



#### NEXT MEETING SUNDAY NOV. 10<sup>TH</sup>,

**NOV 2013** 

THE OFFICIAL NEWSPAPER OF THE YONKERS AMATEUR RADIO CLUB

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## **TURN BACK YOUR CLOCK**

MEETING LOCATION

**THE LOCATION, GRINTON** WILL LIBRARY, 1500 **CENTRAL PARK AVE** YONKERS NY---12 NOON THE FLYNN ROOM



JOIN RENEW THE **ARRL THRU THE** YARC, THE CLUB **GETS \$2.00 FOR EVERY RENEWAL AND \$15.00 FOR EVERY NEW MEMBERSHIP** FOR DETAILS **CONTACT WB2AUL** 



NEED HELP, **HELP STUDY ING FOR UP-GRADE. GET** IN TOUCH JOHN, WB2AUL,HE **MIGHT BE ABLE TO HELP YOU** 

**STUDY AND PASS YOUR EXAM. 914-969-**6548

# **YARC-MITTER**

TO QUOTE A FAMOUS OLD YARC TREASURER, ARMANDO COSENTINO, DUES IS DUE---ITS THAT TIME OF YEAR WHEN THE CLUB DUES ARE COLLECTED. PLEASE MAKE ARRANGEMENTS TO PAY YOUR DUES AT A CLUB MEETING, OR BY SENDING YOUR DUES IN TO THE CLUB AT.

- A YONKERS AMATEUR RADIO CLUB PO BOX 378 CENTUCK STATION.10710
- B GIL LUGO. K2YNY 33 TYNDALE PLACE YONKERS N.Y. 10701

PLEASE MAKE CHECKS PAYABLE TO THE YARC

**CLUB NETS** MONDAY-730PM-INFORMATION NET\ K2JJ MODERATOR—146.865— PL110.9 WEDNESDAY-800PM-TECHNICAL NET **WB2AUL MODERATOR---**146.865-PL110.9 THURSDAY-800PM-JUNIOR OPS NET **KF2FK MODERATOR** 146.865 PL110.9 SUNDAY---700PM-10 METER NET-28.456MHZ-USB-WB2AUL

## HAPPY THANKSGIVING



HELP, THERE AFTER ME-----



THE NEXT VE TESTING WILL BE HELD ON NOV  $3^{RD}$ ,

AT 830AM . PLEASE BRING TWO FORMS OF ID. ONE ID MUST BE A PICTURE ID. TESTING IS HELD AT THE 1ST PRECINCT ON EAST GRASSY SPRAIN ROAD IN YONKERS NY. FOR FURTHER INFO CONTACT AC2T AT 914-237-5589. IF YOU CAN HELP AS A VE ON SUNDAY,

## RETIRED GUYS/GALS LUNCH

THE NEXT MEETING OF THE RETIRED GUYS/GALS WILL BE HELD ON NOV.21ST THURSDAY AT MONT OLYMPOS RESTAURANT IN YONKERSITHE TIME IS 1200 PM NOON, YOU DO NOT HAVE TO BE RETIRED TO JOIN US EVERYONE IS WELCOME MEMBER OR NON MEMBER ALIKE IS INVITED. FURTHER INFO CONTACT WB2AUL @9 1 4-969-6548

## ARRL NOVEMBER Contest Calander

November

- 2-4 Nov. Sweepstakes CW
- 16-17 EME 50-1296 MHz-Round 2
- 16-18 Nov. Sweepstakes Phone

**VE"S WANTED.** IF YOU'RE A ARRL REGISTERED VE. PLEASE SEND A EMAIL TO <u>WB2AUL@AOL.COM</u>, SO WE CAN PUT TOGETHER A UPDATED LIST OF VES IN THE CLUB.

## HAM HUMOUR

A HAM NAMED ELMER LIVED WITH HIS XYL NAMED SUE.

WHILE AT THE QTH ONE NIGHT, SUE SUDDENLY WENT QRT. (DIED).

