



DIGITAL DISPATCH

A publication of the
West River Radio Club



July—2011

Volume VIII—#VII

VITAL STATISTICS

The West River Radio Club, an ARRL Special Service Club, was founded in 2004 through the efforts of KA1ZQX, Tim Bell, and N1JSG, Richard Pierce.

Our 47 members pride themselves on belonging to an active and productive organization with involvement in many aspects of this great hobby: public service, special events, Field Day, repeaters, emergency communications, contesting and chasing DX.

Current officers are:

N1TOX, John Borichevsky; President

KB1J, Rich Austin; VP

KD6MPY, Sean Sanderson/WK1L, Bro Frank Hagerty ED/
VE Liaison

K1KU, Darrel Daley; Secretary/Treasurer

KA1ZQX, Tim Bell; Public Relations/ARES

PREZ KORNER

Is it Summer Time yet?

Wow, what a thrill to see the sunshine yet again. I think we were either going to get washed away or turn into mushrooms! I really did not know what was going to happen first. This spring has been a wild season with wild fires in the South West, floods from the huge snow melts in the Rockies accompanied by rain, thunderstorms that "trained" over New England and what have you. It certainly has been a whacky 2011 so far.

Here we are starting the month of July. Another time to get outside, catch some rays and think about that antenna that could perform better if you point it into another direction or maybe raise it up a foot or more. Then you think about the age of the antenna and wonder if it will survive yet another winter. Maybe a tree limb came down upon it as this happened to me this winter and has not been the same since. I originally thought that my dipole just snapped at the end, but I think it might have stretched a bit on the way down also as the SWR Meter shows its optimal SWR operation point has moved to a lower frequency. But it still tunes up well on the auto tuner. So that will be a project coming up soon.

Now that Field Day 2011 has come to a conclusion, I would like to thank everyone who participated within the event. From the setup and teardown groups, the culinary staff, those who operated, those who came to eat and added moral support, the visitors, the organizational leaders, and everyone else who had a part in the WRRC

Field Day 2011, thanks for being there. While the stats guy is still tabulating the results, I think this was one of our better years. We had more PSK31 contacts this year than ever, along with the CW and Phone, the numbers should be right up there. Yes we still did obtain our FD Bulletin from ARRL, sent a message to the ARRL Section Manager via the ARRL Traffic System, we had official representation from town and state offices, and more items to assist with bonus points. This we have done well in the past. Again, a good job was done by all!

So as we close on this segment of the July edition of the President's Corner, Celebrate the 4th of July in style with friends and family. A simple reminder to remember our family members and friends deployed in whichever branch of service he or she might be in, and pray for their safe return home once their tour of duty is up. They are the ones who fight for our freedom.

Until next month!

73

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de N1TOX

John Borichevsky – President WRRC



THE WRRC ARES NET

WHEN: Every Monday evening at 19:30L

WHERE: The Marlboro Repeater—147.015 MHz.
Positive offset and a 100 Hz PL

WHAT: The net varies between rag chewing on some Mondays and a bit of training on others. Often there is a combination of some training and rag chewing.

All are welcome and encouraged to check in.

You'll get in some rag chew time with a little training thrown in now and then.

Want to be a Net Control Station? Contact KA1ZQX, Tim at ka1zqx@arri.net

QUOTE OF THE MONTH

My hope still is to leave the world a bit better than when I got here.

Jim Henson (1936 – 1990) – American puppeteer

Full-Wave Loop Antennas—Part 2

Bro. Frank Hagerty, S.S.E. WK1L

In last month's Digital Dispatch, I wrote about the Delta Loop, and I want to start with a correction of that article. In the diagram of possible configurations for a vertical Delta Loop, Figure C should be labeled "Apex Down, Apex Feed." It was incorrectly identified as "Apex Up." (Thanks to Gordon W2NH for pointing that out.)

This month I'd like to focus on the Loop Skywire, which is a full-wave loop in the horizontal position. This has the potential of being the only HF antenna a ham might need. It is multi-band, has a low angle of radiation, and is inexpensive. It also has the potential of acting as a top-loaded vertical antenna, resonant at half the design frequency (or twice the design wavelength) of the loop itself.

