My current loop Antennas

Please join the yahoo users group where there are many helpful and willing operators, link below.

Check out this Interesting Podcast channel, if you have an interesting Ham Radio background let Eric know about it.  

http://www.qsotoday.com/

Check out these call signs to view other Fractional Wave Loop Antenna users and their antenna installations:
WWW.QRZ.com/db/AG6LJ
WWW.QRZ.com/db/N9TDM
WWW.QRZ.com/db/KK6FNP
WWW.QRZ.com/db/NQ7I
WWW.QRZ.com/db/K6YVJ
WWW.QRZ.com/db/N6NBV
WWW.QRZ.com/db/WB6OBB
WWW.QRZ.com/db/KG6NRW
WWW.QRZ.com/db/K9KBX

AG6LJ & Myself have decided to refer to these antennas in a more appropriate terminology. The term Magnetic loop is very ambiguous especially to the beginner. We are now referring to these antennas as "Fractional Wave Loops" My designs are quite different than the conventional "Magnetic Loop" in several aspects.

Please note that if you want info on building these antennas please join the users group at this link. It is far too time consuming for me to answer each individual email, There is a ton of info FAQ's on the group and many helpful people.

Yahoo Group: https://groups.io/g/HelicallyLoadedMagLoop
Improve your Audio, it can make as much difference as an Amplifier, Watch my video to see what you are missing.
http://www.youtube.com/watch?v=vC-z4ouLIKe

Sorry about the low volume on this video. You can fix your computer to enhance youtube videos by looking at this volume fix, it works great! https://www.youtube.com/watch?v=4xe297-Tu-o

Check Out My Commcat Live Page, watch your signal on my S-Meter...http://k8nds.myqsx.net/

**********New April 3rd, 2013**********
You Tube Video"Tuning a HL Fractional Wave Loop Antenna"

2 Element Helical Fractional Wave Loop Video
http://www.youtube.com/watch?v=fEQYQS6eC50&context=C3b97b00ADOEgstoPDskJaGpoOk5Ji7jBU7wjs8zm4
Check out my page for more info:http://www.hlmgneticloopantennas.com/
ClickHere http://www.hlmgneticloopantennas.com/2elementloop/

******** New Loop January 2nd 2016  160 to 40 meters  ******

My first attempt at a 160 meter loop.
Dimensions: Built on a 3.5 inch OD corrugated plastic server pipe. Loop diameter is 8.5 feet, 26.7 foot circumference.
62.5 feet of 3 inch wide X .008 thick copper strap wound on the loop frame.
The Vacuum variable capacitor is 1000pf @ 10KV Russian made surplus.
The match is shorted Gama and is between 38 and 56 ohms across that operating range.
Fed with 50 ohm coax.
The loop is mounted on a ham rotor, the loop bottom is 6.5 feet of the ground.
The loop radiates in the plane of the loop and seems to be about 22 db plane to side on 160 meters.
Preliminary results are so far great, the noise floor on 160 at my QTH is approximately 18 to 20 db lower than my Inverted L.
I can hear things that are buried in the noise floor on the inverted L.
Worked into Europe last night with 4 countries with 5/7 to 5/8 reports on 80 meters.
160 meters was poor conditions but I worked PA from AZ on 160 meters SSB.

