

Version 200504

April 2005



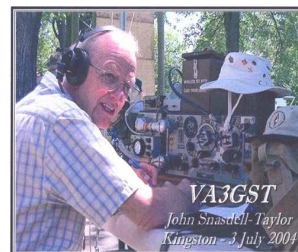
KINGSTON AMATEUR RADIO CLUB

Kingston Amateur News

KENWOOD TRANSCEIVER TS - 440S

*Sr# 8050491 TROUBLESHOOTING
NOTES*

By John S. Taylor- VA3GST PART 2



(Part 2 of the Kenwood Transceiver by John Taylor- Editor)

Troubleshooting Loss of Transmission

At this time I removed the PLL board to examine the solder connections around PLL5. This is the PLL that normally has a conformal coating on the components that is a cause of malfunction. In this case the conformal coating had already been removed and in examining the solder connections had been resoldered. One

joint looked very poor with some of the trace damaged around the feed through hole. I was able to clean this up to some extent. The PLL board was then re-installed.

From the results of the above I then decided to start looking at RF drive to the power amplifier. The RF measurements were done using a 150 Mhz dual beam scope and a 10X probe. The tests were done on CW using a straight key in the key jack.

The drive to the PA comes off the RF board

via a coaxial connector. I worked back from this DRV point to the last amplifier Q16 then Q15. The only point a signal could be measured was the output of Q16 or the DRV connector. At this point with the carrier level control set to maximum I could measure 100 mv pp, this is the drive level to the PA. Did not seem enough to me, but why?

This signal could also be heard on another receiver. Since I could hear the transmitter output on the other receiver I tried both SSB and CW to find both working well. It would

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<http://www.king.igs.net/~karc/>

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is now operational
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Special points of interest:

- *Events*
- *New Article Feature by Bill Rumball*
- *You might be a Redneck Ham if.....*
- *Minutes for March 2, 2005*
- ***Deadline for May Submissions
April 22, 2005***

Executive 2005

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Treasurer's Report– Ferd Schijns (VE3SH)

Financial report for March/05

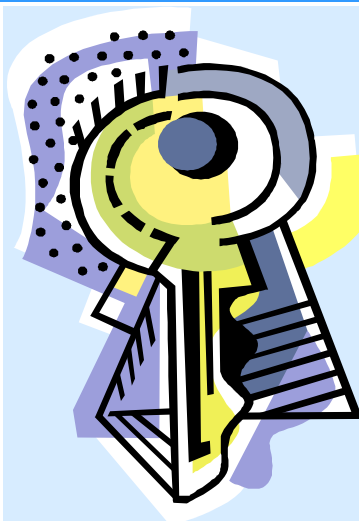
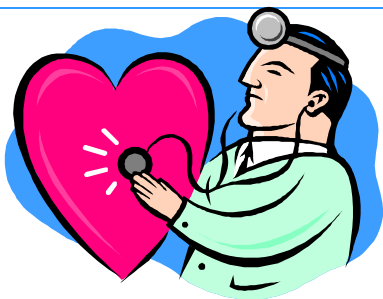
Balance Feb 28/05	5,226.33
50/50 draw	33.00
Total	5,259.33

This my report,
As of March 22, 2005

Treasurer, Ferd Schijns

ON THE MEND....

Les Linstrom (VE3KFS) is recovering from a recent bout with Appendicitis.



SILENT KEYS

VE3FXZ Edmund M. Hartlin (Ed) of Kingston, died 24 March 2005. A member of KARC since 1976. Ed was a frequent guest speaker and lecturer at club meetings in the late 1970s and early 1980s

ARTHUR BLICK (Deceased March 2, 2005)

The family of the late Arthur Blick (VE3AHU) would like to extend our heartfelt thanks and appreciation for the many acts of kindness and expressions of sympathy and condolences during the recent loss of our dearly beloved father and husband.

Mrs. Eileen Blick & Family

Kenwood Transceiver– TS-440S

(continued from page 1)

appear that the only problem was the lack of power out from the P.A.

The only way I had to measure this low power was with the oscilloscope and measuring across a known load, 50 ohms. Front panel carrier control was set to maximum, frequency was 7.067 Mhz., mode CW. Output at SO-239.

