSL via YT1AD

Oct ???
CHAD
TT8TT
All bands and modes
QSL via I2YSB

Oct 6th to Oct 12th
CHRISTMAS ISLAND
VK9XM
40—10 Meters all modes
QSL via OH2YY

Oct 8th to Oct 17th
SABLE ISLAND
WA4DAN/CY0
AA4VK/CY0
All bands and modes
QSL via WA4DAN or OQRS

Oct 16th to Oct 23rd
RODRIGUES Island
3B9SP
Large scale operation
All bands and modes
QSL via HB9ACA