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# WAVELENGTH

Official bulletin of  
Scarborough Amateur Radio Club, Inc.  
[www.ve3we.org](http://www.ve3we.org)

PARTICIPATE – LEARN – ENJOY

June, 2009

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## SARC Nets

28.730 Mhz  
CW 10:00 AM  
SSB 10:30 AM  
147.060 MHz (VE3RPT)  
7:30 PM  
Alternate frequency  
146.520 MHz simplex  
28.730 MHz  
SSB 7:00 PM

Everyone is invited to check in on CW before the nets start.

These are open nets. All licensed hams are welcome. Come and join us.

We also want to emphasize that 28.730 MHz is our calling frequency. Please monitor and/or call your friends. 7:00 PM is a good time.

# A Tale of Two Tubes

By Dan Romanchik, KB6NU

A couple of weeks ago, I worked N4QR on 40m CW. I could tell by the tone of his signal that he was operating a homebrew transmitter. There wasn't any 60 Hz on his signal, and it didn't chirp exactly, but I could tell it wasn't the pure tone you get out of today's radios.

I asked him about his rig, and he told me that it was a one-tube transmitter made with a 6L6. I forgot to ask him where he got the schematic, but a quick Internet search turned up the following:

- The May 2005 issue of the K9YA Telegraph (<http://www.k9ya.org>) has an article written by N4QR titled, "The Wonderful One-Tuber," that contains the schematic for the transmitter. The K9YA folks don't make issues of The Telegraph available on their website, but I was able to get a copy of the issue by e-mailing them.
- A 6L6 Classic (<http://www.io.com/~nielw/6l6/6L6.htm>)
- WB2MIC 6L6 Transmitter Project ([http://www.metaphoria.us/hamradio/6L6\\_transmitter\\_schematic.htm](http://www.metaphoria.us/hamradio/6L6_transmitter_schematic.htm))

The 6L6 is a pentode that, according to Wikipedia (<http://en.wikipedia.org/wiki/6L6>), was introduced by the Radio Corporation of America (RCA) in July 1936. Apparently, it was used quite a bit in public address systems.

After the tube became successful, tube manufacturers introduced a number of variations, including the venerable 807. The original 6L6 was capable of delivering 19 W; the latest variation, the 6L6GC is rated for 30 W. The 6L6GC is still used in guitar amps, and is still manufactured in Russia, China, and by Groove Tubes ([www.groovetubes.com](http://www.groovetubes.com)) in the U.S. They sell a number of different 6L6 variants; the cheapest is \$16, the most expensive \$180!!

## Tube #2

One of the reasons I was interested in the 6L6 is because about a year ago I came across a schematic for a transmitter using 6A6 dual triode. I had just come into possession of a couple hundred tubes, and while I didn't have a 6A6 (at least I haven't found one yet), I do have a couple of 6J6 dual triodes. They're not quite as high power as the 6A6, but I'm still thinking about building a little transmitter with one.

As you might expect, there's a bunch of information on the Internet about this tube:

The Jones Push-Pull Transmitter ([http://wv7g.home.mindspring.com/jones\\_6j6.html](http://wv7g.home.mindspring.com/jones_6j6.html)) was built with a 6J6 instead of a 6A6.

Another schematic can be found on the AK0B website (<http://www.qsl.net/ak0b/>).

6J6 data sheet (<http://www.gargnas.net:3000/tubedata/6J6.pdf>) from the GE data book.

One interesting fact about the 6J6 is that IBM used it in the 604 computer. Unfortunately, they found it to be not as reliable as they wanted it to be, but at first none of the tube manufacturers were interested in making a more robust version. This led IBM to set up a tube-making laboratory where they could experiment with designs. They developed a more reliable version of the 6J6 and finally convinced RCA to manufacture the tube. According to the author of the history of the 604 (<http://ed-thelen.org/comp-hist/IBM-604.html#new>), part of the concern is that IBM would decide to get into the tube business.

So, the next time you hear a signal that doesn't sound so perfect, remember that there just might be a story behind it. Ask the op about his transmitter, and listen to what he or she has to say.