A good sine wave is seen at 8 volts peak to peak, 2.8 volts RMS. $P=E^2/R = 2.82/50 = 0.16$ watts across the 50 ohm dummy load. This increased to 0.65 watts when by-passing the tuner, set to THRU.

The drive signal at DRV going into the PA was measured with the PA disconnected. The DRV was loaded with 50 ohms, the input impedance of the PA, the peak to peak voltage measured here with the above conditions was only 40 mv. A reasonable level here would be about 600 mv. pp with the carrier control at maximum.

There is a microprocessor function test list that was followed and a list of check points to monitor, this was done and all checked OK.

At this point I decided I need more education on the 440's ALC, IF and RF systems so I hit the schematics and descriptions for a number of days. After a lot of head bashing, voltage measurements, scope probing I began to understand the ALC and all the contributors to it. Now I was able to make the link between RF gain control and the ALC.

The ALC is controlling the gain of the 8.83 Mhz IF signal at Q46, a dual gate MOSFET.

ALC is applied to the Gate 2 and the 8.83 Mhz IF is applied to the Gate 1, by varying the voltage on gate 2 the gain of the FET is varied. The level of the 8.83 Mhz IF signal on Gate 1 is fixed and appears good.

Now trying to tie in all the controllers of the ALC I found it necessary to make a block diagram of the ALC path and contributors. See ALC interconnections in block form only, Diagram 1. All of the ALC circuitry is on the filter board.

The ALC control from the microprocessor and the ALC control from the comparator in the PA measuring output power device temperature both go to the summing circuit which also forms part of the SWR detector, another contributor to the ALC.

The supply for this summing circuit is operating between a positive rail and a negative rail and bias voltages in this area did not seem correct.



“New Ham’s: This one’s for YOU”

RIGS THAT I HAVE KNOWN....

by Bill Rumball (VA3OL)

This article is aimed at the **new Ham** but what the heck we can all learn. Even if it is from my mistakes or ineptitude.

And if you don't like my opinion: don't tell me... write your own article, or send a letter to the editor!

Licensed in 1978 my first rig was an FT-200. The poor man's Yaesu. It is the sole reason that I didn't own ANOTHER Yaesu for over 25 years as I have harbored a grudge against Yaesu and their dealer network. But in 2004 I got over it and ordered an FT-857 with DSP.... Well, what can I say. I still don't like Yaesu. After 6 months the rig was sold at a nice loss and I carried on in the search for the perfect rig. But I AM GETTING ahead of myself. The story begins, where else, at the beginning...

During my early years as a ham I was lucky. I had a second job that paid me the princely sum of \$1000 a year teaching student accountants at the local college one night a week. So being a family man and having small children; a big mortgage, what did I do? Well for 5 years I took this money and went to Dayton. The Greatest Ham Flea Market in the world! If you like flea markets then just once in your life you have to go to the Dayton Hamvention. [<http://www.hamvention.org/>]

During those early years I owned: a Ten Tec PM3 (a little three band direct conversion rig; that frankly wasn't all that good but they are now collectors items), Ten Tec Century 21 (CW only), Ten Tec Argosy 525, Ten Tec Argonaut 509, Drake Twins (the Famous C line), Heathkits HW-8 and HW-9. Do you see a trend here? I also owned in later years an ICOM 735, (a truly classic rig) and a Kenwood TS-570D.

Other rigs that I have had include a DW-20, (a tiny 20 meter CW transceiver kit) an SGC-2020, an Elecraft K1, K2, Ten Tec Argonaut 516 and Finally a Ten Tec Omni VI/ opt3.

Each of these rigs had a certain appeal when I bought it. For example the Ten Tec Argonaut 509 is a small (in those days; it is big by today's standards) CW/SSB QRP rig putting out about 3 watts on SSB. This rig was my mobile rig for about a year and a half during 1980/81. For about 3 months during the winter of 1980 I traveled the road between London and Chatham and ran SSB at 3 watts into a

RIGS THAT I HAVE KNOWN....

[continued from page 3]

My quest for the perfect rig almost ended in 2000. At the time I was on sick leave from work and I found a basic CW only Elecraft K2 for sale in the US. I bought it and slowly built the accessories that I wanted. It is now a CW/SSB, 10 watt HF rig with an autotuner, noise blanker, and audio filter. This rig was a kit and it has one of the finest receivers that I have ever listened to. Unfortunately there are times when 10 watts is not enough, but I had an old HF amplifier that I used with it. The amp was a bit clunky on CW as the relays kicked in and out but it gave me a solid 300 watts plus to the antenna.

