



Hamtrix

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The President's Shack

by Howard Smith,
WA9AXQ

I recently received a letter from The Foundation for Amateur Radio, Inc., announcing our 2008 Scholarship winner. Please congratulate Patrick Weeks, KB9ULT, from Racine, WI, our 44th scholarship winner. Our scholarship award is for \$1,500. Patrick is a 21-year-old student at Grove City College, Grove City, PA, majoring in Business Economics

and Finance. He expects to graduate this coming May. While he is currently inactive, he has participated in Field Day last summer as a mobile. He holds an Extra class license.

Our scholarship program is funded by donations of money and equipment to our club scholarship fund, and by our Midwinter Swapfest. The scholarship award is available to Wisconsin residents holding an Amateur Radio License and registered with a college, university, or technical school leading to an Associate or Bachelor degree.

The programs for the next several months have now been set, and you need

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Meetings & Events



August 12
Club Meeting
Program:

A Bigger Quad
by Dick Wood, W9JBE

August 26
Board Meeting

August 31
Material Due for Next
Hamtrix

September 9
Next Club Meeting

BALANCING ACT

By Tom Macon, K9BTQ

The program at our July meeting was "Show and Tell" but, unfortunately I missed that meeting. Thanks to Lynn, K9KR, who took pictures, I was able to get a glimpse of the items that were shown off. Of particular interest to me was two antenna tuners, one a very nice looking unit built by Ferd Wesolowski, K9OGZ, and the other a breadboard unit by Lynn, K9KR, - a promise of things to come.



AG6K tuner built by Ferd, K9OGZ

Ferd's tuner is based on an article by Richard Measures, AG6K, that appeared in February 1990 QST. Upon reading this article, I was struck by the fact that AG6K's objective and Lynn's objective are very similar - to come up with ideal tuner design for balanced antennas. The QST article by AG6K can be found on the ARRL website at www.arrl.org/members-only/tis/info/pdf/9002028.pdf. If you are not a League member, there is a somewhat different version of the article on AG6K's own

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From the Minutes...

By Lynn Tamblyn, K9KR
Secretary

**Minutes of the General Meeting
July 8, 2008**

The meeting was called to order at 7:36 PM by President Howard Smith.

New Member - by vote of the membership present, Sue Hamilton, W4LSD, became the latest WARAC member.

Minutes - the membership approved the minutes as printed in Hamtrix.

REPORTS

Membership Survey - George Dunco indicated that Tom Macon has sent out survey's to those that did not respond previously. George will be looking into making further contact, pending the outcome of the latest mailing.

Field Day - a brief report on FD 2008 was given. The wireless point to point tests from the stations to a server worked, however, there needs to be further testing under actual conditions while contacts are being made using the wireless logging concept. George Dunco's generator failed upon initial startup at the FD site. He has since found and corrected the problem - an AC breaker would not reset. See July 2008 Hamtrix for other FD comments.

Ten Year Membership - Phil Gural presented Mike, N9ESC, with his 10 year membership plaque, as Mike had missed the Awards Dinner presentations.

Program - "Show and Tell"

Program One - Dick Wood, W9JBE, showed his LVB Tracker. This is a device he got through AMSAT. It hooks to his rotator, and controls azimuth and elevation for his satellite antenna system. The box is used by connection to a computer, whence it actually turns the rotor based on the computer's program that is also tracking the satellite - OR - Dick can do the operations manually via the 4 buttons on the front of the box.

Program Two - Ferdinand Wesolowski, K9OGZ, showed a rather unique balanced line tuner he built, based

on a QST article.

Program Three - Howard Smith, WA9AXQ, showed his Vibroplex key that uses magnetic contacts, which was attached to his Picokeyer, designed by N0XAS, that included a pair of memories.

Program Four - Lynn Tamblyn, K9KR, talked about three items:

WIQP - he showed the membership the plaques he had just picked up for the three winners of 2008 WIQP - for the club competition; the highest scoring single operator within Wisconsin; and the highest scoring single operator outside of Wisconsin.