*** Mystery Antenna 09/05/2014 ***
My "Mystery Antenna" , I haven't named it yet.
20 through 12 meters continuous coverage. 1.15 to 1.0 maximum VSWR when remote tuned to frequency. The dimensions are, 3.5 feet in diameter and currently mounted only 2 feet measuring from the top of the antenna to ground level. Omni directional radiation pattern, vertically polarized plus very low noise. Great to place in your garden area, out of sight and out of busybodies sight. No ground plane necessary unlike the DDHRR which requires a large ground screen. (check out the DDHRR in the photos below for reference) The DDHRR changes VSWR drastically when the ground plane is changed in size. The DDHRR needs the feed point retuned depending on ground plane size and type of ground. Also the DDHRR changes efficiency when the ground is wet or dry. The 50 ohm feed point only needs to be tuned once. It can then be placed over metal, ground or any other surface with little to no change in VSWR, this design is completely ground independent. This antenna can be used on top of an RV or roof top of the house, It handles the full legal limit power.
It is a bit over 1 S-unit (sometimes 7 to 8 db) lower when compared to my 2 element fractional wave loops although quite often compares very close. Signals are more variable than the fractional wave loops do to a very focused radiation pattern of the 2 element loop. The Mystery antenna is omni directional and automatically loses 6 to 8 db due to the directed pattern of the 2 element loops. The mystery antenna compares very close to my elevated ground plane antenna as far as QSB. QSB is much more noticeable with this design than the 2 element loop which has strong attributes of very low QSB.
This antenna being slightly less effective than the fractional wave loop is the ultimate in Stealth design for those operators with very tight antenna restrictions.
I have worked the same DX stations switching A/B with the remote stations stating that I am still Q5 copy but a bit lower on the S-meter.
Keep in mind that the antenna being so close to the ground will be shaded in directions of obstructions like any low profile antenna would be.
If used at ground level it must be far enough from the obstruction to launch a radiation angle over the obstruction.
The roof top is a great place for one of these antennas for a 360 degree radiation angle clearance. If a restricted ham has a clear compass view to the area of interest it can be right on the ground level.
My installation has a bit of a shadow to the south due to my home, it is noticeable from signal reports only in that direction.
I will be constructing one of these which will be 7 feet in diameter and still only 2 feet in height for 40 to 17 (possibly 15 meters) in the near future.
More info on construction will be added to my "antennastealth.com" web site shortly.
At first glance this design may resemble a DDRR with built in reflector, it is not a DDRR.

Mystery Antenna now painted as shown above. My current 20,17, 15 & 12 meter antenna.
Very low noise, full 1.5 kw capable. Low angle radiator omni directional.
Ground independent, no ground plane necessary.
Completely stealth hidden between bushes.

******* 6 Band 2 Element HL Fractional Wave Loop (below)*******
11/04/2013 By RF K8NDS Designs
40,30,20,17,15 & 12 meters < 1.3 VSWR 40 thru 15 Meters
1.6/1 on 12 meters
6 Band, 2 elements, 1.5 Kw limit. 6 ft off ground; shown 1/2 painted for viewing
Amazing Antenna and signal reports! AG6LJ, John in Santa Barbara, CA owns this antenna
Look for him on the air.

First 2 element (02/21/2012) 80 to 20 meter 2 element loop version (Outdated)
17 to 10 meter version on left, Two 33 inch elements, rotates azimuth & elevation. 7.5 ft high Elevation rotation changes polarization
On right, 80 to 20 meter version, two 4.5 ft loops, rotates azimuth only; 10 ft high
DDHRR Antenna (Direct Driven Helical Ring Radiator)
30, 20 & 17 meters 1.0/1 VSWR, .3uv noise floor on receive
3 foot diameter ring mounted 12 inches above the ground plane, currently set over 260 SQ ft of hardware cloth.

Newest Antenna design 05/06/2013 (modified 05/13/2013) This is a Modification of the Northrop Scientific US NavyShipboard low profile antenna "DDRR" Direct Driven Ring Radiator. My new Abbreviation for my modified design is 'DDHRR' Direct Driven Helical Ring Radiator. Results so far are very comparative or slightly better then a 1/4 wave vertical with several radials. The noise floor of this antenna far surpasses the vertical, the measured noise floor even with 10 db of pre-amplification is only a bit over S-1. This Helical design has decreased the necessary ring diameter considerably. The VSWR is 1.0/1 across the entire 17 meter band and less then 1.3/1 across 20 meters with a very High Q, the 2/1 bandwidth is 80 KHz but is retunable to 1.0/1 with desktop control unit. The SNR is as good or better then any other antenna that I have for 17 meters, it is even slightly better then my HL-mag loops. I copied a station this morning after calling CQ in Washington State (From Central AZ My QTH), he was running 1 watt QRP; I copied him Q5, S-3 above the noise floor.