I was so impressed with the K2 that I ended up buying a K1 kit with all of the accessories. Here is a small 5 watt CW only radio with auto tuner, built-in keyer and noise blanker and it covers the bottom 80 kHz of 40, 30, 20 and 15. For my tiny RV it is perfect for use in a campsite. The Elecraft rigs are not for everyone. First they are kits and second they are pricey. But they come with a great reputation that is well deserved and customer service that is next to none. Also they are very repairable since they have no (or very few, depending on the options you put into it) SMT parts.

So let me summarize my experiences in rig ownership:

Many of the rigs today do not have (in my opinion) a decent receiver. By this I don't mean the fancy technical specs kind of performance. Almost all of the receiver/transceivers on the market have reasonable technical specifications. What I mean is can you listen to the receiver for long periods of time without fatigue? My hamming style is to listen 90% of the time and transmit 10%. In addition I often have a radio playing in the background as I go about my daily routine.

My ICOM 735 served me well for over 10 years of trouble free operation but it's audio was harsh. This radio is excellent for the beginner because it incorporates a very good CW filter as a standard feature. Mine also had the optional CW filter installed but it really wasn't necessary for casual use. With add on crystal filters costing almost \$200 Cdn it is important that you have some sort of CW filter in the rig. The other choice is to add a DSP add on CW filter. 735's can be had for around \$500 on the used market but of course you have to add a power supply for around \$100.

For the new Hams out there I would suggest that you start looking for an audio DSP filter right now. Don't wait.... The Radio Shack DSP filters can be had for as little as \$35 and they HAVE FAIR PERFORMANCE. For a better DSP filter try the Timewave DSP 59+. I bought my 59+ for \$50 at a flea market but you can generally count on paying \$100 or more for one. I make this recommendation because you can use the DSP filter for SSB, CW and in some cases for the digital modes on any radio including just a receiver. It will improve your receiver and your pleasure on CW at a minimal cost and you will have it for the next treasure that you find.

The Kenwood TS-570D (not the DG model) was a nice radio but again I found that the receiver audio did not meet my expectations. In addition, the built in auto tuner had a limited range and would not tune my G5RV on the WARC bands. DSP on this early 570 was, well; terrible. I can't say what the later version (the 570DG) is like but these audio derived DSPs just don't measure up.

My comments about the 570D can be repeated for the YAESU FT-857 that I had but in this case the receiver had a constant SHHHHHHHHHH that drove me nuts. This is not a receiver that you can sit in front of all day and listen to. That being said, the FT-857 is perfect for mobile operations where the ambient noise levels make the SHHHHHHHH irrelevant.

After much research and generally trying to find the perfect rig for me... I think I have found it!

The Omni VI by Ten Tec has superb technical specifications and now that I have one I can tell you that the IF DSP works like no other that I have (in my limited experience) heard. My Omni VI had the factory installed 'option 3'. What this means is that it is electrically and cosmetically an Omni VI plus with the exception of the name plate. It has one other advantage over the Omni VI+. The radio was built with through the hole components whereas the Omni VI+ was made with SMT parts. A real bonus (to me) if it needs service in later years.

Oh, and lets talk about service. Ten Tec is known for their service. If you need to have the PTO on your Century 21 or 509 rebuilt: Ten Tec has the parts at a reasonable cost with complete instructions on how to REBUILD it. These radios went out of production 25 years ago but Ten Tec can still provide the parts (in most cases).

Ok, you have noticed the trend in my buying habits.... I like US made equipment. Ok, it doesn't have 6 microprocessors, two receivers, or a band scope but it does have longevity.