Ferd's tuner - he talked a bit about the tuner suggesting to the members that they should look at it before leaving the meeting, because this was a rather unique tuner that they might never see again.

K9KR tuner - Lynn then talked about the current progress on his homebrew single coil Z match tuner.

The meeting was adjourned at 8:50 PM, followed by refreshments and eyeball QSO's.

Respectfully submitted,
Lynn Tamblyn, K9KR

**Minutes of the Board Meeting
July 22, 2008**

The meeting was called to order at 7:30 PM by Howard Smith. Board members present: Wes Andersen, George Dunco, Howard Smith, Lynn Tamblyn, and Dick Wood.

Scholarship Winner - Howard read a letter from Foundation for Amateur Radio (FAR), who are the people that do the selection of the person whom we award our annual WARAC Scholarship to. For 2008, our recipient is going to be Patrick Weeks, KB9ULT, from Racine. Tom Macon will be contacting Patrick when Tom returns from vacation later this month. There should also be an article in Hamtrix.

WI QSO Party - Lynn discussed a situation with the Board, with no action taken.

Survey Committee Report - George reported for the

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2007 WARAC Officers and Board			Hamtrix — Editor & Publisher	
President	J. Howard Smith, WA9AXQ	414 425-5626	Submit newsletter material to: Tom Macon, K9BTQ 3547 S. 95 St Milwaukee, WI 53228 414 543-3878 tmacon@wi.rr.com ■■■■	
Vice President	Thomas W. Macon, K9BTQ	414 543-3878		
Secretary	Lynn C. Tamblyn, K9KR	262 534-9655		
Treasurer	Richard M. Wood, W9JBE	262 542-5118		
Director (2008)	Robert F Zach, KC9AGX	414 328-3691		
Director (2009)	George Dunco, AA9SR	262.782-6325		
Director (1 year)	Wes Andersen, N9YE	414.423.0640		
Board Chairperson	J. Howard Smith, WA9AXQ	414 425-5626		

2008 SCHOLARSHIP WINNER

Dear Tom Macon, K9BTQ and West Allis Radio Amateur Club,

Thank you very much for contacting me! I am very thankful for the generous scholarship and the work of WARAC. I feel honored and lucky to join the previous 43 recipients of WARAC's scholarship program. I am sure I join a long line of promising young amateurs. I have been a ham since 1999, when I was only 12 years old. Starting out as a Novice, I soon became a General and Advanced, under the old system I'm sure you know well. Now, like my brother KB9ULU and father AA9XD, I am an Extra.

My favorite aspect of amateur radio is the community service aspect. In a world saturated by various and sundry forms of electronic communication, our expertise, reliability, and professional yet decentralized worldwide network sets ham radio apart. I have enjoyed practicing for disaster scenarios, which I fortunately have not yet experienced first-hand, as well as assisting each year with Racine County's large triathlon event. In addition, I would have to say I enjoy climbing on the roof with my father to monkey with antennas far above our heads until dusk makes it too dark to see.



Apart from amateur radio, I am a senior at Grove City College in Pennsylvania, studying Business Economics and Finance. I am a Dean's list student and the president of the Financial Management Association. I am captain of multiple intramural sports teams and I debate on the nationally ranked parliamentary debate team. Next summer I will graduate, marry my beautiful fiancé Nikki and after a season of semi-pro baseball head to boot camp for the Marine Corps in October.

While I am living here in Brooklyn this summer, I have been a little out of the loop regarding ham radio at home, especially regarding the flooding disaster earlier this summer.

