



The Hamilton Amateur

The Hamilton Amateur Radio Club Newsletter – 78 Years of Amateur Radio 1932 - 2010

Hamilton Amateur Radio Club,
117 - 350 King Street East,
P.O. Box 75073,
Hamilton, Ontario, L8N 4G6
Est. 1932 Inc. 1956
<http://www.hamiltonarc.ca/>

In This Issue

- RF Shielding ----- 1
- Making a Printed
- Circuit Board part II----2
- HARC Executive -----2
- HARC Chairs-----3
- Meeting Minutes of
- February 17, 2010-----4
- Important Points -----4
- How Computers and the
- Internet are Helping
- Amateur Radio -----5
- Swapnet Listings-----6
- Pictorial -----7
- Textured Paint -----8
- A Solid State Blast from
- the Past -----8

The Next Meeting

an important message from the executive about a change in the date of our next meeting.

Because of March Break the Christian High School where we meet will be closed on our normal meeting date. Therefore **our March meeting has been scheduled a week sooner. We will be meeting at the usual location on Wednesday March 10th at 7:30 PM.** Please circle March 10th on your calendar and tell your friends.

RF Shielding

or, Things Are Not Always As They Seem

by John Hudak
VE3CXB

I like to collect older technical books and I came across a text on "Transmission Lines, Antennas, and Wave Guides" published in 1945.

Of course many of these texts are pretty heavy going with lots of math and concepts that may be difficult to grasp. But every now and then one comes across a little nugget of information that is interesting, if not enlightening. In this text there is a



section on general electromagnetic theory where the authors discuss shielding. It was their discussion that led me to have one of those "AHA!" moments - you know, where the little light bulb in your head flickers on for a moment or two.

We are all familiar (or should be) with the concept of shielding. The braid in our coax cable acts as a shield. Certain circuits in our radios, such as filters, may be contained within metal boxes which act as a shield. In fact the metal case that our radios are packaged in can be considered a shield as long as the shield is grounded. For our purposes a shield "prevents external or internal electromagnetic forces from interacting with certain other circuits or circuit components when we do not want them to". If we build a transceiver with a synthesized VFO rich in harmonics we might contain the VFO circuit in a metal box to prevent the radio waves produced by our VFO from interacting with other parts of our transceiver. Of course we can never completely shield something because in order for our device to be useful we must interact with it in some manner. We might want to take a signal out, as in the case of our VFO, or we might want to input a signal, as in the case of a test instrument. So in order to be useful we can never shield anything to 100% effectiveness as the device must have one or more "ports" through which we interact with the device. There are other physical reasons as to why we cannot completely shield something. We can only shield to such a level as to render the

Club meetings – 3rd Wednesday each month – 7:30 pm (except July and August) at Hamilton District Christian High School, 92 Glancaster Road, Ancaster, L9G 3K9, corner of Rymal Road (Hwy. #53) and Glancaster Road. Parking on location. Complimentary refreshments.

interfering signal undetectable or at least acceptable.

What is it we are shielding our devices from? We are shielding them from electromagnetic forces. Any electrical charge (like an electron), whether moving or stationary, exerts a force on other surrounding charges. And we all know that when charges move, along with the electrical force, we will now have a corresponding electromagnetic force. Sometimes we wish to have these forces act upon our devices because they cause a useful function to occur. One form of desirable interaction is the ability of our antenna to pick up radio waves so we can produce a useful signal in our radio. On the other hand, if we wish to test a receiver for it's limiting characteristics, such as sensitivity, we don't want outside electromagnetic forces to interfere with our measurements, so we may test our receiver in a shielded enclosure, like a grounded, metal lined room. The ARRL labs have such a room within which they do their tests on equipment for the reviews in published in QST. Or an antenna may be tested in a shielded room such that the true characteristics of the antenna (gain, beam pattern, etc.) can be determined without outside sources of electromagnetic interference upsetting our measurements. So as you can see, sometimes we want electromagnetic forces to interact with our devices, and at other times we do not.