Resonance

A center-fed dipole antenna is resonant at the design frequency and at ODD multiples of the design frequency. For example, An 40 meter (7 MHz) dipole can be used for 15 meters (21 MHz), but it is not resonant on 20 meters (14 MHz)—which is 2 times the design frequency, or an EVEN multiple. A **full-wave loop**, however **is resonant at ALL multiples** of the design frequency. So an 80 meter loop will also be resonant on 40 meters, 30 meters, 20 meters, 15 meters, 12 meters, and 10 meters. With a good antenna tuner, you may be able to tune on 17 meters, as well. Now that's a multiband antenna!

Radiation Pattern

The greater the enclosed area within the loop (that is, the closer to a circle as possible) the more efficient and omnidirectional the antenna will be. For smaller loops, you can use PVC pipe and 45 degree elbows to make an 8-sided frame, or you can use plastic irrigation tubing to make a circular frame for maximum efficiency. For larger loops, most folks compromise by using four support points to form a square; this will skew the radiation pattern somewhat. If you use fewer supports, or if the loop becomes elongated into a rectangle, then the directional characteristics become more those of a folded dipole, and the radiation pattern will be much less omnidirectional.

Construction

An article by Dave Fischer W0MHS in the November 1985 QST is available on the ARRL website QST Archives, and it also appears in the ARRL's *Wire Antenna Classics*. He used the formula, "**length in ft. = 1005 / f in MHz**" for the length of the wire loop (see Figure 1). While the loop can be fed anywhere, he recommends placing the feedpoint about one foot from a fixed-point support insulator. (See Fig. 1

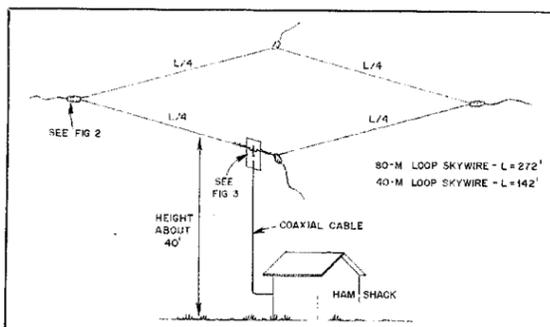


Fig. 1—A complete view of the Loop Skywire. The Loop is erected horizontal to the earth.

Jason Buchanan N1SU (<http://n1su.com/loop.html>) points out that, if you feed a square loop right at a corner, it will have increased gain in the direction of the opposite corner. A loop fed in the southwest corner will have a few dB (3dB or more) gain favoring the northeast corner. He also recommends placing the feed point on the north side of a square loop; he says he hears stations from the east, south, and west better that way.

In a square configuration, at least two of the insulators should be "floating" ones. This allows the loop wire to slide through the insulator, making the job of raising and adjusting it easier. Figure 2 shows fixed and floating insulators. Jason Buchanan N1SU (<http://n1su.com/loop.html>) recommends using pulleys in the place of floating insulators at the corners of the wire loop; he says

pulleys with a wheel diameter of at least 2" will avoid breakage of the loop wire in the long-term.

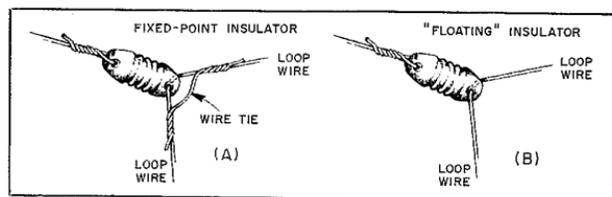


Fig. 2—Two methods of installing the insulators at the loop corners.

As with most antennas intended for DX, the higher the antenna, the better. Many hams have reported good results with loop skywires as low as 20 feet; but for an 80 meter long loop, 40 feet or higher would be best for low-angle radiation.

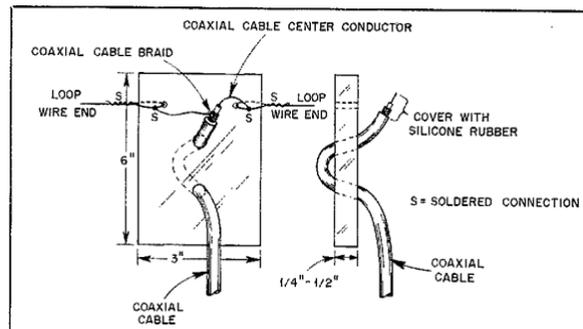


Fig. 3—Most users cornerfeed the Skywire. A high-impedance, weather-resistant insulant should be used for the feed-point insulator. Cover the end of the coaxial cable with silicone rubber for protection from the weather and added electrical insulation. Dimensions shown are approximate.

