Dxers Unlimited's weekend edition for Sunday May 15, 2016

By Arnie Coro

Hi...my friends, this is Dxers Unlimited , and here is an update about solar activity to start the program.

Solar flux near 95 and the A index the planetary geomagnetic disturbance indicator was 8 during Saturday morning my local time, when the show was recorded for transmitting on Sunday and Monday UTC days.

Yes amigos your radio is tuned or your world wide web connection is streaming audio from Radio Havana Cuba, and you are listening to the weekend edition of Dxers Unlimited that now starts as always with radio hobby related information....

I am Arnie Coro, radio amateur CO2KK your host here ready to share with you the story about the 27 inches diameter aluminum bicycle rim loop antenna....

Recently a radio amateur friend of mine built a bicycle rim loop antenna following a sketch that I carefully drew for him drew for him during a lunch break at a meeting that took place at the beautiful Havana´s Palacio de las Convenciones convention center.

Francisco my friend, took the sketch with him back to his province and a few days later he sent a nice e'mail to tell me about the success achieved with the just built 27 inches diameter aluminum bicycle rim loop antenna .

Using a dual gang three hundred and sixty five picofarads per section variable capacitor salvaged from an old AM radio, this 27 inches diameter compact magnetic loop tunes down to about 2 megaHertz and up to 12 megaHertz at the higher end.

It shows a very high degree of selectivity , so tuning is quite critical.

The aluminum 27 inches bicycle rim is cut so as to split the center, and a piece of plexiglass is inserted to separate both sides. The variable capacitor is connected to each side of that open part of the bicycle rim , and the coaxial cable downlead is connected to a small loop , about 6 inches in diameter that is placed inside the big one.

My friend began his experiments with the new small footprint antenna by using this magnetic loop as a receive only antenna. He also tested it on the 20 meters amateur band, but that involved having to change the tuning capacitor , because the receiving type capacitor has the fixed to movable plates distance so small that even with just 5 Watts power it was arcing over.

Using a transmitting type variable capacitor marked as having three thousand volts insulation made possible to establish contact with several amateur stations on the 14 megaHertz band CW QRP spot frequency of 14.060 kiloHertz...

It was clear, Francisco told me that the efficiency of such a small magnetic loop will not be very high, but if you figure out that the bicycle rim magnetic loop can be built quite easily and the fact that it uses a discarded rim that suffered a slight out of round deformity after his bike hit a pothole.

This is an antenna , Francisco insists, that every short wave listener and radio amateur should build, considering its very low cost and amazingly good performance as an indoors antenna system.

Francisco added that reception down to the 60 meters band is perfectly possible with the large capacity required for resonance, and he says that on the lower frequencies between 5 and 8 megaHertz, the small magnetic loop does help a lot to null out interference from nearby noise sources, by just turning the loop antenna around in order to cancel the direction from which the noise is coming.

To say that I am very enthusiastic about magnetic loop antennas is an understatement amigos, and certainly I do have many reasons to recommend using them , especially to apartment dwellers and to those living in heavily populated urban areas, where the latest measurements of radio frequency noise levels by the ITU , International Telecommunications Union have shown a dramatic increase when compared with previous measurements done during the late nineteen fifties and early sixties.

Of course that you can build a much larger diameter magnetic loop using copper tubing of as much as 25 millimeters or one inch diameter. It will be a lot more efficient, but it also will take a lot of space and will require a well built support structure.

Stay tuned for more radio hobby related information coming to you direct and from the source:: Dxers Unlimited here at Radio Havana Cuba.... I am Arnie Coro in sunny La Habana , Cuba back in a few seconds...

This is Radio Havana Cuba, the name of the show is Dxers Unlimited and today we are talking about magnetic loop antennas for short wave, AM broadcast band and ham radio applications...

Another excellent example of the high performance achieved by magnetic loop antennas is the use of a multi turns loop for AM broadcast band reception that outperforms many other types of antennas, even when used indoors.

I happen to own a small multi turns magnetic loop built using a multiple conductors cable that is used to interconnect computer devices. The ten wires ribbon is inter connected in such a way that it makes a multi turn loop. When tuned with a standard 365 picofarads air spaced variable recycled from a broken down AM tubes radio, this small loop
increases the sensitivity of any small solid state portable radio, but just coupling the two antennas at short distance.

The small portable radio´s ferrite rod antenna is coupled to the tuned loop and you will hear a really impacting boost in signal strength when the two antennas are properly tuned.

Here in downtown Havana, using the multi turns ribbon loop I can pick up Radio Reloj´s Santa Clara city relay station om 570 kiloHertz that is about 300kilometers away . Radio Reloj´s relay there is operating on 570 kiloHertz and that is the networks lower frequency station, selected many years ago to improve the coverage of Radio Reloj in the mountains south of Santa Clara.

Lower AM broacast band frequencies propagate much better via the ground wave, and that was the reason to select 570 kiloHertz for that relay station that is now running at 25 kiloWatts into a very nice vertical grounded folded monopole antenna that offers the great advantage of additional protection against direct hits by lightning ...

You can learn a lot about magnetic loop antennas by just writing the three words ... magnetic loop antennas into the search box of any of the popular Internet search engines, amazing as they may sound to you... in front of your eyes the search engine will display many URL's where to go and look for more information about magnetic loop antennas amigos.

By the way, there is really no need to explore them all, as the most common and reliable ones will be found in the first 50 to 100 Internet locations...

Now, just before going QRT, here is Arnie Coro´s Dxers Unlimited´s HF plus low band VHF propagation update and forecast.... Solar flux at 10,7 centimeters wavelength continues to be very low, just barely above ninety ... but that is not the most important part of the forecast...

Expect frequent sporadic E layer openings that will make possible 10 and 6 meters amateur bands contact and some days even picking up distant FM broadcast stations ...

By now no more Transequatorial Propagation openings to be happening during local afternoon and early evening hours, the season for the TEP mode is now over.

We must wait until early September for the autumn equinox TEP events to begin . Amigos please don´t forget to send your signal reports and comments about how do you receive our station, and I am very interested in receiving reports about our Tropical Band transmitter on 5040 kiloHertz, please send them to to inforhc at enet dot cu... again
inforhc at enet dot cu or VIA AIR MAIL to Arnie Coro Radio Havana Cuba, Havana , Cuba

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