Which leads to the matter of what do we really mean by "shielding"? I would venture to guess that the vast majority of us believe that a metal shield protects the equipment contained within the shield from external electrical disturbances by blocking and leading the interfering signal to ground. I quote a line from the above mentioned text: "... it is necessary to reject the naive belief that a metal shield protects the equipment within it from electrical disturbances in much the same way that a raincoat protects the wearer in a rainstorm."

The plastic that the raincoat is made of material that blocks the entry of water droplets and prevents us from getting wet, therefore we assume that the metal that the shield is made of prevents radio waves from getting through to our device. At this point you just have to know that I'm going to say that this is not so! And you would be correct.

Every charged particle in the universe exerts a force on every other charged particle in the universe. If we put our circuit in a metal box those charged particles on the outside are still exerting a force on the charged particles contained in our circuit in the metal box, and they will continue to do so whether or not that metal box is there.

If the external charged particles are moving, we know that this generates a current in our device. It is this generated current that we call the interaction, or "interference" if you will. That current is still there regardless of the presence of the metal shield. Then how does a shield work? What's the catch?

The catch is that the generated currents "inside" of the box are almost 180 degrees out of phase with, and almost of the same magnitude as the currents "outside" of the box. We always measure these currents with reference to something, an electrical ground for example. If we now measure these internal currents compared to the outside currents then the vector sum of the two is almost zero. The result is that to us, from our relative point of view, it appears as if we have prevented the external electrical forces from penetrating our shield. We haven't. We've cancelled them out but we haven't stopped them from getting through.

It's all a matter of appearances, or as Doc Einstein said, "It's all relative". RF shielding is really a cancellation effect, not a blocking effect. It's all just semantics one might say, and I suppose that is true. Does it really matter how a shield works? Perhaps not, just as long as, in the end, it does work. However by looking at these

HARC 2009-2010 Executive

President

Mike Krebs VA3WXS
<va3wx@hamiltonarc.ca>
905-523-9005

Past President

David Bruton VE3DWJ
905-383-9808
<ve3dwj@hamiltonarc.ca>

First Vice President

John Hudak, VE3CXB
905-627-9475
<ve3cxb@hamiltonarc.ca>

Second Vice President

Mike Christmas, VE3XMS
<ve3xms@hamiltonarc.ca>

Secretary

Bob Zimmerman, VE3RKZ
<ve3rkz@hamiltonarc.ca>

Interim Treasurer

Fred Robinson, VE3GCP
<ve3gcp@hamiltonarc.ca>

Director

Brian Bowie, VA3BMB
<ve3bmb@hamiltonarc.ca>

things in a different light I find it interesting to see just a bit more clearly how the universe really works.

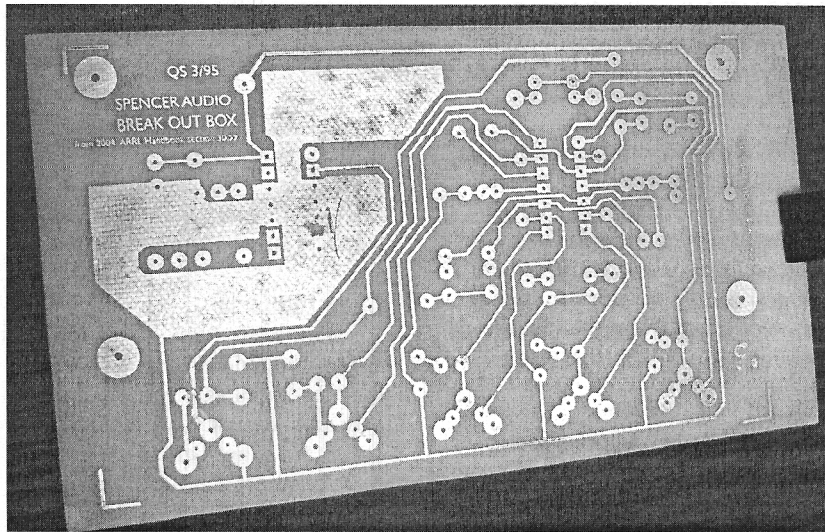
Making A Printed Circuit Board Part II

by Mardy Eedson VE3QEE

In the February newsletter I showed the results of a first attempt at etching a PCB (printed circuit board) for surface mount components. Since then I have continued experimenting. In the ARRL Handbook from 2004 there were plans for the Spencer Audio Break-Out Box, a piece of station equipment allowing audio from the rig to be distributed to several sets of headphones and an