A Great option for anyone in a complete antenna restricted area. This antenna will work fantastic on a metal patio cover. This antenna unlike my Helical Magnetic loop is GROUND DEPENDENT, the larger the ground screen the better it works. I use 1/4 hardware cloth under the base for the ground reference. I have approx 100 SQ ft of ground screen right now; it seems to be sufficient. Just increased the mesh to 150 SQ ft, it even got better, It is at least as good as my 1/4 wave elevated fed ground plane now. (07/09/2013)

Increased the ground plane again today (09/19/2013), it is now 260 SQ FT(16X16); noticed another improvement. This DDHRR is now better all the time then my elevated 17 meter ground plane with a noise level of at least 10 db lower then the ground plane. WoW, I wonder what a entire back yard covered with wire grid would do? I am going to find out when I relocate early next year. Going to install at least 500 SQ ft of ground plane, hopefully 1000 SQ ft.

Not bad for 12 inches above ground!
The loop dimension for 17 meters is 3 ft diameter, wound on a 2 inch flex PVC (about 2.4 inch OD), the loop is mounted 12 inches above the ground plane. The Z match changes drastically when adding more ground screen; so add your ground screen before tuning the match. My Match measures 50 Ohms with Zero reactance; my VSWR meter does not even wiggle reflected power with 1KW peak on 17 meters (1.3 on 20). Keep in mind, this antenna mounted on the ground is dangerous around children, 25 KV or more can be present on the Capacitor end of this antenna, I have no one around my property. Mounting on a metal roof or metal patio cover would be ideal away from all pedestrians.

A small wooden fence around this antenna and a Danger HV sign may be a good idea. Fried Rabbits and critters could be an issue....hi hi.

If you have neighbors that you do not like, please ask them to go out and check your rodent deterrent system and grab tight on the end of the loop. My current mods include 20 meter operation 17 & 20, 20 meter performance has not yet been determined......... Will post soon.

O7/09/2013........ I have been working ZL's & VK's for the past week on 20 meters using this antenna. My reports have been just a bit lower then my

2 element Helical Mag loop. ZL2JBR stated that I only dropped down from S-9 about 1 to 1.5 S units, Hawaii stated that he could hardly tell the difference. This appears to be a very viable antenna for anyone who cannot put up anything. . . . . . Hi Hi.

The antenna is such low profile that no one can even see this antenna unless they come into your yard.
I would recommend that it be located at least 20 ft from the QTH.
Have Fun! ......Rich
Check out my DX Contacts using my 2-element Helical Loaded magnetic Loop Antenna. NEW 05/05/2012

Here is a Quote from VK2DX on my 2 element Helical Magnetic Loop:

Again, I am not an antenna expert - just someone who spends lots of time tuning the knob. In just 4 months this year I've made 21,000 DX contacts and trust me, I can tell the difference between good signal and great one. Your signal that evening was what I would described "Best punch for antenna footprint" I've ever heard on 20m.

All the best, 73 Nick VK2DX
Sydney, Australia

Check Out K5RPM Page, read Ron's evaluation of my Helical Loop design: http://www.qrz.com/db/K5RPM

Check Out AG6LJ Page, View John's HL mag Loop installation: www.qrz.com/db/AG6LJ

Check Out N6NBV Page, View Steve's 20 to 10 meter HL Mag Loop installation: www.qrz.com/db/N6NBV

Check Out KE7NI Page, View Bill's 40 to 15 meter, 39 inch, 6 ft above ground: www.qrz.com/db/ke7ni

Watch my YOU TUBE VIDEO's demonstrating this antenna in action:

Main: http://www.youtube.com/watch?v=2YpyLAULKag

2nd video Part 1 http://www.youtube.com/watch?v=xTg6p Vesbhc

2nd Video Part2 http://www.youtube.com/watch?v=oTPZ3E_6M8A

Latest Tuner design, direct drive with limit travel and motor stall Warning Led on control unit.
Remote tuner and controller Schematic/block diagram. Revised 11/12/2013

Design By: K8NDS 08/02/2013

Designed for use with Russian Vacuum Variable capacitors.
End of travel protection, shuts off in one direction
Stall switch in one direction
R1: Slow speed (fine tune control)
R7: Motor speed (balance adjust)
D1: Steering Diode
SW1: Small micro switch for motor shut off
SW2: DPDT Momentary control off Switch
SW3: DPDT speed control
D2: Stall lamp LED, end of travel

Note: Use 2 extra Rotor wires for motor control

DC Voltage: 13.5 to 15 volts @ 300mA
Minus DC
+13.8 Volts DC
This control circuit above has been replaced with PWM (pulse width modulator) circuit board which is available on Ebay.