Feeding the antenna

As I mentioned in last month's article, the characteristic impedance of a full-wave loop is 90 to 120 ohms at the frequency for which it is cut. If you intend to use the loop for only that one band and feed the antenna with 50 ohm coax, then matching the impedance with a 1/4 wavelength section of 75 ohm coax between the antenna and the 50 ohm feedline will work well. However, if you are going to use the loop as a multi-band antenna, you have two options: 1) feed it directly with 50 ohm coax, or 2) use 450 ohm or 300 ohm ladder line and then match the ladder line to the radio with a balun that transforms the impedance.

The Loop Skywire as a top-loaded vertical

Dave Fischer W0MHS uses an 80 meter horizontal loop skywire as a 160 meter vertical by connecting the shield of the coax to the center conductor; he then connects this to the input of a matching network and connects the other side to ground (see Fig. 4). You could do the same thing with ladder line feed: connect both lower ends of the ladder line together and connect them to the matching network. (See: <http://www.saltoscuanticos.org/xe1kya/manuales/antenna/antennabook/05.pdf> page 5-22)

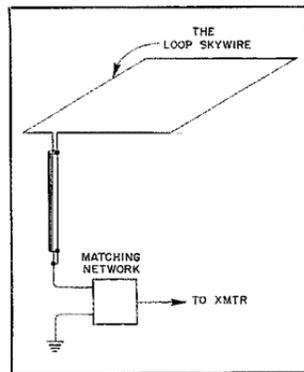
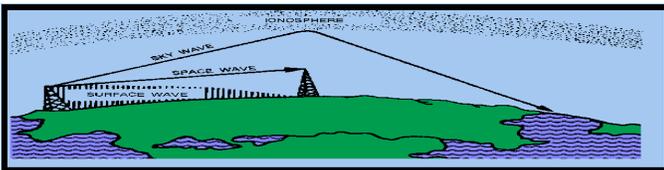


Fig. 4—The feed arrangement for operating the loop as a vertical antenna.

Loop antennas, oriented vertically, horizontally, or on a slope, open up lots of possibilities for MF, HF, and even VHF communications. If you have the room and the supports (trees) available, one of these might be a great antenna for your station.



HAPPY BIRTHDAY

Happy birthday wishes for the month of July go out to:

KB1USR, Marty—4th
KB1SPF, Art—5th
KB1VGI, Bert—11th
N1DLK, David—12th



FINANCES

The data below is valid as of the publication of this issue of the Digital Dispatch

44 Full members—3 Associate members
60% of the full members belong to the ARRL

Checking = \$1,830.44/Cash on hand = \$59.87

RUNNIN' ON EMPTY

Ed: I'm taking the month off from pounding keys and letting a famous author take over. I feel that his subject is very fitting considering the significance of July 4 to all Americans.

That famous author is Isaac Asimov. The constraints of space don't allow a thorough exposition of his VERY significant life, but for those interested, you can learn a lot about him at http://en.wikipedia.org/wiki/Isaac_Asimov

By the way, I agree with Mr. Asimov's opinions on our national anthem. Maybe familiarity has not bred contempt. I played it for two years in junior high school band, four years in high school, 4 years as a Navy musician, four years as a college musician and conducted it for over 20 years as a jr/sr high school band director. I even do a half way decent job of singing it, even though at 75 I've lost a couple of "steps" off of the top of my baritone/bass range.

To quote his next to last line below, "Don't let them take it away." Too many Americans have already succeeded in dumbing down too many of the legacies that have been passed onto us by our forefathers.

Enough pontificating on my part. Here's what Mr. Asimov has to say.

THE STAR BANGLED BANNER

By Isaac Asimov

I have a weakness - I am crazy, absolutely nuts, about our national anthem.

The words are difficult and the tune is almost impossible, but frequently when I'm taking a shower I sing it with as much power and emotion as I can. It shakes me up every time.

I was once asked to speak at a luncheon. Taking my life in my hands, I announced I was going to sing our national anthem - all four stanzas.