Publishing Schedule of the KARC Newsletter:

May Edition of KARC need by April 22
June Edition of KARC need by May 17 (early due to vacation)

July & August I will create a Newsletter if any articles and interest let me know at vazkdh@rac.ca

September Edition of KARC need by August 26
October Edition of KARC need by September 23
November Edition of KARC need by October 21
December Edition of KARC need by November 25

Upcoming Events

April 6, 2005 KARC Regular Meeting 7:00 p.m.
Smitty's Back Room

April 18, 2005 Kingston ARES meeting
7:00 p.m Kingston West Fire Department

Every **Tuesday** at 7:00 p.m. ARES Net on VE3KBR

The Kingston A.R.E.S. group weekly net is on Tuesdays at 1900 hrs on VE3KBR repeater. There is also an informal Simplex Net on Wednesdays at 1900 - 1930 hrs on 146.475 MHz. This is open to all Amateurs to test coverage and antennas. Call VE3NB controller.

Every **Wednesday** at 7:30 p.m. KARC Net VE3KBR

Every **Saturday** Breakfast at Smitty's
Starts at 8:00 a.m. but come early and chat

KARC Web page designed and maintained by:
VA3KGB, Chip

<http://www.king.igs.net/~karc/>

Join the **KARC** email list
<http://www.smartgroups.com/groups/karc>

Visit the **ARES** web site at:
<http://www.qsl.net/kingstonares/index.html>



Q uoted from an unknown source off the net...

You might be a Redneck Ham if:

A Quarter wave is your mother making you wave at the little girl you never liked.

Half wave is you waving at a pretty girl while your wife is looking the other way.

Standing wave is your wife smacking you in the back of the head for half waving at the girl.

Feed line is what you get in to eat.

Resistor is what you do to an ugly girl.

Coax is what you do with a pretty girl.

Rubber duck is a decoy.

Linear has something to with your family tree, despite it's lack of branches.

Radiator is part of your pickup.

Propagation is the rate of reproduction

A Historical Note

At the K.A.R.C. meetings in 1957 there were many discussions on the subject of producing a club crest, and at the 15 January 1958 meeting a design was approved. After a brief discussion it was moved by Dick Wren VE3ATL, that two dozen crests be ordered. Moved by Harold Sharpe VE3CLH and seconded by Bill Thompson VE3CKF, that they be sold to members at \$1.00 each, provided that the original cost be less than .65cents. Annual club dues were \$2.50.

At one time, the crest was very common on members' jackets and windbreakers and a supply was always available. From that date to the present, the club crest appears on club mastheads and in the Kingston Amateur News.

The executive in 1958 were:

President Bernard Burdsall VE3BEO (VE3NB)

Sec/Treasurer Millie Simson V3EII

Sad to say, all are SKs except VE3NB

Vice-president Jim Simson VE3EIJ

Activities Dick Wren VE3ATL

VE3NB Club Historian

Kenwood Transceiver– TS-440S (continued from page 4)

The net result of this summing circuit is what is controlling the Q46 gain at gate 2, the ALC voltage.

The filter board was removed at this point so as to trace the circuit. At first it appeared as though the board had a factory modification as the schematic was not reflecting what was seen on the board. Found one modification, Q6 and D24 was mounted on the bottom of the PCB. D24 is comprised of two diodes in series and does not appear this way on the schematic.

This diode arrangement is done to reduce the diode capacitance, two capacitors in series will have half the capacitance and give a faster switching time. This modification had nothing to do with the problem.

Voltages were missing. Not seeing anything wrong other than differences between board and schematic the board was then reinstalled.

More RF voltages were measured to check for attenuation of the signal going through the filter and SWR detector, appeared to be minimal loss, all appeared normal.

The filter board was then completely by-passed so the signal was now going from the PA directly to the antenna tuner. There was no change in the results. Damn!

I figured at this time it may be best to start checking the Q46 IF amplifier and it's output circuit. The 8.83 IF signal going to the gate 1 appeared to be a reasonable level. The output of the amplifier, the drain, drives L12 a parallel tuned load and the secondary is a low impedance driving the second mixer transformer T13.

The drain connection was removed and a signal source of 8.83 Mhz, AC coupled to the winding. The signal level of 400 mv gave a level of 40 mv on the secondary winding of L12 transformer. This proved the transformer was not shorted out by the internal capacitor and is a 10 to 1 ratio. Next the 8.83 Mhz signal was connected to the secondary winding, AC coupled via a .01 uf capacitor. This is necessary so as to allow the normal biasing of the steering diode, D40 on the RF board at the input to the T13. This diode is biased through the L12 secondary.