It makes it much simpler plus better speed control. The end of travel micro switch and steering diode remains the same.
Newest round Loop Design Dec 2012, operates 40 to 15 meters; 39 inches in diameter, 2 inch PVC
Latest single element design, 60 to 15 meter range. Shown with no weather cover & no paint.
Latest 60 to 15 meter design shown with weather cover & no paint.
Photo Taken at N6NBV’s Qth Steve in California.......20 through 10 meter Helical Loaded Loop Antenna
Before Painting and after Painting with rotor added

80, 60, 40 & 30 Meter Linear Loaded Magnetic Loop, 72.5 inches in
diameter mounted 5 ft off the ground. Handels full legal limit 1500 Watts.

Tunes 1/1 vswr at 50 ohms from 3.0 mhz to approx 12 mhz.

The Q of this loop is > 1400 at the low end of tuning (75/80 mtr range). The Q is a bit lower in the 40 mter band, around 1000 or so. This reflects the bandwidth to be approx 7 khz on 80 mtrs and around 18 khz on 40 mtrs. The sharp tuning is actually an advantage to act like a sharp filter out in your yard where it counts. The broadside "Near E field rejection" is approx >50 db to any local electrical interference. A rotator can be of some advantage and seems to exhibit 6 to 12 db difference when the station is in the plane of the loop and is utilizing low angle radiation. There are times when I see as much as

24 db change. I do notice this advantage with my 40/15 version when working DX.

2 Element 17 thru 10 Meter 4 band loop

YouTube Video

Click Here

http://www.youtube.com/watch?v=fEQYQS6eC50&context=C3b97b00ADOEgsToPDskJaGpOok5i7jbU7wjs8zm4
Azimuth and Elevation rotation

Tests compared to the single element 20-10 meter loop & 17 meter elevated fed ground plane with 45 deg sloping radials. The single 20-10 meter loop is
shown farther down this page, A/B tests have been consistent 12 to 15db gain over the single loop & the ground plane.

Check my link above to see more info on this antenna.

WWW.hlmagneticloopantennas.com

Gamma Match original setting greatly affected by the Capacitance to the workshop floor. Was 50 Ohms @ 1/1 VSWR

in this position; changed to 2.5/1 when raised to operating position. This was matched here only for testing purposes.

Do not solder match into place until erected.
Actual Gamma Match was perfected on a ladder and is now 1/1 VSWR @ 50 ohms across the entire tuning range.

Rear view of feed wire/gamma match exiting the PVC tube
Oldest 20 -10 meter loop (Feb 2011); This loop is only 33 Inches in diameter, it is mounted 4 feet off the ground on a rotor. The rotation seems to make a large difference. I have recieved reports of as much as 24db signal change by rotating it just 90 degrees.

I also notice as much as 18 to 24 db change with local contacts. This design is named by me as a"Helically wound linear loaded magnetic loop" You won't find this anywhere on the internet, it is my design. I am disclosing this to the public through a "Disclosure rather then a patent".

No one else will be able to patent this, I am giving it for free to all those interested in building one. A great solution for HOA Hams.

Now there is no excuse for not getting on the air because the XYL wants to live in an antenna restricted environment.

Don't use this drive system, My new direct drive system (above) is much better and easier to impliment.

PVC Loop Frame using flexible PVC, NEW 12/17/2012
Gamma Match detail. OLD DESIGN, do not use steel clamps; interferes
with gamma tuning. Use ONLY Plastic Clamps. Solder gamma then clamp
with heavy duty plastic cable clamp to secure.
Mounting of the SO-239 Connector
The following Photos are the actual Bandwidth characteristics that were measured in the real antenna position by sweeping the antenna. This will give the builder a feel for what to expect out of each band when designing a loop.

80 Meter bandwidth trace, depicts very narrow band width, a characteristic of the lowest design frequency.

Bandwidth is ONLY 11 Khz @ 2:1; this makes a great stop band filter for QRM off to the side!
60 Meter trace 20.2 khz 2:1 bandwidth, Ignor the spike at 5.400 mhz at the left of the desired trace.

