



# The Tickler

## *From the Prez.....*

Hi everyone. I hope you all are enjoying your summer.

Norm W8TTTH and I certainly are having a busy, but great summer. We just got back from another weekend trip up to the Upper Peninsula with the motorcycles for the Junior Diabetes Fund Raiser Motorcycle Ride which is better known as the Midnight Ride on August 23rd. It was a good time. Most bikers leave Grand Rapids at midnight on the 3<sup>rd</sup> Friday of the month of August and ride all night up to St. Ignace. Our group always goes up on Thursday or Friday during the day. Norm left with the group on Thursday morning and I rode up with a group on Friday. This year the rides on both days were wet. Norm drove in a lot more rain than I did, but it still makes for a long ride. Our ride back home on Sunday was a little cold and just a few sprinkles, but we made it home in record time as Norm was the leader. The week before we were up north at The Buckley Old Engine Show grounds. We became members of this club earlier this year and have been spending a lot of time there helping prepare for their show. It was fun the week of the show, but it was a lot of work. Norm ran around with his welder most of the week, but he did get to drive a 1962 Dodge Fire truck around the grounds when he wasn't busy fixing things. He enjoyed himself while driving this truck, because we have a truck like it setting at our place waiting to be restored. I spent time working in the Sound Booth helping make announcements and giving out the member materials, etc. I was ready to come home when that week was over. I needed to go back to work to rest up for the motorcycle trip.

Next month we have two hamfests. The Findlay hamfest will be on September 13<sup>th</sup> and of course ours will be the following Sunday, September 20<sup>th</sup>. Marjie KB8TMM will have more information at the meeting this month. **This month's meeting will start at 7 p.m. instead of 7:30 p.m.,** since it will be an outdoor meeting. It is time again for our Annual Ice Cream Social Meeting. Once again thanks to the hospitality of Judy WD8LCH and Ted K8AQM it will be held at their home located at 1600 Wolf Creek Highway in Adrian, MI. Please bring your lawn chairs, bowls, spoons, and favorite ice cream toppings to the event. Also, please thank them for sharing their home with us.

Don't forget to check out the website at [www.w8tqe.com](http://www.w8tqe.com) and get any new information and pictures to Bob K2IBM. He is our web master and we need to support him and the club by sharing things through the website. Also, don't forget our newsletter editor, Ted K8AQM. He also needs our support by giving him articles and pictures. They both do a great job for all of us.

The meeting this month will be August 31<sup>st</sup>, I hope to see you all there.

73,s

Ginny W8TTX

**The August Ice Cream Social meeting will start one half hour earlier than normal. The fun begins at 7:00 PM rather than 7:30. Don't forget your lawn chair, bowl, spoon and favorite topping!**

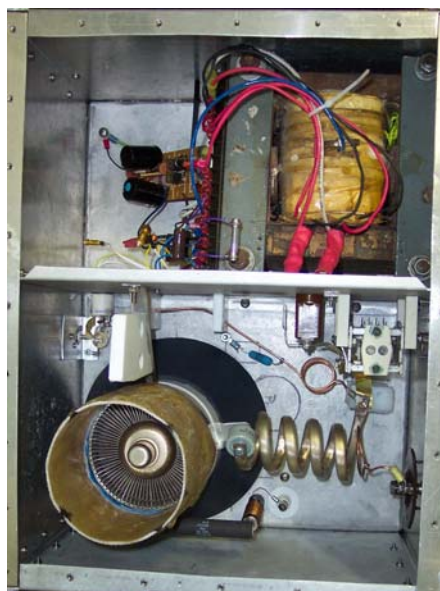
## What To Do With A 3CX3000 Tube!



What do you do with an “extra” tube that will coast along at 1500 watts? Well, if you’re N8CC you build yourself another amplifier of course! And who couldn’t use a single band and almost 99% no-tune amplifier! After building incredible antennas for 160m-10m Jeff decided he needed a “good” 6m antenna. Seven elements at 100+ feet and fed with at least two inch Andrews Heliax does constitute a “good” six meter antenna ... at least in my mind.