*When not pondering the mysteries of vacuum tube part numbers, KB6NU teaches ham classes, works CW on the HF bands, and blogs about ham radio at <http://www.kb6nu.com>.*

# DX News

DX Bulletin 24 ARLD024  
From ARRL Headquarters  
Newington CT June 18, 2009  
To all radio amateurs

This week's bulletin was made possible with information provided by K1SFA, NC1L, RX9WN, VE1RSM, the OPDX Bulletin, DXNL, 425 DX News, The Daily DX, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

MALTA, 9H. Giorgio, IV3EPO will be QRV as 9H3EP from June 23 to 29. Activity will be on 40, 30, 20, 15 and 10 meters using mostly CW. QSL to home call.

PHILIPPINES, DU. Gerard, F2JD is QRV as DU1/G0SHN and is here for about five months. He plans to be active from various islands while here. QSL via F6AJA.

ST. BARTHELEMY, FJ. Conny is QRV as FJ/DL1DA and has been active on 20 and 17 meters using CW around 1900 to 2000z. QSL via DL1DA.

LIECHTENSTEIN, HB0. Tina, DL5YL and Fred, DL5YM will be QRV as HB0/home calls from Masescha from June 20 to July 2. Activity will be at various times on all HF bands using CW and possibly RTTY. QSL to home calls.

MONGOLIA, JT. Giampiero, I5NOC is QRV as JT1NOC until June 29. Activity is on 80 to 6 meters using CW and SSB. QSL to home call.

MARIANA ISLANDS, KH0. Tony, JA6CNL is QRV as KH0N from Saipan, IOTA OC-086, until June 23. This includes an entry in the All-Asian DX contest. Outside the contest, he is active mostly on 80, 30, 17 and 12 meters using CW. QSL to home call.

NORWAY, LA. Special event callsign LJ2T is QRV until June 28 in conjunction with the International Museums weekend. Activity is on 160 to 2 meters using CW, SSB, AM, FM and various digital modes. QSL via LA5EAA.

NETHERLANDS, PA. Members of VERON section 54 are QRV as PH100EL until July 12 to celebrate the 100th anniversary of the first flight of the aviation pioneer Charles count de Lambert. QSL via PD0PVQ.

AUSTRIA, OE. Operators from the Technical Museum Vienna are QRV as OE100TMW during its 100th anniversary until June 21. Activity is on all HF bands, including VHF. QSL via operators' instructions.

SWEDEN, SM. Jorgen, SM3CXS is QRV as SG3U from Grimskar Island, IOTA EU-176, until June 21. Activity is on 40 to 6 meters using CW and SSB in his spare time. QSL to home call.

POLAND, SP. Operators from the Long Distance Radio Communications Club of Poland are QRV as SP5DXC until June 30 to mark 50 years of the SP DX Club. QSL via bureau.

GREECE, SV. Dago, DJ5KZ is QRV as SV8/home call from Lesvos Island, IOTA EU-049, until June 30. QSL to home call.

SAN MARINO, T7. Operators Filippo, IK4ZHH, Giorgio, IZ4AKS, Max, IZ4DPV, Michele, IZ4GWE, Stefano, IW2MJQ and Vittorio, I4YSS will be QRV as T70A on June 20 and 21. Activity will be mostly on 6 meters from three different locations. QSL via bureau.

REPUBLIC OF THE CONGO, TN. Nicolas is QRV as TN5SN and has been active on 6 meters and on RTTY on 20 meters around 2100z. QSL via IZ1BZV and LoTW.

ASIATIC RUSSIA, UA9. Alik, RX9WN is QRV as RX9WN/0/m until June 21 from Kharancy Island. This is a new IOTA. QSL via operator's instructions.

SERBIA, YT. Various Serbian stations are using special prefixes YU2009, YT2009, YU09, YT09, YT25 and YU25 until July 12 to promote the University Games 2009 taking place in Serbia. QSL via operators' instructions.