This was greeted with loud groans. One man closed the door to the kitchen, where the noise of dishes and cutlery was loud and distracting. "Thanks, Herb," I said.

"That's all right," he said. "It was at the request of the kitchen staff."

I explained the background of the anthem and then sang all four stanzas.

Let me tell you, those people had never heard it before-- or had never really listened. I got a standing ovation. But it was not me; it was the anthem.

More recently, while conducting a seminar, I told my students the story of the anthem and sang all four stanzas. Again there was a wild ovation and prolonged applause. And again, it was the anthem and not me.

So now let me tell you how it came to be written.

In 1812, the United States went to war with Great Britain, primarily over freedom of the seas. We were in the right. For two years, we held off the British, even though we were still a rather weak country. Great Britain was in a life and death struggle with Napoleon. In fact, just as the United States declared war, Napoleon marched off to invade Russia. If he won, as everyone expected, he would control Europe, and Great Britain would be isolated. It was no time for her to be involved in an American war.

At first, our seamen proved better than the British. After we won a battle on Lake Erie in 1813, the American commander, Oliver Hazard Perry, sent the message "We have met the enemy and they are ours." However, the weight of the British navy beat down our ships eventually. New England, hard-hit by a tightening blockade, threatened succession.

Meanwhile, Napoleon was beaten in Russia and in 1814 was forced to abdicate. Great Britain now turned its attention to the United States, launching a three-pronged attack. The northern prong was to come down Lake Champlain toward New York and seize parts of New England. The southern prong was to go up the Mississippi, take New Orleans and paralyze the west. The central prong was to head for the Mid-Atlantic States and then attack Baltimore, the greatest port south of New York. If Baltimore was taken, the nation, which still hugged the Atlantic coast, could be split in two. The fate of the United States, then, rested to a large extent on the success or failure of the central prong.

The British reached the American coast, and on August 24, 1814, took Washington, D. C. Then they moved up the Chesapeake Bay toward Baltimore. On September 12, they arrived and found 1000 men in Fort McHenry, whose guns controlled the harbor. If the British wished to take Baltimore, they would have to take the fort.

On one of the British ships was an aged physician, William Beanes, who had been arrested in Maryland and brought along as a prisoner. Francis Scott Key, a lawyer and friend of the physician, had come to the ship to negotiate his release. The British captain was willing, but the two Americans would have to wait. It was now the night of September 13, and the bombardment of Fort McHenry was about to start.

As twilight deepened, Key and Beanes saw the American flag flying over Fort McHenry. Through the night, they



heard bombs bursting and saw the red glare of rockets. They knew the fort was resisting and the American flag was still flying. But toward morning the bombardment ceased, and a dread silence fell. Either Fort McHenry had surrendered and the British flag flew above it, or the bombardment had failed and the American flag still flew.

As dawn began to brighten the eastern sky, Key and Beanes stared out at the fort, trying to see which flag flew over it. He and the physician must have asked each other over and over, "Can you see the flag?"

After it was all finished, Key wrote a four stanza poem telling the events of the night. Called "The Defence of Fort M'Henry," it was published in newspapers and swept the nation. Someone noted that the words fit an old English tune called "To Anacreon in Heaven" - a difficult melody with an uncomfortably large vocal range. For obvious reasons, Key's work became known as "The Star Spangled Banner," and in 1931 Congress declared it the official anthem of the United States.

Now that you know the story, here are the words. Presumably, the old doctor is speaking. This is what he asks Key:

Oh! say, can you see, by the dawn's early light,
What so proudly we hailed at the twilight's last gleaming?
Whose broad stripes and bright stars, through the perilous fight,
O'er the ramparts we watched were so gallantly streaming?

And the rocket's red glare, the bombs bursting in air,
Gave proof thro' the night that our flag was still there.
Oh! say, does that star-spangled banner yet wave,
O'er the land of the free and the home of the brave?

"Ramparts," in case you don't know, are the protective walls or other elevations that surround a fort. The first stanza asks a question. The second gives an answer:

On the shore, dimly seen thro' the mist of the deep,
Where the foe's haughty host in dread silence reposes,
What is that which the breeze, o'er the towering steep,
As it fitfully blows, half conceals, half discloses?
Now it catches the gleam of the morning's first beam,
In full glory reflected, now shines on the stream
'Tis the star-spangled banner. Oh long may it wave
O'er the land of the free and the home of the brave!