Thanks so much again and God bless your work,

Patrick Weeks, KB9ULT

Ham Happenings

Around the area

Wisconsin Amateur Radio Club

formerly Menomonee Falls Radio Club

Germantown Police Dept
N112W16877 Mequon Rd
Wed, August 27, 7:30PM

Milwaukee Radio Amateur Club (MRAC)

Redemption Lutheran Church
Hwy 100 & Capitol
Thurs, August 28, 7:00PM

Ozaukee Radio Club

Grafton Senior Center
1665 7th. Ave.
Wed, August 13, 7:30PM

CQ3TUE

Old Country Buffet
16750 W Bluemound Rd
Tues. August 19, 11:15AM

South Milwaukee Amateur Radio Club

Wed. September 3, 7:00PM
Legion Post 434
Shepard Ave
Oak Creek, WI.

Amateur Radio Testing

Saturday, September 27
9:30AM
Amateur Electronic Supply
5720 W. Good Hope Rd

NOTE

Please do not contact meeting places for information.

Upcoming Meeting Programs

August 12

A Bigger Quad

by Dick Wood, W9JBE

September 9

Weather Topics

by Michael Falk, AA9RK
Meteorologist

October 14

Digital TV

by Dave Schank,
KA9WXN

Have an idea for a program?
Something you'd like to hear
about?

Let us know - Contact a
Board member!

Scuttlebutt...

- Tickets anyone? I have four tickets for Radio Expo 2008 Swapfest, Sept 13th and 14th in Belvidere, IL. This is the swapfest that replaced the old Grayslake event. I have found out that I can't make it nor can the rest of the gang that normally goes. Make an offer for one or all four tickets. Face value is \$10 at the gate. See me at the August club meeting. - *Phil Gural, W9NAW*.
- Congratulations and a WARAC Welcome to new member Sue Hamilton, W4LSD. Sue's dad is long time club member Ken Rogers, W9NUE.
- Jackie, KC9MJO, was traveling in July so he was unable to show off his home-brew antenna tuner at the July Show and Tell. He has promised to bring it to the August meeting.
- A restored Fairchild PT-26A belonging to the Wisconsin Wing of the Commemorative Air Force was judged Best Primary Trainer at the recent EAA AirVenture in Oshkosh. John Westmayer, N9LGD is a member of this wing and did three days of booth duty in Oshkosh showing off the airplane.

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THE REST OF THE STORY...

By Phil Gural, W9NAW

Several weeks ago I was looking through some old QSL's from the time I operated as K2PCG. One that really caught my interest was from Mike, K2DZM in Rahway, NJ. I put it aside with the intent of checking QRZ.com to see if Mike was still operating.

This past Sunday, August 3rd, 6-meter DX was coming in along with a lot of stations from the East Coast. Some of the stations at the low edge were 30-40 over S9. As I tuned higher, I heard "Delta Zulu Mike" I stayed on frequency to find the complete call of the DZM station. Sure enough, it was K2DZM! Now I was excited and called him asking if this was the original Mike at the mike.

K2DZM came back and told me that he was the original Mike who owned this call for over 60 years. Mike was wondering who was asking and I told him that I had some QSO's with him using the call of K2PCG. He then realized who I was and we

started to talk about the good old days. After exchanging information about our rigs and antennas, he told me that he was still living in the same house. He also told me that he was close to 90 years old but still having fun on VHF.

Due to heavy QRM we decided to end the QSO but, before we did, I told him that I was still in contact with a few others that lived in my old area around Livingston, NJ and that I was trying to get a schedule going with them.

So why such interest in K2DZM? Back on March 25, 1960, K2DZM and K2PCG made the first ever SSB to SSB QSO on 220 MHz. This accomplishment was even mentioned in *QST* in the "The World Above 50 MHz" column and was never challenged.

As they say, now you know "the rest of the story".

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Thanks!



Thanks and a tip of the editor's hat to the following contributors to this month's issue of **Hamtrix**

Phil Gural, W9NAW



Write an Article
This means
You!
Please??

Balancing Act

(Continued from page 1)

web site at www.somis.org/bbat.html.