With 5 mv PP input and the transmitter working into a 50 ohm dummy load I now had power out, 10 watts. WOW. 10 mv PP input gave 40 watts and 15 mv PP gave 90 watts output. This power out was measured on the MFJ - 949, the power meter on the 440 was showing 0 watts.

This test was repeated and the ALC monitored at Q46 gate 2, it never changed from zero volts.

The 440 antenna tuner is also tuning very well. Thus now

I was on my own. I dragged out an old 3N140 and built a circuit around it to measure it's characteristics, seemed like it was OK, hi hi.

Tried it in place of the 3SK73 but no luck. Now I am bashing around in the damn bush for sure.

The voltage I needed was that of the gate 2 of the Q46, it is labeled +3.4 V. All this time it has been at zero volts. This helps to explain the operation of the ALC circuit. This proved that there was a missing voltage, a positive voltage. 3.4 volts on gate 2 brings the Q46 gain up a large

amount compared to having 0 volts. Here I used a battery and a potentiometer with a 1K isolation resistor and increased the positive bias on gate 2. This gave significant power increase.

In the ALC circuit there is a dual op- amp. (Operational amplifier) BA718, this amplifier is used to drive the front panel meter on the 440. One amplifier is used for the power out and the other is used for the ALC level. One reason why earlier I mentioned that the 440 power meter was not responding, this amplifier was not receiving it's supply voltage.

The filter board was again removed so as to trace the print looking for the lost connection to the positive supply, a +10V source. This IC, integrated circuit, is a 9 pin SIP, I stopped work at this point and went looking for either data on this device or a new device.

Well I hit it lucky, I went to Colborne TV and visited my friend Keith and he said come in the back and he dumped a box of old parts out on the bench. He said go through that and throw the rest back in the box.

Third item I picked up was the BA718 and in it's original box, how lucky can a guy get.

First thing I did was to take Keith's ohm meter and check pins 1 and 9 for continuity. Bang on they are connected together, that was it I had my problem solved.

This device was replaced and power checked at different levels and bands into a dummy load.

Final test was done on the TPN asking for a signal strength and quality report. I received many reports, all good and I was running only 30 watts.



Kenwood Transceiver TS-440S

Kenwood Transceiver– TS-440S (continued from page 7)

End of painful but interesting transmitter problems.

the steering diode, D40 on the RF board at the input to the T13. This diode is biased through the L12 secondary. With 5 mv PP input and the transmitter working into a 50 ohm dummy load I now had power out, 10 watts. WOW. 10 mv PP input gave 40 watts and 15 mv PP gave 90 watts output. This power out was measured on the MFJ - 949, the power meter on the 440 was showing 0 watts.

This test was repeated and the ALC monitored at Q46 gate 2, it never changed from zero volts.

The 440 antenna tuner is also tuning very well. Thus now with the ALC loop open it could be seen that the problem was in the ALC circuit itself. But first to complete the Q46 test so as to have no doubt about this stage I started to look into replacing the Q46 a 3SK73 dual gate MOSFET. There is virtually no data on this device so I was on my own. I dragged out an old 3N140 and built a circuit around it to measure it's characteristics, seemed like it was OK, hi hi.

Tried it in place of the 3SK73 but no luck. Now I am bashing around in the damn bush for sure.

The 3N140 was removed and the 3SK73 replaced. Time now to back track to the ALC, the one thing that has spooked me most of the time so this has to end this battle.

Why does the ALC circuit not appear to be the same as the schematic ?? Well damn it, it is the same, even the modification that is under the filter board.. It's the voltages that are not the same. After a lot of days of digging around the service manual I found some voltages marked on the schematics of the service manual, not the hard copy but only the manual on CD. Marked in red as well hi hi. single inline package. The little information I found on this IC was the pin out and it said pins 1 and 9 were VCC, +10V. Well there was 10v on pin 1 but not pin 9. This is were the biasing for the ALC circuit must come from. There was no information as to whether pins 1 and 9 were connected internally or not. Usually in a dual op-amp like this it is advantageous to power each unit separately so no reason to have them connected internally.

Well for this to operate they should be so I connected them together via a 1K resistor. Now I was getting voltages as I should on the Q46 gate 2 and I was able to have power out. This also corrected voltages in the SWR detector circuit.

I stopped work at this point and went looking for either data on this device or a new device.