After working 43 countries including Japan with 80 watts Jeff decided he needed more power and since he had a 3CX300 tube around and the parts for a medium power supply, why not build an amplifier for six meters! The result is the “homebrew” amplifier you see here in these pictures.

Using pretty much the parts and materials on hand Jeff was able to put together an amplifier that delivers 1500 watts on six meters with about the 80 watts of drive his Omni VII delivers. As you can see in the picture part of the cabinet is made of wood. Jeff had the tube but had to construct his own socket which was resolved by mounting the tube directly on the chassis. The tuning circuit is so broad that Jeff tunes in one place and the entire band of six meters is covered without retuning!



Jeff says the amplifier is a breeze to tune and operates flawlessly. His next improvement to this amplifier is to build a bigger power supply so the amplifier will reach full output with less drive. Less drive means less strain on the Omni VII and great efficiency of the 3CX3000.

I talked to Jeff recently and his goal of course is to work 100 countries on six meters but, he has been listening to stations on six meters who have been bouncing their signals off the moon. Jeff said he won’t be satisfied with his six meter station until he can bounce his own signal off the moon and hear himself. With this amplifier Jeff is on the way to achieving his goal and I suspect bigger antennas will soon be in the picture too.

Go get ‘em Jeff!



## AARC Club Gossip! .....

### *Did you know that...*

...W8TTH has been showing up on the 10m ssb nets lately?  
 ...K8UV is working on a 30m beam?  
 ...K8RW only runs 1 watt to his SDR rig?  
 ...K8GX has "Gremlins" in his shack?  
 ...K8ADM has footswitch "issues"?  
 ...Museum Ships weekend 2010 is June 5-6?  
 ...K8AQM had a crane in to help with his log periodic repair?  
 ...K8UV will be putting up a 17m ZL Special?  
 ...WE8Z has helped secure an operating sight for the "Fitzgerald" crew?  
 ...K8AA is wondering why he has had no trouble with his Force 12 antenna? Lucky guy!  
 ...There will be a web site for the Fitzgerald and the Boyer this year?  
 ...You haven't many more good days for antenna work?  
 ...K8KIC is waiting until very cold weather to do his antenna work?  
 ...N8FLC's UHF/VHF equipment is now at the club?  
 ...Bids for the club's old generator are due before the August meeting?  
 ...N8AMM has ordered new QSLs? ... I want one!  
 ...KG8CO is still working on his TH-11?  
 ...K8ADM has installed a new vertical to add to his antenna farm?  
 ...N8BKY needs work on his 160m quarter wave sloper?  
 ...K8KIC has a new headset and boom mic on his TS-480 thanks to K8NP?  
 ...K8NP has a new headset and boom mic?  
 ...K8AQM bought a TS-570 SG to get on six meters?  
 ...N8QEW hasn't joined the "bug" crew with his new bug yet?  
 ...WE8Z, K8NP and K8KIC are still exchanging quarters in their euchre games?

## AARC Club Minutes

The Adrian Amateur Radio Club board met at the CAP building on July 27, 2009. The meeting was called to order by president Ginny W8TTX at 7:00 PM with the following persons present: Ginny W8TTX, Marge KB8TTM, Larry W8LNR, Dick K8GX, Norm W8TTH and Bill KA8ARK. The board discussed the upcoming Hamfest scheduled for September 20th and the Ice cream social at the August meeting. We were reminded that the annual dues are due. Meeting adjourned at 7:30 PM.

The Adrian Amateur radio club met at the CAP building at the Lenawee County Airport. The meeting was called to order at 7:00 PM by President Ginny W8TTX, with 22 persons present. The Minutes as published in the Tickler were approved upon a motion by Norm W8TTH second Ritch K8UV. The treasurer's report submitted by Mark NU8Z showed a balance of \$3,788.82 and was approved upon a motion by Norm N8TTH second by Dick K8GX. Mark NU8Z motioned that we make the club generator, which hasn't been used for a long time and is in very poor condition (not runnable now) available for sale with a minimum price of \$100. Bids are to be in by the next club meeting. Denny seconded and the motion passed. President Ginny W8TTX reported that the club has been named in the will of Bob Ingersol N8FLC. details are not available yet. The meeting adjourned at 8:00 PM. Bill KA8ARK Secretary.