First, let's take a look at the basics. Most discussion of transmission lines, especially for center-fed horizontal wire antennas, assume that the transmission line conductors carry equal and opposite currents. When this is true, the antenna system (feedline and antenna together) is considered balanced. In reality this is often not the case, resulting in an unbalanced condition.

Imbalance usually results from two factors. One is a lack of symmetry of the installation, for example, when the feedline is not exactly perpendicular to the antenna itself. Another is the use of coaxial feedline, which is inherently imbalanced because one conductor is shielded by the other. Open wire (twin-lead) feedline, on the other hand, has two identical conductors so is inherently balanced.

Is this imbalance something to worry about? Often it's not a big deal, especially on relatively simple antennas like dipoles. There are zillions of unbalanced antennas in use and most of them work just fine. But it can cause some problems.

When the currents in the feedline conductors are not equal and opposite, the difference is called a "common mode" current. This current must find its way to ground somehow, usually through the grounding system in your station. If you don't have a good RF ground at the frequency you're operating on, this will cause your radio to "bite".

Another effect of imbalance is a change in the antenna's impedance along with errors in SWR readings. Normally these effects are small but in extreme cases they could be significant.

Imbalance will also affect your antenna's radiation pattern. Again, on simpler wire antennas, the effect is usually not very significant but directional antennas can be a different story. Significant changes to forward gain and front-to-back ratio can result.

For resonant antennas, imbalance can be greatly reduced by installing a *balun* device. The term *balun* is a contraction of "*balanced-unbalanced*". When using coax, the balun is normally installed at the point where the feedline connects to the antenna. If not, the feedline between the balun and the antenna needs to be a balanced type, such as open wire. The G5RV antenna is a good example of this.

For a long time, a non-resonant, center-fed wire with open wire feeders has been considered to be an excellent all-HF-band antenna and this is still true today. But this type of antenna requires a tuner to reduce the SWR to a level that your radio will tolerate. Besides matching the

impedance of the feedline to the your radio, the tuner needs to also provide the function of a balun - to convert the unbalanced coaxial output of the radio to a balanced configuration for the open wire feedline.

So Ferd, in choosing the AG6K design, and Lynn have the same quest - to come up with a high efficiency antenna tuner that can match a wide range of impedances and also has a well-balanced output.

In a nutshell, AG6K's article makes the point that the balanced output of most commercially available antenna tuners is not well balanced under many operating conditions. A major reason for this is that these tuners are basically unbalanced designs with a balun stuck on the output to provide a balanced output. The poor balanced performance is largely due to the shortcomings of baluns in general and of ferrite baluns used at high impedance levels in particular.

He goes on to argue that a better approach is to put the balun on the input side of the tuner (where it will not see high impedances), and to use a truly balanced double L

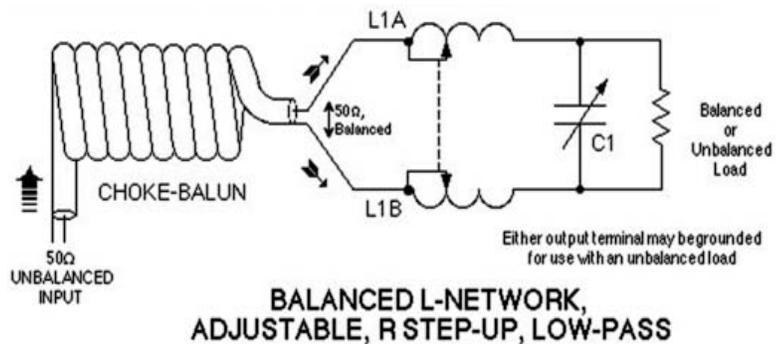


Figure 1 –Simplified schematic of AG6K tuner

configuration for the tuning components. See the simplified schematic in Figure 1 (stolen from AG6K's web site).

AG6K uses a simple, cheap but effective 1:1 choke balun in his design. Capable of handling high power, his design uses a foot-long, five-inch diameter piece of plastic pipe wound with about 20 feet of RG8-type coax. The downside is that, by his own admission, it's big and ugly.