Well I hit it lucky, I went to Colborne TV and visited my friend Keith and he said come in the back and he dumped a box of old parts out on the bench. He said go through that and throw the rest back in the box.

Third item I picked up was the BA718 and in it's original box, how lucky can a guy get. First thing I did was to take Keith's ohm meter and check pins 1 and 9 for continuity. Bang on they are connected together, that was it I had my problem solved.

This device was replaced and power checked at different levels and bands into a dummy load. Final test was done on the TPN asking for a signal strength and quality report. I received many reports, all good and I was running only 30 watts.

A DEAD 12 METER BAND

As stated earlier this band like the others was showing no digital read out and all functions not responding.

For this band only TP 10 was showing 2.11 volts and should be over 2.5 volts, thus the VCO 1 was not oscillating. VCO 1 is comprised of Q21 and T21 and oscillates from 67 Mhz to 75 Mhz for the 24 Mhz band. When this 12 meter band is selected the collector voltage for Q21 drops to zero volts, therefore explains why the oscillator is not operating. This voltage is controlled by buffer Q17, for this voltage to be a high the input of Q17 should be high and it is low. This buffer is driven by a level shifter Q44 via D61. This level shifter also drives a relay in the antenna tuner and the steering diodes in the RF band pass filter. The output of Q44, the collector is low and should be a high. The Q44 is driven by Q40, a 74LS145. This is an open collector BCD to decimal decoder. The BCD 4 bit word is coming from the processor and as each band is selected this code changes to select a different oscillator. This IC appeared to be working fine.

So Q40 appeared to be driving Q44 correctly but the base emitter bias voltages were not correct for a forward biased PNP junction. By once again removing the RF board and pulling the base lead of the Q44 I found the base emitter junction open. This was a 2SA562Y PNP transistor, I replaced it with a 2N2907. RF board reinstalled and found same problems. OK, I walked away from this for a few days but could never stop thinking about it.

Seems this Q44 was being stressed out some how so I measured the resistance that the Q44 collector was working into. WOW it was a dead short.

Q44 collector also goes straight to a 2 pin connector J3 and that cable goes to the antenna tuner. I disconnected the other end of this cable at the antenna tuner, AT J24-24T, short was still on the cable.

With this cable disconnected from the RF board I again checked the base emitter voltages and they are not correct. I removed the RF board and found the transistor base emitter again

open, no wonder with a short on the collector. I replaced the transistor again. This transistor, Q44 collector is driving a relay in the antenna tuner (wire 24T).

Now with the RF board out of the unit I checked the cable going to the antenna tuner. Just before the cable enters the antenna tuner it turns around the edge of the chassis. When I moved the cable away from this corner the short disappeared. Upon examining the specific wire in this cable I was not able to see any damage to the insulation. I moved the cable such that it took the pressure off the cable going around this point of the chassis.

Once again I reinstalled the RF board, installed all connectors etc then set-up for the RF test.
Now all bands are operating, receive and transmit.

Since no RF adjustments were touched and any components that were changed were not in a frequency sensitive part of the circuitry no tuning was done.

These notes have been written under the cover from local QRM of very peaceful classical piano music played by Barry, VE3NWV.

John, VA3GST
February 06, 05

Continued from Page 4Thank you Max, for the
"Colourful" submission

Ionosphere means, "the basketball is mine".

Tube is the TV.

Transistor is a nun who had a sex change.

Zepp is a breakfast cereal.

Whip is what your kid can do to the honor student.

Harmonic is what Charlie McCoy plays music with.

Image is something the rich folks can keep.

Parasites is two locations.

DX is just a brand name for gasoline.

QRP is a kidney disease.

Impedance is a jig you do while looking for a restroom.

Ohms is Watson's detective partner.

Current is some kind of berry.

A handheld could lead to romance.

A loudspeaker is a cheerleader.

Ampere is a ear deformity.

Volt is what you do on a Tuesday in November.

A handheld could lead to romance.

A loudspeaker is a cheerleader.

Ampere is a ear deformity.

Volt is what you do on a Tuesday in November.

Watt is often asked by someone hard of hearing.

Chip is something you avoid stepping in, out in the pasture.

Beam is an illumination for frog gigging.

Quad is a form of carburation.

Slow Scan is what you do when a girl walks by.