## Working With Big Antennas

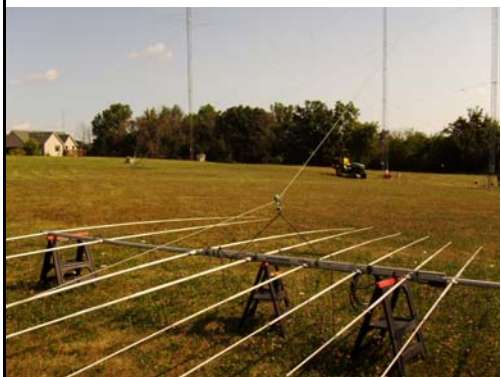
KG8CO has a Hygain TH-11 DX antenna and it's a monster! Brian has it at 70 feet and it has been giving him trouble lately. So how does one work on an antenna this big? Experience has taught Brian that using a "tram line" to raise and lower big antennas is the cheapest and a very satisfactory way of raising and lowering big antennas. The idea is that a long 1/4 inch steel guy wire is attached at the tower top and secured at the ground level, usually with a car or truck. A pulley and hook system are used for the antenna to ride down and up the guy wire. With rope and a couple of stout guys, most big antennas can be raised or lowered very easily.



The lower left picture shows how the steel guy wire is attached to the antenna and pulley. The top of the guy wire is attached to the mast above where the antenna is attached to the mast.

Brian has raised and lowered several antennas in this manner and with the help of a few friends the system is safe and easy to do.

Cranes are great but extremely expensive. Issues of "lawn repair" and access are always considered when cranes are involved.



## HPSDR

HPSDR stands for "High performance Software Defined Radio". From the HPSPDR web site (<http://openhpsdr.org/>) "The HPSPDR is an open source hardware and software project ..... It is being designed and developed by a group of SDR (Software Defined Radio) enthusiasts with representation from interested experimenters worldwide."

The HPSPDR group works with a group that attempts to advance the radio art called TAPR (Tucson Amateur Packet Radio) (<http://www.tapr.org/>). The TAPR group supplies the resources to allow the circuit boards created by the HPSPDR group to be built and disseminated in small and limited quantities.

The HPSPDR radio has a motherboard referred to as Atlas into which the other boards are placed. The system is presently connected to the PC by way of a USB 2 board which is referred to as OZY. The OZY board is likely to be upgraded in the near future to OZY 2 which will use an Ethernet interface with the PC. There are various other boards (such as a spectrum analyzer board) in progress by the group, but I will mainly discuss the receiver and transmitter boards below, which also plug into Atlas. The motherboard, USB board, receiver board, transmitter board, and a computer power supply form the basis of a minimal transceiver. See the Figure next page.



There is a nice enclosure available referred to as Pandora, that I will probably invest in, rather than a breadboard, in the future.

The receiver board for HPSDR is referred to as Mercury. The RF analog signal from the antenna is amplified by a preamp and then directly converted into a digital signal using a high speed ADC (analog to Digital converter), without any down conversion of the frequency first. The analog RF is sampled at 130MSPS (Million Samples Per Second) and converted to 16 bit digital data in an ADC (Analog to Digital Converter). The digital data then undergoes Digital Down Conversion (DDC) to 250 kSPS or less in a FPGA (Field Programmable Gate Array). This data is then transferred to a PC by way of the USB interface for processing. The receiver (and

transmitter) operates over the 0 to 65MHz spectrum.