CALLSIGN CORRECTION. As reported in DX news ARLD023, Bob, VE1RSM is QRV as home call/VY1 from Whitehorse, Yukon Territory until August 17. Activity is on all HF bands, particularly 40, 30 and 20 meters, using CW and

SSB during his evenings and weekends. QSL to home call.

THIS WEEKEND ON THE RADIO. The All Asian DX CW Contest, NCCC Sprint CW Ladder, 1st ARR BPSK63 Contest, Digital Pentathlon, SMIRK CW Contest, Feld Hell Sprint, AGCW VHF/UHF CW Contest, West Virginia QSO Party, Kid's Day Contest and the DIE Contest will certainly keep contesters busy this weekend. The Run for the Bacon QRP CW Contest is scheduled for June 22. The SKCC CW Sprint is scheduled for June 24. Please see June QST, page 80 and the ARRL and WA7BNM contest web sites for details.

## Field Day Update

Field Day is coming up on the weekend of June 27-28, and preparations are almost complete. We hope to have stations on every band.

We will be in the Open Acres site at the Bruce's Mill Conservation Area, near Warden Avenue and Stouffville Road, east of Highway 404.

Watch for the sign on Warden Avenue, south of Stouffville Road. We have the site booked from Friday afternoon until Sunday afternoon, so those who wish to camp out starting Friday night can go up on Friday afternoon.

For maps and directions, see our website at <http://www.ve3we.org/fd2009.php>



*Illustration 1: Open Acres*

## Who remembers these previous SARC Members?

Should we show that old Field Day video again?

Let's see now whom it was we saw.

How about Cliff Peterson...how about Doug Joyce...how about Ivy Smythe...how about Bill Downs...how about Dick Guy...how about Lee Jennings...how about Chuck Harvey...how about Bill Wyley...how about John Chapman...how about Sid Pryor...how about Forbes Simpson...how about Ray Pellow...how about John McCorriston...how about Gerry Robertson...how about Salt Jones & Bill Cate.

Who is that guy? Who is that woman? Was it Herb Lehman? Was it Eva Colleck? That fellow looks like Dennis Eason, hard to say. That person must be Steve Cody. Gord Steane is that you I see? Now I wonder perhaps, Gord Hogarth, hmm...too faint to say for sure.

We should have a photo night so that present members pictures and names can be placed in our archives for future members to see. Boy oh boy, do I wish I knew who won the wheelbarrow race from that archive video.

Yours, Bob VE3IEL...73

# Propagation Forecast

QST de W1AW  
Propagation Forecast Bulletin 25 ARLP025  
From Tad Cook, K7RA  
Seattle, WA June 19, 2009  
To all radio amateurs

This week's bulletin was written by Carl Luetzelschwab, K9LA. Carl is filling in for your regular reporter Tad Cook, K7RA.

Silent Key - I was saddened to read that Jim Tabor KU5S passed away on May 27. Jim was the driving force behind Kangaroo Tabor Software, which offered propagation prediction programs such as CapMAN and WinCAP Wizard, programs to help monitor the NCDXF/IARU beacons, and several other propagation-related packages. Jim also contributed propagation software to the CD-ROM bundled with the ARRL Antenna Book. I personally enjoyed many e-mail exchanges and several QSOs with Jim, talking about various propagation and ionospheric issues.

Summary for the Week - I bet you have this memorized: "Solar activity was very low throughout the reporting period, and geomagnetic field activity was at quiet levels during most of the reporting period." Enough said?

This Solar Minimum - The first sunspot region of Cycle 24 occurred on January 4, 2008. Since then, though, Cycle 24 spots have been few and far between. A good summary of this solar minimum can be made in two statements. The first statement is that the duration of this solar minimum is unusual compared to the other solar minimums in our lifetime. That's because from the minimum between Cycle 17 and 18 onward, solar minimums have been roughly two years. Thus we've only been exposed to "short" solar minimum periods. A look at all history, though, shows a different story, and brings us to the second statement. This solar minimum, which is going on three years, is pretty much average in

duration compared to all history. What this all says is the Sun has been highly variable throughout recorded history.