external speaker, each having its own volume control. I felt a break-out box would be really useful at the contest site and on Field Day where an operator and a logger could both listen in on head phones.

The article explained how to build the circuit and provided a ready-made mask for the circuit. All you needed to do was photocopy the mask at the correct size and iron the toner onto a piece of copper clad PCB material. There was a one inch indicator line on the original drawing so you could adjust the magnification to ensure the circuit would be properly scaled.



The accompanying photograph shows the end result. There were a few gaps in the copper traces after the etching process but none that appeared to interrupt the circuit. Later, when the PCB is populated, any gaps that interrupt the circuit can be bridged with a jumper wire or extra solder. While not perfect, I expect the board will be acceptable. Thus, I would rate the second attempt successful.

The board in the picture still needs to be drilled to accommodate component leads.

General Meeting Minutes, February 17th, 2010

Recorded by Mardy VE3QEE

General Meeting Minutes, February
17, 2010

The meeting began at 7:37 P.M., with President Mike Krebs VA3WXS chairing.

Mike introduced our guest speaker for the evening, Anita Thomas, VA3ANI, a professional web designer and creator of our new HARC (Anniversary) web site. Anita gave a two-part presentation, first

introducing the new Swapnet feature of our web site and second walking us through some of the existing features of our web site.

Vice President, John Hudak, VE3CXB, thanked Anita and relayed how some people at RAC commended him on the excellence of our web site. Several members expressed how proud they are of our web site and the group gave Anita a spontaneous round of applause.

A refreshment break followed the speaker.

The business meeting was called to order at 8:51 P.M.

Approval of the Minutes. The minutes for the January meeting were

HARC 2009-2010 Chairs

Awards Chairman

Casey VanBroekhoven VE3CVP
905-385-8724 <ve3cvp@hamiltonarc.ca>

Contesting Manager/Property

Rick Danby VE3BK
905-544-3253 <ve3bk@hamiltonarc.ca>

Hamfest, Coordinator

Mardy Eedson
<ve3qee@hamiltonarc.ca>

Volunteer Examiners

Lorraine MacPherson VA3NZ
905-389-7653 <va3nz@hamiltonarc.ca>
Roger Pimm, VE3UFZ, 905-560-2628
<ve3ufz@hamiltonarc.ca>

Field Day Co-ordinator

Dan Martinak VA3DJ
905-979-7747 <va3dj@hamiltonarc.ca>

Repeater Chairman

John Vandenberg VE3DVV 905-692-3802
<ve3dvv@hamiltonarc.ca>

Health & Welfare Chairperson

Mary Urbanski VE3OGQ 905-388-8383
<ve3ogq@hamiltonarc.ca>

Hospitality

Membership Chair Sherry Goeller

VE3DCU, <ve3dcu@hamiltonarc.ca>

Newsletter Editor

Mardy Eedson VE3QEE, 905-648-0187
<ve3qee@hamiltonarc.ca>

Public Liaison

Neil Galloway VE3VNG 905-383-6986

Swap Net Controller

Communication

Michael Krebs VA3WXS 905-523-9005
<va3wxs@hamiltonarc.ca>

Web Master

Anita Thomas VA3ANI,
<va3ani@hamiltonarc.ca> and
Emsley Mitchell VE3JAI / VA3QI
<ve3jai@hamiltonarc.ca>

approved as printed in the February newsletter.

Treasurer's Report. Fred VE3GCP commented that our expenses on almost every activity last year, including Field Day, and the Christmas Party, were notably higher than the previous year. As a result, we have cashed a GIC to keep enough cash on hand in the account to service our ongoing expenses.