The HPSDR transmitter board is referred to as Penelope. Penelope uses DUC (Direct Up Conversion). The PC is used to generate the I and Q signals which are sent to the Penelope board by way of the USB interface. A FPGA (Field Programmable Gate Array) is used to generate a 122.88 MHz digital data output stream that goes to a 14 bit DAC (Digital to Analog converter). The analog signal is filtered and then amplified to generate a ½ watt RF output signal. Not much power, but a 20 watt amplifier (referred to as Pennywhistle) is in the works, at which point the output could be connected to a linear amplifier to create a big signal.

How well does all of this work. Well the receiver seems to do remarkably well. My point of comparison is very limited, however, since my other receiver is a Kenwood TS140. I have not put the ½ watt transmitter on the air yet, but hope to put it in use and see if any of my friends and hear me in the near future. My main interest is in the software for this type of system, but I can see that even though I have had a lot of software experience there is going to be a steep learning curve for SDR. Eventually I hope to use HPSDR, along with a linear amplifier as my primary transceiver.

So why mess with HPSDR rather than a completed ready to use system such as a Flex Radio? For me the advantage is that everything is experimental! If you want a SDR that is ready to use out of the box consider something like a Flex Radio. If you want to get more involved in the radio revolution that is happening with SDR then this may be a good place to get your feet wet all the way up to your neck.... **de KR8W**

### 2009 Michigan QSO Party Club Competition

Club Name	Score	Entries
Adrian Amateur Radio Club	859,383	8
Blossomland Amateur Radio Assn	325,532	9
Eastern MI Amateur Radio Club	284,041	3

The second place MI club last year jumped to the top this time - and it was former club winner the **Adrian ARC**. Adrian put together eight scores (second only to Blossomland and YCCC in terms of the number of entries) including the #1 multi-multi and #3 single-op high-power scores for **859,383 points**. Adrian is the club which holds the record for in-state clubs at 1,063,028 which they set in 2004.

The second place club, the Blossomland ARA, jumped into second place from their fourth place finish in 2008 by increasing their score almost 10% to **325,532 points**, but still had to settle for second place behind Adrian. The Blossomland score was helped mightily by the #1 single-op high power (N8SS) and #4 multi-single scores (KX8D). Most of Blossomland's scores come from the southwest part of the state, but they also benefit from far flung alumni such as N8SS (in WAYN) and KX8D (in PRES).

Reprising their third place finish from 2008 was the Eastern Michigan Amateur Radio Club with 284,041 **points**. The EMARC total benefited from the #1 multi-single and #1 QRP single-op entries. They finished with more than a 120K lead over the fourth place club.

## President

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The Tickler is the official paper of the Adrian Amateur Radio Club in Adrian, MI. It is printed monthly and is distributed to members of the club, local disaster officials, local electronic outlets and other editors of ham radio newsletters. Articles about activities of members are solicited. Permission is granted to any other publication to reprint items appearing here, provided complete source credit is copied including previous print source. The club owns and operates repeaters W8TQE on 145.370, - 85.4 PL or 537 from your touch tone pad and 444.675, 123 pl.

### Local Area 2 Meter Net and 10 Meter Chats

Sunday 9:00 p.m. The ARES Net on 145.370 - Ken, K8KIC -Net Control  
Tuesday 10 Meter CW Local Chat at 8:00 p.m. on 28.050 +/- QRM  
Tuesday and Thursday 10 Meter Local Chat 9:00 p.m. on 28.328 +/-QRM

### Local Area Repeaters

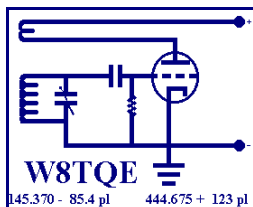
W8TQE 145.370 - 85.4 pl Adrian, Michigan  
W8TQE 444.675 + 123 pl Adrian, Michigan  
K8ADM 443.375 + 107.2 pl Adrian, Michigan  
W8TQE has access to Echo Link

### Adrian ARC 32th Annual Hamfest and Computer Show

September 20, 2009  
Hamfest Chair Ray, W8RAY Marge, KB8TMM

### AARC Web Page and E-mail Reflector

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**First Class**