ELMER PICKED UP THE PHONE, AND CALLED 911 AND REPORTED THAT HIS WIFE HAD JUST DIED AND COULD SOMEONE COME OVER TO PICK HER UP.

THE OPERATOR ASKED FOR HIS ADDRESS AND ELMER SAID HE LIVED ON THE END OF EUCALYPTUS LANE...

THE 911 OPERATOR ASKED HIM TO SPELL THAT.

THERE WAS A LONG PAUSE ON THE END OF THE LINE AND THEN ELMER SAID.....

"HOW ABOUT I JUST DRAG HER OVER TO OAK STREET AND YOU MEET ME



CAN YOU HEAR ME NOW

**ARTICLES**----IF YOU HAVE ANY ARTICLES OR PICTURES YOU WOULD LIKE TO HAVE PUBLISHED IN THE YARC-MITTER,JUST SEND THEM TO WB2AUL@AOL.COM, AND WE WILL MAKE SURE THAT THEY ARE PUBLISHED

## PRESENTATIONS-----WILL

BE RETURNING TO THE MEETINGS, IF YOU HAVE SOMETHING YOUR INTERESTED IN AND WOULD LIKE TO SEE IT PRESENTED AT A MEETING OR IF YOU HAVE A PRESENTATION YOU WOULD LIKE TO GIVE AT A MEETING, LET WB2AUL KNOW AND HE WILL MAKE ARANGEMENTS TO HAVE IT.



## **THE** Build an All Band HF Air Core

1:1 Choke Balun

THE "UGLY BALUN"

#### Introduction.... 1<sup>ST</sup> PART OF 3 SERIES

A balun's purpose is to allow connecting a balanced, (e.g., a dipole or driven element) to an unbalancedline such as coax which is not balanced, thus the name, Balun. The 1:1 choke "balun" is not actually a balun. It's function is to help eliminate rf currents from flowing on the outside of coaxial cable using the principle of choke action. Another "name" for it is the air choke.

In transmitting antennas, this is accomplished by presenting a high impedance (resistance), to RF currents flowing outside the coax shield. This forces currents in each side of a driven elements to be equal. This is especially important in beam antennas because it prevents distortion of the beam's pattern caused by unequal currents in the driver(s). In a simple dipole, the balun (choke), assures that the dipole, and not the feed line, is doing the radiating!

When you connect center fed antennas, like dipoles, V's, triangles, yagis, rhombics, loops and so on, to coaxial cable, unless care is taken, it is not difficult to end up with feeder radiation. Not only can the loss in power be quite significant, but the radiation characteristics of the antenna system will also be seriously compromised. In laymen's terms, it won't be what you are expecting from the pattern of your antenna.

As the feedline becomes part of the antenna, currents can flow from the line into the mains and on TV cables, metal masts and yagi booms, causing a variety of EMI problems that can be very difficult to trace. Frequently these problems are simply due to unbalance - and the solution is the humble air choke.

If an antenna system is fed at center with a parallel conductor line (provided that correct installation procedures are followed) balance will be maintained, USING A BALUN, with currents in equal and opposite

#### phase canceling each other out.

When the connection is to a coaxial cable, WITHOUT A BALUN, this cannot occur because currents flowing inside the cable from the connection to the inner conductor are separated from those flowing on the outside from the connection to the shield, and the result is unbalance causing feeder radiation. However, if the two electrical circuit elements (antenna and coaxial cable) are coupled using a balan, balance will be maintained.

Enter.....The Ugly Balun!.....



This is the basic construction drawing for the 1:1 Choke Balun for 160 thru 10 meters using one continous length to the rig starting at the antenna attachment points. Depending on your use, coax connectors can be added or other connectors can be made for different types of antennas. Balun should be located AT the feed point of the antenna or very close. Drawing is not to scale and is only showing one method of winding the coax on a PVC form. The important part of the drawing is the 18 to 21 feet of coax close wound on the form. The number PVC FORM of coils is not important....just the length! Don't wind your coax tight enough to crush the internal insulation.