"The towering steep" is again, the ramparts. The bombardment has failed, and the British can do nothing more but sail away, their mission a failure.

In the third stanza, I feel Key allows himself to gloat over the American triumph. In the aftermath of the bombardment, Key probably was in no mood to act otherwise.

During World War II, when the British were our staunchest allies, this third stanza was not sung. However, I know it, so here it is:

And where is that band who so vauntingly swore
That the havoc of war and the battle's confusion
A home and a country should leave us no more?
Their blood has washed out their foul footsteps' pollution.

No refuge could save the hireling and slave
From the terror of flight, or the gloom of the grave,
And the star-spangled banner in triumph doth wave
O'er the land of the free and the home of the brave.

The fourth stanza, a pious hope for the future, should be sung more slowly than the other three and with even deeper feeling:

Oh! thus be it ever, when freemen shall stand
Between their loved homes and the war's desolation,
Blest with vict'ry and peace, may the Heav'n - rescued land
Praise the Pow'r that hath made and preserved us a nation.

Then conquer we must, for our cause is just,
And this be our motto--"In God is our trust."
And the star-spangled banner in triumph doth wave
O'er the land of the free and the home of the brave.

I hope you will look at the national anthem with new eyes. Listen to it, the next time you have a chance, with new ears.

And don't let them ever take it away.

Isaac Asimov



BE A PATRIOT

I'm sure that you remember reading in the August 2010 issue of this newsletter about the *Original 13 Colonies Independence Week Special Event*. You don't remember reading that? I'm disappointed. I just automatically figured that you were all loyal readers of this rag.

So be it. To refresh your memories – In that issue we celebrated the fact that Ira, W1IRA, successfully worked all of the 13 Original Colonies during this five day long special event. See <http://13colonies.info/> for details.



As per usual this issue is too late for you to join in the fun for 2011, but there is always 2012 to look forward to. Are you "license challenged"? Not to fret. You've got an entire year

to remedy that problem.

Participants this year were: (An * denotes a clean sweep) Not too shabby a performance, huh??

- * WK1L, Frank
- W1IRA, Ira (Grabbed 12 colonies)
- * W1ZS, Burt
- * N1TOX, John
- * K1KU, Darrel

If you were in there fighting for a toehold in the often ferocious pileups and don't see your call above let me know and I'll get word out of your well deserved credit.

UPCOMING EVENTS & LOOKING AHEAD

Ongoing: WRRRC ARES net...19:30L, 147.015, positive offset and 100 Hz PL tone.

July 12: Monthly meeting of the WRRRC in the EMT room at Grace Cottage Hospital. The meeting begins at 19:00L. Bring along a favorite Key or keys. I'm sure that there will also be a discussion of Field Day.

August 9: Monthly meeting of the WRRRC in the EMT room at Grace Cottage Hospital. The meeting begins at 19:00L

Also check out WRRRC events on the club calendar at <http://www.westriverradio.org/> and scroll down the page a bit.

GOTR

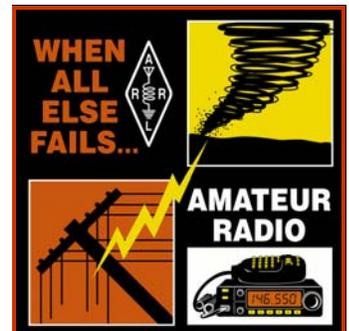
For the uninitiated that stands for *Girls on the Run*. For I don't know how many years now the WRRRC has provided communications for this most worthwhile event. The 2011 run took place on June 11.

Here's a paragraph robbed from Wikipedia to inform you about the organization.

Girls on the Run is a North American non-profit program that works to encourage pre-teen girls to develop self respect and healthy lifestyles through participation in running programs. The organization's curricula seek to address all aspects of the girls' development to enhance their physical, emotional, mental, social, and spiritual well being.