Fred reported that all parties with the exception of the Department of Corporate and Consumer Affairs, have now been notified of our change in address. Our new post office box has been paid for the current year. Other ongoing expenses are being met. The next item of significant expenditure will be Field Day coming in 4 months.

Fred reports monthly to the executive at the executive meeting, on the Wednesday following our club meeting.

Membership Report. Sherry VE3DCU, reported that we have 61 primary members and 8 family members currently.

Sherry also reported that she received communication from the family of the late Ted Heron a local radio amateur. During his ham career Ted had never been involved with the club. The family wondered if our club would be interested in buying ham equipment from his estate. Sherry told the family that the club does not buy estate equipment but she gave the family some suggestions about where they could dispose of the equipment.

Membership Report. Sherry volunteered to call the family to inform them about contacting both RAC and Industry Canada and provide details necessary for having the call sign retired.

Health and Welfare. Mary VE3OGQ, had nothing to report this month.

Repeater Report. John Vandenberg VE3DVV, reported that a week ago an internet line was installed. Dan donated a monitor. The telephone

patch is on the UHF repeater and the system is being tested. The VHF repeater is not yet back in service. Members were asked to try the phone patch and report any difficulties. When the VHF repeater is back it will be cross linked.

Awards. Casey VE3CVP presented the special award to Renzo Conz, VE3NYX thanking him for his contribution to the Contest Group over the years.

Contest Group Report. Rick, VE3BK, presented awards for the 2009 Canada Day Contest to VA3DJ, VE3BK, VE3BAU, VE3DCU, VE3CXB, VE3EEZ & son Jesse, VE3NYX, VE3QEE, VE3RYI and VE3WBT. The original was given to Casey for the Club. We were first place in Ontario in this contest.

The end of this month (February) we are doing the CQ WW 160 Meter Phone Contest. It starts at 5:00 P.M. on Friday and runs for two days. The 160 Meter band is a night time band so we will need operators to take shifts throughout the night. Please tell Rick if you can come and arrange a time.

March 6th, if band conditions are good, the ARRL International 48 hour DX Contest will be on the air and it is a good one for you to run from home because you can get quite a few DX countries. Even if you only have time to make half a dozen contacts it is a good opportunity to get on the air.

Our next VE3DC contest will be on April 17th the Ontario QSO party. This is OUR contest so other operators will be trying to make contact with us. We are usually the only group in Haldimand County and this contest is a lot of fun, so join the group on that date.

Other Business. Mardy VE3QEE reported that David Hood VE3DHY has donated to the club a box of tubes and a dual-band hand-held rig, a Kenwood TH-G71A to be disposed of for the benefit of the club. Thank you David.

Important Points

Executive Meetings

HARC Executive committee meets each month, except July and August. Members are invited to attend. The meetings are on the Wednesday following the club General Meeting each month. Ask an executive member for the location.

VE3NCF 146.760 - & 444.075 + using tone 131.8

HARC operates VE3NCF repeater, located atop the Niagara Escarpment. It's open for use by all Amateurs. Special features are a privilege of membership.

Nets

HARC "check-in net" is held every Tuesday evening at 7:30 p.m. HARC "swap net" follows at 8 p.m. All contacts are welcome.

Examinations

Amateur radio license examinations are conducted the second Wednesday of each month, except July and August. Contact the voluntary examiners to make an appointment. There will be a fee for each examination.

Membership Information

Club membership, including all privileges, is \$25 per person, per year, Sept 1 to Aug 31. Additional membership, for immediate family living in the same home, is \$1 per person. One newsletter sent to each address.

The Hamilton Amateur

The Hamilton Amateur is published ten times each year (not in July or August). Deadline for article submission is the last Saturday of the month for the next month's issue. Preferred format is .txt file. Articles will be checked for spelling and grammar, but the author is responsible for factual content. E-mail submissions to Editor, Mardy Eedson, VE3QEE, <ve3qee@hamiltonarc.ca>

Gary VE3TTO had four announcements. First: the date of the *Paris to Ancaster bike race* is April 18th. If you would like to help out contact Gary.