Noctilucent Clouds Return - As reported at spaceweather.com on June 1, the first noctilucent clouds (NLC) of the 2009 season were sighted over Russia on May 27. NLCs typically appear about 20 days prior to the summer solstice, increase quickly to a high summer level, and then disappear about 50 days after the summer solstice. These clouds are mostly a high latitude phenomenon, and are believed to be composed of ice crystals. VHF radars see very strong echoes from these clouds, and since they are at mesospheric heights (80 to 90 km), they are also known as polar mesosphere summer echoes (PMSE). These clouds are hypothesized by JE1BMJ and others to be responsible for 6m propagation across high latitudes (for example, from the East Coast of North America to Japan) during the northern hemisphere summer. This mode of propagation has been dubbed Summer Solstice Short-path Propagation (SSSP). Check out page 34 of the February 2009 issue of WorldRadio Online (available free at [www.cq-amateur-radio.com/wr\\_back\\_issues.html](http://www.cq-amateur-radio.com/wr_back_issues.html)) for a general discussion of PMSE and SSSP and for references in the technical literature. To reiterate, SSSP is still just a theory, but the occurrences of QSOs appear to match the occurrence pattern of PMSE.

Getting Ready for Glorioso - Beginning on July 9 and continuing through July 28, a French team expects to activate this extremely rare DXCC entity (it's in the Top 5 in the Most Wanted Survey as listed in the January/February 2009 issue of The DX Magazine). Glorioso is located in the Indian Ocean near the northern tip of Madagascar, and enjoys higher-than-usual MUFs (maximum usable frequencies) even at solar minimum due to the robust equatorial ionosphere. Unfortunately the North American end of the path will suffer from low MUFs due to a combination of solar minimum and a summer month. The result of this is that 15, 12, and 10 meters will likely not produce many QSOs between Glorioso and North America. My

recommendation is to concentrate your efforts on 40, 30, 20, and 17 meters. And if you need Glorioso for an all-time new one for DXCC, be sure to work this DXpedition - it will probably be quite a while until it is again activated.

Cycle 24 Predictions - If you dig through the technical literature, you'll discover that there are more than 50 predictions for Cycle 24. They range from a low smoothed sunspot number of 40 to a high of 185. Why are there so many predictions? That's a simple question to answer - solar scientists do not fully understand the process that generates sunspots, and thus many different methods have been used to make a prediction. Does this mean they're guessing and should be admonished for not being correct? I personally don't think so. What we're seeing is the scientific process being used. A prediction is made using a certain method, and Cycle 24's progress (or lack of progress) allows scientists a means to test their theory. That's how science works when we don't understand something. Will we ever figure this out? I can't answer that question, but I recently read an interesting NASA Headline News story ([http://science.nasa.gov/headlines/y2009/17jun\\_jetstream.htm?list45339](http://science.nasa.gov/headlines/y2009/17jun_jetstream.htm?list45339)) saying scientists announced that "a jet stream deep inside the Sun is migrating slower than usual through the star's interior, giving rise to the lack of sunspots." Perhaps this will be an important clue to help our understanding of the sunspot process.

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://www.arrl.org/tis/info/propagation.html>. For a detailed explanation of the numbers used in this bulletin, see <http://www.arrl.org/tis/info/k9la-prop.html>. An archive of past propagation bulletins is at <http://www.arrl.org/wlaw/prop/>.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://www.arrl.org/qst/propcharts/>.

Instructions for starting or ending email distribution of this bulletin are at <http://www.arrl.org/wlaw.html#email>.

Sunspot numbers for June 11 through 17 were 0, 12, 0, 0, 0, 0, and 11 with a mean of 3.3. 10.7 cm

flux was 69.3, 69, 68.2, 68.1, 67.4, 68.3, and 67.8 with a mean of 68.3. Estimated planetary A indices were 3, 2, 4, 6, 4, 3 and 3 with a mean of 3.6. Estimated mid-latitude A indices were 2, 1, 3, 4, 4, 4 and 1 with a mean of 2.7.

## See you in September

Have a safe and enjoyable summer.

Our next meeting will be on Monday, September 14 at 7 PM at the Don Montgomery Community Recreation Centre.