It was an actual on theair RTTY signal, very strong.
40 Meter trace, 30.6 Khz 2:1 bandwidth
30 Meter trace 76kzh 2:1 bandwidth
This is a trace of the 80/30 meter loop tuned on 20 meters. The loop is no longer operating in the mode of a magnetic loop. The inductance of the driven element is too long. The electrical circumference is approaching 1/2 wave length. It no longer has a null pattern on this band. With that being said it works real well on 20 meters but has the characteristics of a vertical antenna, I can not null out noise on this band with this antenna. Even though this antenna design is not a true magnetic loop on 20 meters the performance on 20 is excellent. As you can see the bandwidth is 224 kHz 2:1, no longer a HI-Q antenna.

The following are photos of the 20 - 10 Meter loop.
20 Meter bandwidth is 62.6 Khz 2:1
17 meter bandwidth is 100.5 KHz @ 2:1. this just about covers the entire phone band less then 2:1 VSWR
15 meter bandwidth is 142.6 Khz @ 2:1
12 meter bandwidth is 222.6 KHz @ 2:
10 meter bandwidth is: 190 Khz @ 2:1

These "Helically Wound Linear Loaded Loops" are performing far beyond my expectations.

I hope to see all of you on the air to show you proof......Have Fun! K8NDS

My 8 area call sign comes from Michigan. I have retired in the southwest in the city of Cottonwood in the Verde Valley high desert 3580 ft elevation, 100 miles north of Phoenix 45 miles south of flagstaff. I retired from General Motors corporation in Warren, Michigan after 29 years in the engineering group. My last assignment was development of the GM Onstar system where I was responsible for automotive antenna development, such as GPS, Cellular and AM/FM.

I curently live in Prescott Arizona, moved here in 2014, a wonderful place to live and retire.

My radio days go back to when I was 16 years old, I met a local Ham in the neighborhood by listening to 160mtrrs on the sub harmonic using an old tube type AM radio. The gentleman (W8LVR) gave me the novice test and I passed it. I worked and got my General Class ticket 6 months later. Two years later I joined the USN and became a Radioman aboard two different DD class destroyers. I became very proficient at CW and copied about 30 WPM on a typewriter. In the last 18 months of the military I studied for my First Class commercial ticket, took the test and passed 3rd, 2nd and 1st in the same day. When my tour of duty was finished I went to work for a communications company doing two way radio repair and repeater installations. I also worked as a week-end Broadcast Engineer of a large station in the Detroit area, it gave me plenty of study time as I went to school while doing both jobs.

Along came an opportunity to interview at General Motors Detroit Diesel Division, I got the job and worked in the Advanced Engineering Laboratory measuring parameters of diesel engine design. Two years later I transferred to the GM technical center in Warren Michigan. I worked in Electromagnetic Interference department (EMC). I developed many test methods for EMC employing and developing fiber optic transmitters and receivers. I then transferred to Advanced Engineering and ended up working on AM/FM antennas and dissecting competitors systems. Along came the start of Onstar, I worked on testing the first Onstar hardware systems for about ten years. I developed many test fixtures and test methods for GPS and
cellular antennas. My last task was putting together an RF lab and Audio Lab for Infotainment, I retired from that position. I have some Antenna patents under my name /GM as the owner of course.

My favorite hobby is dreaming up new Amateur Radio antennas designs, I am building several Magnetic Loop designs for limited space usage.

I also do custom computer consulting and design.

One of my other interests that I have studied and examined for many years is the effects of EM fields on the human body. I have designed a sleep system that shields the natural brain waves from the RF spectrum, keeping the nervous system tuned to normal. My XYL and I have been using this for 4 years now, it is amazing! I also have other friends that use it, they will also swear to it. It makes you sleep like a baby! (that is a good sleeping baby. Hi Hi)

Many think that EM wave effects on the human body is all hocus pocus, but I can tell you from experience that EM wave exposure causes many issues including a poor sleep function which is the downfall of good health.

I have studied health & nutrition for over 40 years now, my XYL and I are very healthy as a result (no medications and no doctors). Without your health you have nothing, I guess that is why it is my 2nd favorite hobby.

*EMF Exposure and YOU!*
http://www.youtube.com/watch?v=8XWTOI9EMY&context=C3043543ADOEgsToPDskJaGpOok5Ji7jbU7wjs8zm4