Second: on April 17th there will be a CANWARN training session in Nash Auditorium. Everyone is welcome to attend this free weather watchers training run by Environment Canada.

Mark these dates on your calendar. Details are also on our Web Site at <hamiltonarc.ca>.

Third: PROCOM net is on Thursday nights at 8:00 P.M. It is an emergency response net and Gary is the Net Control operator. The net is on the VE3WIC repeater, 443.675 tone 131.8. Everyone is welcome to check in.

Fourth: Monday nights the PROCOM group will be hosting a new HF net beginning in March. The net will be on 3.650 MHz in the 80 meter band at 9:00 P.M. That net follows the informal HARC net that takes place Mondays on 14.135 MHz and runs from 7:30 P.M. until 8:30 P.M. or thereabouts. So if you have 80 meters please give the PROCOM folks a check-in on Mondays at 9:00 P.M.

Adjournment: 9:19 P.M.

How Computers And The Internet Are Helping Amateur Radio.

Some thoughts by Mardy Eedson, VE3QEE



A couple years ago a young reporter from the Hamilton Spectator asked to interview members of the Hamilton Amateur Radio Club. Her preconceived idea was that Amateur Radio was a dying hobby. Despite the

best attempts of the people she interviewed, Joe VE3OCD, and Mary VE3OGQ, the reporter's article when published still reflected her original conclusion. Well, if you are a ham that is active on the air, and if you read journals like TCA or QST or CQ, you will be certain that Amateur Radio is not only active and well, but is also experiencing a renaissance because of two huge influences. The first is the influence of the internet. The second is the influence of computer software.

How are computers and the internet helping with Amateur Radio? Let me list a few of the ways that come to mind, although I am sure there are more I haven't thought of.

Right now, even if you are not even licensed, you can have a conversation similar to a ham radio conversation over the internet. No radios are involved.

If you are interested in getting a ham radio license, ample information is available on the internet to get you started. You can even see what the qualifying examination is like. Questions and answers on the Industry Canada qualifying examination are available over the internet. You can take the test and have the same software mark your achievement, all in real time, either over the internet or right on your home computer.

Morse code seems to be making a revival as people are picking it up on their own using computer software to teach themselves and getting practice over the internet to build up speed. One program that is great for this is from G4FON, Ray Goff, found at <http://www.g4fon.net/>. He calls his method the Koch method. Incidentally, Ray has some other interesting ideas on his web site.

Websites like RAC or ARRL have huge resources available to members over the internet. For example, all past issues of QST magazine going back to the early 1920s are searchable, and an individual article can be downloaded and printed if you are a member.

A great many radio clubs have their own web sites featuring their newsletters meetings fleamarkets repeaters and links to other sites etc. Not to mention special interest groups like the American QRP Club (low power), or the HPSDR group (high performance software defined radio) who have active reflectors to exchange e-mail worldwide, reflectors which remain active day and night, because it's always daytime somewhere in the world.

On YouTube and other broadcast sites you can view demonstrations about everything from soldering to creating a Cabrillo file for reporting contest contacts. The web itself can now be your Elmer.

If you want to buy something, there are sites like e-Ham where product reviews are posted for you to read before making a purchase. You can view comments of people who have actually tried the item and written reviews about it.

Packet spotting nets assist contesters and DX chasers by posting the frequency of stations that are on the air, stations that you may want to contact. In some cases the software can even tune your radio to a desired frequency at the click of a button.

Electronic QSL cards and the ARRL Logbook of the world have made confirmation of contacts an instantaneous process and one that is also a lot cheaper.

Manuals for radios, both current models and older models, can be viewed and downloaded from internet sites. A lot of manufacturers post their operating manuals and in some cases the service manual as well. Manuals for older equipment can be found on the BAMA archive (Boat Anchor Manual Archive). Again these can be downloaded.

