

# *Dxers Unlimited middle of the week edition for Tuesday July 12, 2016*

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By Arnie Coro  
Radio Amateur CO2KK

Hola amigos radioaficionados all around the world .. I am Arnie Coro radio amateur CO2KK, the host of this program that today begins with the following statement : The Sunspots are Back.

Yes, after twelve days without a single sunspot in sight, the Sun has revived and the all important daily solar flux figure is barely touching the 100 units mark.. This upsurge in solar activity will surely be felt from now on... something already appreciated by the daily ionograms that show a much higher daytime maximum usable frequency curve.

During the local evening hours we may even pick up some 20 meters band DX for the first time this summer.

Item two: Little radios can be very poor performers, or you may find some that are not bad at all.

The performance of a small battery powered multi band receiver with short wave bands coverage depends on many elements, that start with the designers , continue with the quality control at the assembly line, and ends up with two possibilities.

A nice small rather expensive portable, or a small piece of junk not even capable of providing local FM broadcast band reception .

My advice, before adding a new radio to your treasure chest, do a lot of research among short wave listeners forums, and by all means avoid the cheap, the inexpensive and even some of the more expensive ones that have proven to be a failure. It is nice to own a small portable, but if it is a rather expensive one, then be very careful when taken it out to the field, because most of them are not built for rugged operating conditions, and if they get wet, or are subjected to high temperatures, you will probably will not be able to repair it, because you will be charged a lot of money for the expert services of a technician really capable of bringing back to life one of those expensive portable radios.

Item three: More about receivers that can be built by electronic hobby enthusiasts , or by others that have a little knowledge about building equipment and can obtain the help of a more experienced person.

Start by assembling a simple variable voltage direct current regulated power supply, that from now on will be your best friend at the workbench. Mine provides up to 3 amperes, and a friend built a similar one capable of going up to 5 amperes... The variable voltage range goes from 3 to 15 volts... and later we both added several fixed voltages outputs for 4.5 , 6.0. 7.2 , 9 and 12 volts at a current capability of up to one ampere.

By the way I have never seen a similar multi purpose utility bench power supply... and let me add that both , mine and my friend's were built from recycled components.

The KKV One, variable regulated voltage power supply circuit diagram and building instructions will soon be available, ready to be sent via e'mail to all listeners interested in duplicating it ... it will also serve as a nice power supply unit for a 2 meters band handie talkie that was out of service for a long time, after the very expensive rechargeable battery pack went dead, and I could not find a replacement.

The Yaesu FT2008 two meters band handie talkie works nicely when fed with 9 volts, and as stated here in previous programs, my advice is to never run portable two and seventy centimeters bands handie talkies with 12 volts DC, because if you transmit a lot with them they will certainly overheat and the expensive output module may fail...

I will be back in a few seconds after a short break for a station ID.... With solar flux now back to almost 100 units, this is Arnie Coro in sunny La Habana , Cuba

This is Radio Havana Cuba, the name of the show is Dxers Unlimited and here is item four of this middle of the week edition amigos.... The ever popular antenna topics section is combined today with the most popular one. ASK ARNIE.

Here is the answer to listener Gustav from Malmo Sweden request ...

Gustav says in his e'mail that when he returns home during weekdays only the 30 and 40 meters band are open... later in the evening 80 meters also opens up. Then he adds and I quote " Arnie , after a very complex negotiation with the manager of my apartment building, he has allowed me to install a rooftop antenna , that due to the space available may be no more than 12 meters long... I can take the RG8X coaxial cable down to my apartment easily, because I live on the top floor... but a 10 meters long antenna with two leeways of one meter to each side, can only work on frequencies of 14 megaHertz and above....

Then Gustav says that his possibilities of operating his amateur radio station are open only after local sunset... so he wants to know if a short 40 meters band antenna can be designed to fit into that 12

meters overall length available space. The antenna will be out of sight... well away from the protection walls of the roof, so we can say that in a certain way it will be a stealth antenna.

I have already sent to Gustav the data for building a very simple , yet effective shortened dipole antenna, that can be tuned to a segment of 40 meters .

The actual antenna is about 10 meters long, and it uses two easy to build loading coils , wound on lengths PVC 100 millimeters diameter white plumbers plastic pipe... You only need to wind 15 turns of number 14 plastic insulated wire. Do it twice , because you will need two coils.... You will also need a one to one balanced to unbalanced RF transformer or BALUN, as they are also known.

The actual dimensions of each side of the antenna are starting from the balun that also acts as your center insulator... two and half meters... then you solder one end of the coil to that wire, and the other end of the coil goes to another length of wire that for practical tune up purposes you make it about three meters long.

Raise the antenna no less than 4 meters from the rooftop, and carefully tune it for the wanted segment of 40 meters, in this case , 7000 to 7200, kiloHertz with a minimum standing wave ratio to be located around 7100 kiloHertz.

This shortened resonant dipole for the 40 meters band will provide excellent performance, especially if you can install it at least 4 meters above the ground or ground reference.

The rooftop antenna installation is capable of a performance quite close to a full size 40 meters wire dipole.... The graphic of the 40 meters shortened dipole is available for sending via e'mail... it is a small dot jpg file, that is very easy to understand ... The shopping list for the materials to build the antenna shows that they can be found at any hardware store. You will only need number 14 or number 12 PVC insulated wire, of the type used for domestic installations... two lengths of 100 millimeters or 4 inches diameter white PVC drain pipe for winding the coils and two 20 centimeters long pieces of 25 millimeters diameter white PVC plumbers pipe that will be drilled to make the end insulators...

The one to one balun can be bought from a radio amateur's store, or it can be home built too.

The coaxial cable I recommend is the RG8X type, that will provide very low attenuation at seven megaHertz even if you need to run a long length from the antenna to your hack. At the end of the coax, you will need to install a male coaxial connector that will fit your transceiver or antenna tuner...

Before wrapping it up, let me add that adjusting the antenna will require the use of a 50 ohms standing wave ratio meter and that this shortened 40 meters band dipole will load quite nicely also on the 15 meters band using a wide range antenna tuner....

If during the process of assembling and installing the antenna you have any difficulty, send me an e'mail to: inforhc at enet dot cu, or VIA AIR MAIL to Arnie Coro Radio Havana Cuba, Havana, Cuba...

Now at the end of the show a short propagation update... The sunspots are back !!!

So expect better HF propagation conditions especially during local night time hours, and be aware of possible geomagnetic disturbances that may slightly spoil the somewhat better propagation conditions..



**Radio Habana Cuba**