The Ham and CERT volunteers this year surely earned their marks for a job well done. Why is that, you ask? Well, for one thing, the weather was stinko – cold, raw temperatures and a heavy rain fell for most of the roughly two hour event. Nevertheless, there were no reports of water logged HTs or the spirits of the volunteers. Those well earned thanks go out to:

W1ZS, Burt
K1KU, Darrel
KA1CYZ, Jenifer
KB1OQH, Paul
KB1J, Rich
W1CWB, Chas
KA1ZQX, Tim
W2NH, Gordon
KB1UEF, Mike
N1TOX, John
KB1SPC, PJ



#7 IS HISTORY

As the saying goes, "Time really flies when you're having fun." That explains why it's so hard to believe that the WRRC has actually had seven field days since the club started. It's true, though, and some of you out there can brag about having a hand in each and every one of them.

2011 found us back once more at the neighboring land of KB1KSR, Ed and Lois Phoenix, and KB1OQG, Gaila. What a treat, being able to eliminate the QRM by having some distance between antennas. The club is very grateful to Ed, Lois, and Gaila for allowing us to disrupt their weekend routine yet once more. We're hoping that we behaved well enough to merit an invitation back in 2012 for #8.

And thanks to Brother Frank, WK1L, our favorite Irish chef, for bringing us food fit for a King, and, for that matter, even a Queen. Marion and I have twice had the pleasure of devouring his home brew pizza at our Putney Pad. This year it also garnered rave reviews from the setup crew who feasted on it prior to getting all the antennas strung and screen houses assembled.

In my official capacity as Field Day head Cheer Leader I hereby appoint him as Chairman and lone member of the WRRC Field Day Culinary Committee. Long may his chairmanship reign. Also, let's not forget to applaud all the budding chefs who brought their sumptuous vittles to the Saturday pot luck.

Here's a list of the participants in 2011. An asterisk denotes their assistance with the set up and/or tear-down chores. Bold lettering means that you helped as an operator. If you don't see your name/call below it just means that I goofed and didn't list you, or that you missed out on a fun filled weekend enjoying the camaraderie of some like minded Hams. You can rectify that by setting aside the last full weekend in June of 2012 as the weekend you'll be a part of the WRRC Field Day team when they tackle #8.

- * **KA1TWV, Elaine**
- * **WK1L, Frank**
- * **W1IRA, Ira**
- * AA1XU, Dick
- * KB1VGG, David
- * **N1XSS, Rob**
- * W1AAT, Allen (Allen is the Affiliated Club Coordinator for VT)
- * KB1VGG, David
- * **N1TOX, John**
- * **W1CWB, Chas**
- * **KA1ZQX, Tim**
- * **K1KU, Darrel**
- * **KB1J, Rich**
- * **KB1MQD, Karen**

As to visitors, yes, we appreciate kibitzers as well as the curious. This year's guests included:
 W1AAT, Allen: Affiliated Club Coordinator for the state of Vermont. Allen also graciously assisted us with our set up on June 24. Thanks.
 Barbara Barnish: Barbara is the widow of W1RZT, Bob, who became a SK in 2004
 KB1OQG, Gaila Marion Daley
 KB1KSR, Ed Lois Phoenix
 KB1VGK, Ryan Ryan's XYL
 Suzanne Borichevsky W2NH, Gordon

Ned Phoenix, plus Assorted Grandkid's of KB1KSR, Ed and Lois Phoenix
 KB1KSR's son and wife plus their guests from Norway Dana ?, a friend of KB1OQG's.

Let's close off this issue with a visual delight; several pictures of your fellow WRRC members enjoying the FD experience. Several of these pictures were contributed by W1AAT, Allen, Vermont's Affiliate Club Coordinator. Thanks, Allen.



W1ZS, Burt, grabs some needed sections on CW



**WK1L, Frank
 N1XSS, Rob
 In the process of se-**



curing one of our numerous antennas



This is the first year we've used a beam



**WK1L, Frank
 W1CWB, Chas
 Rehearsing their fraternal handshake**



Chef Boyar Hagerty, AKA WK1L

**KA1ZQX, Tim
WK1L, Frank
W1CWB, Chas
KB1VGG, David**



**KA1TWV, Elaine
KB1OQG, Gaila**

**KB1VGG, David
KA1ZQX, Tim**



**K1KU, Darrel
AA1XU, Dick
Doin' their thing**

**AA1XU, Dick
How big is the fish?**



**K1KU, Darrel
He ain't whistling Dixie**

CUL es 73 de K1KU SK