Newsgroups for each type of radio and each mode of operating can keep you up to date on an hourly basis. Examples could include the Flex Radio users group, or the Collins Radio Collectors group. There are countless additional examples.

A number of newer radios now have the capability to plug directly into a LAN or a WAN, local area network or wide area network using an Ethernet connector. What this means is you can be sitting on the second floor looking at a computer and using it to remotely operate your radio in the basement, or sitting in your winter home in Florida and remotely operating your rig in Texas controlling equipment over the internet.

In the past few years home brewing has taken off, once again, surpassing the way it was back in the time of the Heath Kit and Eico Kit building era. In the past a lot of ham equipment and testing equipment could be purchased in kit form and using instructions contained with the kit hams could solder together parts, align and test the newly built apparatus, and produce their own useful equipment at less cost than that of commercial equipment. Today, there are many opportunities to participate as builders once again. I would suggest, that there are more kits now than ever before. Parts are smaller and cheaper. Many of the newer parts are SMD surface mount devices which draw less electrical power are cheaper to produce and simpler to solder if you can manage their small size. Also, software has eliminated the need for a large number of parts, because some tasks that required analogue circuitry before can now be done inside the general circuits of the microprocessor in your computer. This means fewer physical parts, resulting in less expense for greater performance.

To answer the question, is amateur radio is dead, I think, not yet. To answer the question, is amateur radio being hurt by computers and the internet, I think hardly. More like amateur radio is being overtaken and rushed ahead by the presence of computers and the internet. I am a person old enough to remember a world without computers. My son is not. In his lifetime computers have been just another tool as commonplace as a ruler. When the younger generation makes up the bulk of the amateur radio

community, you can be assured that radio and computers and the internet will be integrated. You won't get a radio without a USB connector, just like you can't get a camera without a

USB connector (universal serial bus). We have entered a new era, but Amateur Radio remains alive and well, and benefiting in so many ways from new companion technologies.

Swapnet Listings

Ad# 87

TH-G71A handheld 144/440 MHz (02/23/10)

TH-G71A Kenwood dual band.
For details view or download the manual from the Kenwood web site. This rig was donated to HARC by a member.

Complete, with original box. ...

Location: Ancaster/Ontario **Price:** \$100.00

Ad# 78

Microphone Tester (02/18/10)

VC-7700 voice pitch controller
ES-9200 echo roger beep chamber.
Both in working condition. Best offer ...

Location: Simcoe/ **Price:** -

Ad# 79

Mobile & Base cb (02/18/10)

1 Northstar DX880HL CB radio "twin to the Galaxy Pluto " 10, 11 meter \$150
Uniden Madison base cb with stock mic & matching speaker, good working condition \$150
...

Location: Simcoe/Ontario **Price:** \$150.00

Ad# 80

Hygain Microphone (02/18/10)

Hygain
power mic model 610 power mic with vox. Best Offer

Location: Simcoe/Ontario **Price:** -

Ad# 81

Tuner (02/18/10)