Alternatively, he goes on to say, one could use a 1:1 trifilar-wound ferrite balun to do the job. This would be more compact at the possible expense of some performance.

So, is the improvement in efficiency and output balance worth the bother of building your own tuner? Is there a better location for the tuner - how about putting it at the antenna feedpoint? What do you think? Stay "tuned" for further articles and meeting programs on the topic of antenna tuners.



August 8 - Bob Scrip, WD9ANV
 August 18 - Jim Choroszy, NQ9X
 September 2 - Mike Falk, AA9RK
 September 7 - Ken Rogers, W9NUE
 September 7 - Dick Schank, WA9AKV



**2008 WIQP
 Results
 Available Now!**

*Wedding
 Anniversaries*

< None to Report >

President's Shack
 (Continued from page 1)

to be sure to be at these meetings. The August meeting features Dick, W9JBE, who will talk about his "Monster Quad" antenna on which he is installing the final set of elements.

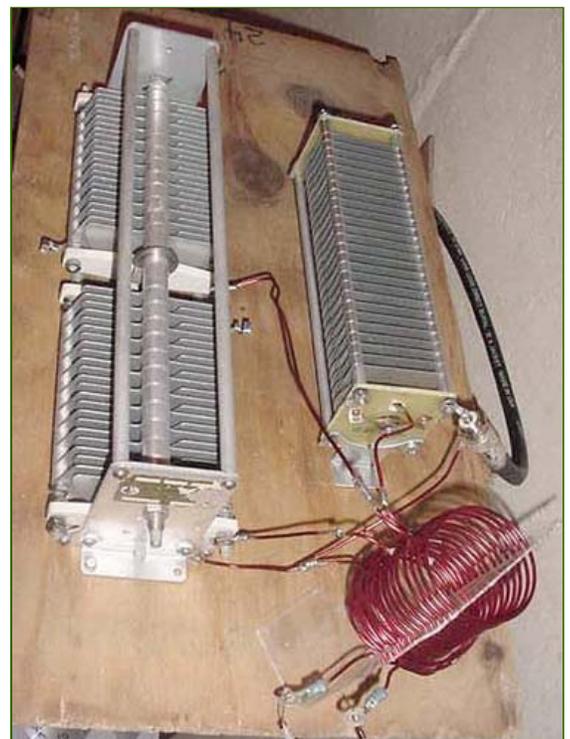
The September meeting features Mike Falk, AA9RK. While Mike is changing his career to being a high school math teacher, he will be talking about Weather that night.

Finally, for the October meeting, Dave Schank will present on the conversion to Digital TV, which will happen on February 17th, 2009. And, don't forget that the October meeting is the annual Club Elections. I think our fall lineup is pretty good. I hope to see you at each of these meetings.

The other event that is on the horizon is the Annual Awards Dinner, which is typically on a Sunday sometime in October.

See you at the meeting.

73,
 Howard Smith, WA9AXQ



Lynn's prototype tuner at July Show & Tell. It's based on a Z-match design.

Minutes
 (Continued from page 2)

Committee. They had received two additional responses at the last club meeting. There was nothing in those two that would change the initial results that the Board discussed last month. George will be checking with Tom when he returns.

Club Books Audit - Dick and Lynn need to get together to discuss the report layouts, which is to be followed by the Committee being scheduled to do the 2006 audit.

Programs - the August 12 program will be a presentation by Dick Wood, who is in the process of installing

two more elements onto his present two-element Gem Quad. Dick is hoping to get it done by the August club meeting. The September program will be a presentation on Weather, by Mike Falk. The October program is tentatively set to be on Digital Television.

Club Repeater - there was some generalized discussion on the various items associated with the club repeater.

The meeting was adjourned at 8:20 PM.

Respectfully submitted,
 Lynn Tamblyn, K9KR