Contact is what you yell when jump starting your pickup.

Digital means displaying one finger.

A condenser is something that puts milk in cans.

An inductor works for Amtrak.

A coil is used to make moonshine.

Polarization is the difference between races.

Meter is being introduced to a woman.

160 is the average speed for a NASCAR race.

Mobile is another brand of gasoline.

Switch is swapping mates.

Knife is pulling out a bigger blade in a fight.

Push-to-Talk is forcing yourself to be heard in a beer joint.

Pair-of-strippers are two naked girls.

Keyer is a locksmith.

Connector is a dating service.

Rotor is a new fangled brake on a car.

MINUTES OF THE MEETING OF THE KINGSTON AMATEUR RADIO CLUB
HELD ON March 2, 2005 At SMITTY'S RESTAURANT, PRINCESS ST.

The meeting opened at 7PM by Rob, VE3RPF

All members were introduced

Rob, VE3RPF announced that Art Blick was a silent key. Ron, VE3GO provided a eulogy

2. MINUTES of the February Meeting were presented. Moved that the amended minutes be accepted by VE3KFS, Les and seconded by VE3FFR, Doug.....carried

3. TREASURERS REPORT was published in the bulletin. Moved by VE3SH, Ferd that the treasurers report be accepted. Seconded by Tom, VA3ZE.... carried

4. OLD BUSINESS

- The GOTA (Guides on the Air) was well attended at the Communications Museum by 10 guides and 2 leaders. All of those who assisted were thanked..

- The second repeater is up and running on 147.09 (147.69) and entering 411 will give a list of all codes.

- Roy, VE3VJF Thank all of those on the repeater committee for their good work to make this a reality.

50/50 Draw

Won by VE3GO, Ron, who donated the winnings (16.50) to the Communications Museum

5: NEW BUSINESS

- The club owns three radios that are surplus to the clubs needs. They will be sold by silent auction. The radios are an Atlas 210X with a Shure 444 microphone, a Radio Shack HTX-212 and a TS820 which needs repairs. Bids will start at \$100 for the 210X and the HTX and at \$50 for the TS820. All bids should be emailed to Rob, VE3RPF and bidding will close at midnight on Wednesday March 9, 2005. There are no manuals for these radios and the 210X and the HTX have been tested and appear to be working properly. The TS820 has no audio and the display does not work.

- Tom, VA3ZE moved that a donation be made to the communications museum in the amount of \$100 in memory of Art Blick, VE3AHU. Seconded by Roy, VE3VJF. Carried

7: REPORTS:

RAC: (No report) Steve, VE3KC reported that the latest RAC bulletin mentions that the latest Townsend report is available for download. (this is the governments report on antennas and towers)

NET MANAGER VE3KFS Les: we need more controllers. Other than this the net is running.

IRLP: No report

KARC NEWSLETTER: VE3KDH, Kim was not available but the group thanked her for the very professional newsletter. Applause was heard!

WEBSITE: Chip, VA3KGB reported that he is investigating a new service for storage of the websites files and will report in the near future.

OTHER ITEMS:

Chip also advised that he is working on a computer interface for the RACAL receivers that were acquired by some members from SEAFARS. Please see Chip if you are interested.

ADJOURNMENT: Moved by Doug, VE3FFR Seconded by VE3RCN, Kevin Carried

Bill Rumball, VA3OL

KARC AGENDA

Meeting Date: 6 April 2005



1. Introduction of members
2. Additions and/or deletions
3. Minutes of "Monthly Meeting Errors/Omissions"
4. Treasurer's Report
5. Old Business
6. 50/50 Draw
7. New Business
8. Reports
 - a) RAC
 - b) Net Manager - VE3KFS
 - c) KARC Newsletter – VA3 KDH
 - d) Webpage - VA3KGB
 - e) Any other reports
9. Adjournment

Trying to Learn CW?

I have a few CD's of the K7QO (Chuck Admans) CW course. It comes complete with a manual in pdf format and the files themselves are in mp3 format. They can be played on your computer, on a audio CD player or you can transfer the files to an mp3 player. This course starts you out at the letter a and takes up from there. The course is FREE. I would ask that you provide a blank CD-R in exchange so that I can make more if there is a demand. See me at the April meeting when I will have a few of the CD's available. Bill VA3OL