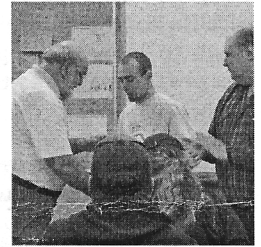
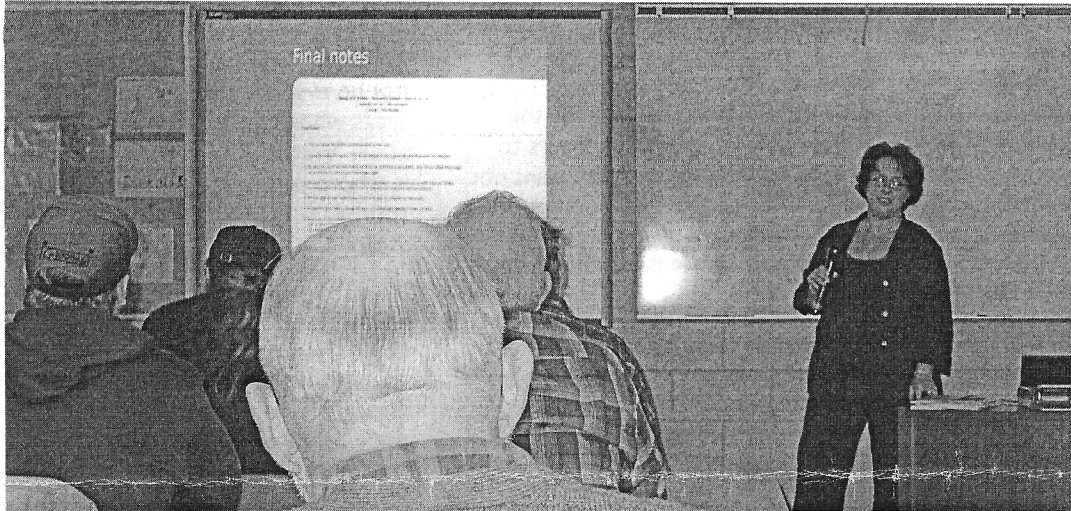
1-KW E-ZEE antenna tuner made by Decca. The same tuner sold for \$75 at the St. Kits Ham fest.
\$60 or Best offer.

Pictures at the following 2 links

<http://www.amtelecom.net/~boncrs/tuner/DSCF0640.JPG>
<http://www.amtelecom.net/~boncrs/tuner/DSCF0641.JPG> ...

Location: Simcoe/Ontario **Price:** -

Highlights from the HARC meeting February 17th



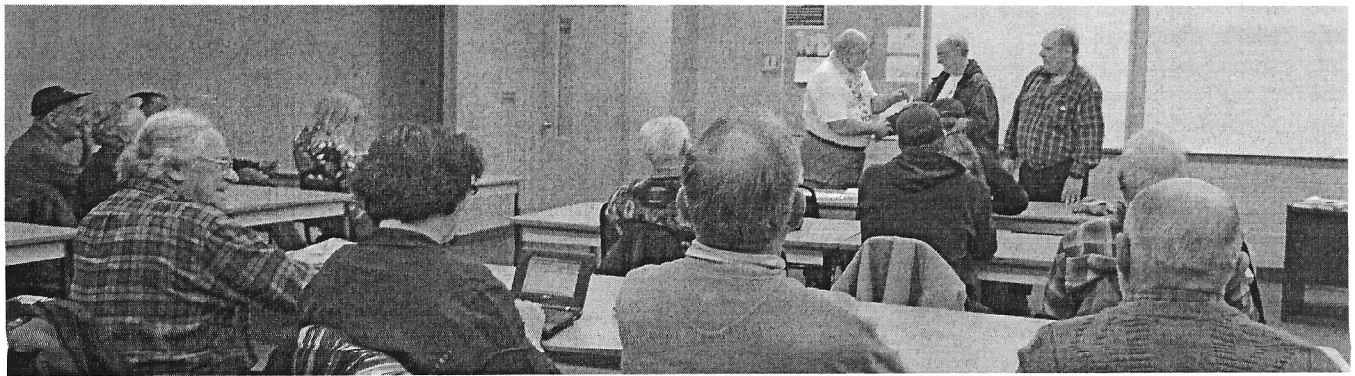
Guest speaker, Anita Thomas, VA3ANI, explains new features of our web site with aided by a power point presentation.

Above right, Sherry VE3DCU, and below right, Adam VE3BAU accept contest awards.



Above, Renzo Conz, VE3NYX, accepting a special award recognizing his contribution to the contest group.

Below, Jack VE3WBT, accepts a contest award from Contest Chairman, Rick VE3BK.



Textured Paint

A lot of ham radio equipment, especially older equipment, came with a painted finish that was textured with a rough surface that looked nice and was easy to grip. The colour was often black. How to duplicate this finish on modern equipment has been a mystery because nobody at local paint stores seems to know anything about paint that produces a raised textured finish.

Several months ago a few of us, after discussing this situation, set out to learn more about this paint and to try to find a store that stocked it.