N4UJW

#### An Inexpensive, High-Performance, Ugly 50 ohm Balun "Building a no-grief 1.8MHz to 30MHz 50ohm-balun is easy.!"

"No costly ferrite-cores are needed, just a short length of 3 to 5 inch size plastic pipe, about 25 feet of 50ohm coax plus some nylon cable ties.

Solid-dielectric coax is best for this application because foam-dielectric has a tendency to allow a change in the conductor to conductor spacing over a period of time if it is bent into a tight circle. This can eventually result in voltage breakdown of the internal insulation.

The required length of the plastic pipe depends on the diameter and length of the coax used and the diameter of the pipe. For RG-213/U coax, about one foot of 5 inch size pipe is needed for a 1.8MHz to 30MHz balun. For 3.5MHz to 30MHz coverage, about 18 to 21 feet of coax is needed. This length of coax is also adequate for most applications on 1.8MHz.

18 to 21 feet should cover all of 160 through 10 meters. The number of turns is not critical because the inductance depends more on the length of the wire (coax) than on the number of turns, which will vary depending on the diameter of the plastic pipe that is used.

The coax is single-layer close-wound on the plastic pipe.

The first and last turns of the coax are secured to the plastic pipe with nylon cable ties passed through small holes drilled in the plastic pipe.

### The coil winding must not be placed against a conductor.

The name of this simple but effective device is a choke balun. NOTE: Some people build choke-baluns, without a plastic coil-form, by scramble-winding the coax into a coil and taping it together. The problem with scramble-winding is that the first and last turns of the coax may touch each other. This creates two complications. The distributedcapacitance of the balun is increased and the RF-lossy vinyl jacket of the coax is subjected to a high RF-voltage. The single-layer winding on the plastic coil-form construction method solves these problems since it divides the RF-voltage and capacitance evenly across each turn of the balun"....AG6K

Credit for this article goes to AG6K, Rick Measures and was edited from

# a Pre-copy version of another article titled "A BALANCED - BALANCED ANTENNA TUNER" published in QST, February, 1990.

Step by Step Sequence of building the "Ugly Balun" incorporated as a center insulator also using PVC by KC7AVA. (Sequence is from left to right and down page.)



4" PVC and RG213	Winding the 21' of coax	Securing coax with cable ties
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Connecting the coax to the	Taping the leads	Eye-bolt antenna terminals
SO239		installed





The KC7AVA Ugly Balun ready to go! See his entire construction article and his story of <u>"Getting Back on the Air" at the link here!</u>



#### Here is my version of an "Ugly Balun"

Made from PVC pipe with end caps and cable glands. Coax is RG8-X from DX-Engineering. Easily transferred between antennas because of the PL-259 connectors on each end. Ron - WB2RCB

Lots more "Ugly Balun" photos, ideas and installations sent in by users below!

Here are examples in the pictures below using cable ties on PVC pipe forms which work well also. Your choice! (Imagine the coil form is removed). Pictures are showing how to secure the coils together. Do not let the first and last coils touch!



Picture above courtesy of VE7AVV



Picture above courtesy of KC2NXV (now N4NYY) shows using 2 pvc couplers joined and glued using about 2 inches of 4 inch PVC pipe, so the couplers would adhere and be stronger.

More "Ugly Balun" ideas from DAVE THOMAS, M3RUH BELOW:



The Dave Thomas, MW3RUH BOTTLE SPECIAL!



Dave uses a plastic drink bottle as a form. He installs an S0-239 in the bottle cap and antenna connectors on the other end! NICE TIP DAVE!



Photos courtesy Bill, KI4PCB, using 4 " PVC FORM Notice the screw terminal block used for connections



KI4PCB "Ugly Balun" on the air!

# THIS IS THE FIRST PART OF A THREE PART SERIRS.