Rick VE3BK found a fast drying lacquer based spray paint at Home Hardware that gave a very fine raised finish. The finish was quite similar to the finish on a microphone base. Rick bought a can of this and used it on several projects with pleasing results, although the paint did not produce the hard enamel type surface of the original paints. I also got a can of this paint and used it with good results. However the supplier stopped carrying this paint. Rick recently found it again. Here is his e-mail with details.

Hi guys: Remember I gave you the information for the Textured paint to give a real good look on power supplies, tuners etc.....well I found it again at Zeller's this time. This is not the real wrinkle paint like John found, but rather a textured paint that does a pretty nice job and dries fast.....no baking required. Not only do they have the textured paint, but they have another kind of speckled rough textured paint that looks good too. Check it out next time you are at a Zeller's. Here is all the information again and I will give you the number for the textured paint that I purchased. The price has gone up since they had it at Home Hardware, but I was able to get a dark grey that matches my radio. Name of brand: Excel textured finish, for plastic, metal or wood, fast dry -

interior / exterior. Zeller's #777863188618 (black) and # 777863188649 (dark grey). The price is about \$9.00 a can.

John VE3CXB was looking for the real wrinkle paint which appears to be a manufacturing specialty paint not available for consumer use. After much searching John did find the true wrinkle paint. Here is his e-mail with details.

The wrinkle paint is made by "VHT" and it's called "Wrinkle Plus". Product code SP-201-C. As far as I know it only comes in black and red. It's a high temp. paint used by auto restorers for valve covers, so if you've got a vintage Ferrari in your garage it will do nicely for that.

The place to get it from is Performance Improvements, 891 Upper James, between Hester and Lotus. Phone is 905-574-6940. I'd call to make sure they have some in stock, but when you ask for it they'll know what you're talking about. It was about \$11 a can if I recall.

The guy at the store warned me it was a bear to use, and this is what I recall from the last time I used this type of paint. Follow the instructions. Heat is the best way to make the wrinkles form. For a small object I used a heat gun but if you're doing something larger like a front panel or cabinet the best way is to bake it in an oven. "BE CAREFUL" there are smelly fumes and the paint is flammable. Using a heat gun on a large surface could cause problems as the wrinkles will not form evenly due to the limited heating area of the heat gun. Uneven heating will lead to uneven texture and/or ridges. Don't ask me how I know!!!

The surface to be painted should be very clean. No oils or grease, etc. Some people say it works better on bare metal as opposed to a primed surface. I can't swear to that one way or another. I have painted over a previously painted surface with no ill effects. You have to lay down 3 coats within 30 min. Make sure you follow the instructions.

You can let it air dry but it might take over 24 hours, and the wrinkles may not be as small and tight looking as they form with heat, the wrinkles may not be even, or there may be clear areas where the wrinkles don't form at all. Watch out for corners as this is where you can really get uneven results. Don't overspray in inside corners.

It's also important to keep the nozzle clear. The paint is thick and if you don't clear it you'll get blobs and spatters on your finish. Do all your painting in one session. After you're done painting pull the nozzle off and clean it out either by blowing air through it or using some solvent. Good luck, John, VE3CXB.

A Solid State Blast From The Past

by John Hudak VE3CXB

I have little doubt that many of us 50+ year olds in the club are probably nostalgic about tubes. I like them as much as the next ham. However how about being nostalgic about transistors? Yes, they've been in existence now for over 60 years and there are people out there who collect vintage transistors and diodes. I shudder to think how many "oldie but goldie" semiconductors I've thrown out over the years that might now be worth something. A quick check of my junkbox shows that I still have a few goodies that date from the 50's and 60's, including my very first 1N34 diode that I bought with my paper route money to build a crystal set.

If you want to have some fun looking over "old" semiconductor devices check out these two web pages. There's a ton of historical info and a lot of pictures and circuit diagrams, but the pages are not particularly well laid out so you may have to dig a bit. Enjoy.

<http://transistorhistory.50webs.com/>

http://semiconductormuseum.com/Museum_Index.htm