



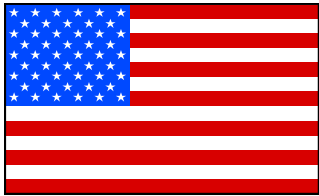
The "Speaker"

The Voice of Nesda Ohio



Electronics Servicing Professionals

November 2011 Edition



NESDA
American Pride

Visit our Website
www.nesda-ohio.com

In This Issue

October Meeting.....	1
CET Teaser.....	4
Tech-Tips	4
Sanyo DVW-7000	6
Featured Business.....	7
There's A War On	8
Panasonic SA-AK600.....	9
NEC CT-1420	12
Onkyo TX-SR500.....	14
Computer Illiterate	16
Service Nazi	17
Meeting Info	18
Teaser Answer.....	18

nesdaOHIO Meeting 10/18/11

BY: Speaker Staff Writer

Tuesday, October 18th marked the beginning of the Autumn meetings of nesdaOHIO following a summer's Hiatus. Attendance falls off during the summer what with Vacations and Holidays and Member's having Fun in the Sun. It seems that Many members would rather spend time with their families instead of attending a meeting of nesdaOHIO – Go Figure !.

To celebrate our return, The nesdaOHIO Ladies' Auxiliary provided us with a FREE MEAL. Mrs. Sopko made some Lasagna, Salad, and Garlic Bread. Dessert was FOUR different kinds of Cookies made by Mrs. Uminski and a Banana Split Cake made by Mrs. Skoff. We - and our waistslines - thank the Ladies for their Kindness.

Our First Autumn meeting is really the annual Weekend of Training in September, which brings together nesdaOHIO members from across the country - and our International members, too - but on This day, Local Members gathered at the Clarion Inn in Hudson Ohio at 6:30PM for an evening of uproarious entertainment.



nesdaOHIO's resident Computer Illiterate, an Avowed Luddite, a Man who doesn't even own a Cell-Phone, was scheduled to tell us everything that he knows about "Wireless Networking". THAT took about 5 minutes... and the Laughing & snickering subsided after another ten minutes. After the discussion of "Wi-Fi Basics" was over, a REAL technician, Phil Skoff, showed us some valuable techniques that you can use to troubleshoot your customers' wireless network that his "Internet TV" is connected to. The Goal is to be able to quickly demonstrate that the fault lies NOT with his television.

Phil set up a Samsung Wireless TV that he brought along with him. While *The Computer Illiterate* was droning on and demonstrating his ignorance of anything that does Not contain a Vacuum Tube, Phil was setting up the Samsung to connect to the Inter-Net. He did it in a very clever manner, since we could not connect a TV to the Hotel's Wi-Fi. Phil used his Cell-Phone to provide the Path to the Inter-Net - and said that this was something you could do in your customer's house to prove that his TV "Works". He also produced a Wireless Router that he had just bought to demonstrate its use as a test bed in case you don't have one of those Fancy Schmancy Smart Phones. If you bring your own Router and are able to establish a connection, your work is done since it is not a TV problem.



Chief writer

Joe Sopko Sez....

Only in America

do drugstores make the sick walk all the way to the back of the store to get their prescriptions while healthy people can buy cigarettes at the front.

Newsletter Hotline !

Got A News Item ?
Tech-Tip ? Correction ?
Please Contact:
Joe Sopko, 216-381-1140
jsopko112@aol.com
OR
Ron Purkhiser,
352-666-4773
rpurkhis@tampabay.rr.com
Issue #125

It should be noted that using a router still makes you dependent upon the customer's Modem, while using the cell-phone makes you completely independent of the customer's equipment.

Phil showed how to enter the Network Setup menu of the TV and how to set the settings therein to make the connection. Then he went to the NetFlix web-site and showed how to play a movie from the Inter-Net. He even showed how to inject a movie - or pictures from your lap-top into the TV's Ethernet ports using an Ethernet "Crossover Cable".

Next he went on to show us how to check for "Interference" problems. Interference caused by "Other" hotspots operating on the same frequency and channel can cause pixelating and freezing. There Are "Sniffers" that you can buy that will detect Wi-Fi access points and give you information about those Hot-Spots, but Phil showed us a Handy-Dandy FREE program that you can download and have your Laptop act as a "Sniffer." Found at <http://www.metageek.net/products/inssider/> This will "Sniff out" and list Hotspots (Even those with Hidden SSID's) right on your computer screen - and at the bottom of the screen it has a miniature Spectrum Analyzer so you can see frequency overlaps. Often SSID's are hidden for added security. Did you catch the Pun in the program's name? "insider"



With whizzing fingers, *The Computer Illiterate* connected the nesdaOHIO Toxic Notebook Computer to the hotel's Wi-Fi and downloaded that program right there in class - and he even managed to Install it and get it to Run. (Quite an accomplishment for him). This was projected onto the room's screen for all to see how useful a program like this could be. This seems to signal a Sea Change in how we service televisions. Imaging taking a Lap-top and a router on your service call instead of a Multimeter. We could hear *The Computer Illiterate* groaning as the implications struck home. He was heard to be asking about where one goes to submit his retirement papers.

While us Men were solving the problems of the wireless world, the Ladies retired to another room where they took up their Knitting Classes right where they left off last meeting. If your wife or Girlfriend would like to learn to knit, bring her along to the next meeting. (Christmas is coming and You can be dropping hints about that sweater you always wanted.) Mrs. Sopko showed how to make a Cable Stitch pattern, and by the time WE were done, a few feet of Scarves had come dripping off of the knitting needles. If your Wife - or Girlfriend - or Weird Male Relative - would like to learn to knit, please tell (Tenn48@aol.com) if she/he/it would like to attend the next session.

Just before we all left for the night, S. Euclid member Joe Sopko (Consumer Service Co.) asked for a few minutes of "Show & Tell". He asked if we wanted to see his Crack. (GASP!) Very few people really wanted to see THAT, and we started to Flee for the Door, until he explained "NO-NO! - I mean a crack in an LCD Panel". He said that he had a hotel bring in 5 LCD TV's - some had obvious cracks in the panels, but one of 'em had an "Undisclosed Crack". Joe said that the Panel Looked Perfect from the front, Even if you shined a Flashlight onto the screen, but when he fixed the TV's Power Supply and the Backlight's lit up THEN the crack was painfully obvious. He had removed the panel, stripped away the Backlights and Diffusers, and showed us both sides of the LCD screen. This served as a reminder that things are not always as they seem, and that you would have a hard time convincing the customer that YOU didn't break his panel. We were Very glad that Joe didn't show us the "Other" Crack!

NesdaOHIO President Bob Lowe brought down the gavel to end the meeting at 10:15.

**See Ya Next Month... Next Meeting Nov. 15, 2011, Same Time, Same Place:
Clarion Inn, 240 Hines Hill Rd, Hudson, Oh, 44236**

NESDA of Ohio

State President
Bob Lowe, CET/CSM
440-247-7391

State Vice President
Tim Murtz, CSM
440-232-5620

State Treasurer
Rich Uminski, CSM
216-641-9470

State Secretary
Joe Sopko, CET
216-381-1140

Directors

Jim Mancuso
330-467-0777
Jeff O'Connor
724-775-7123

Newsletter
Joe Sopko, CET
216-381-1140

Ron Purkhiser
352-666-4773

DISCLAIMER

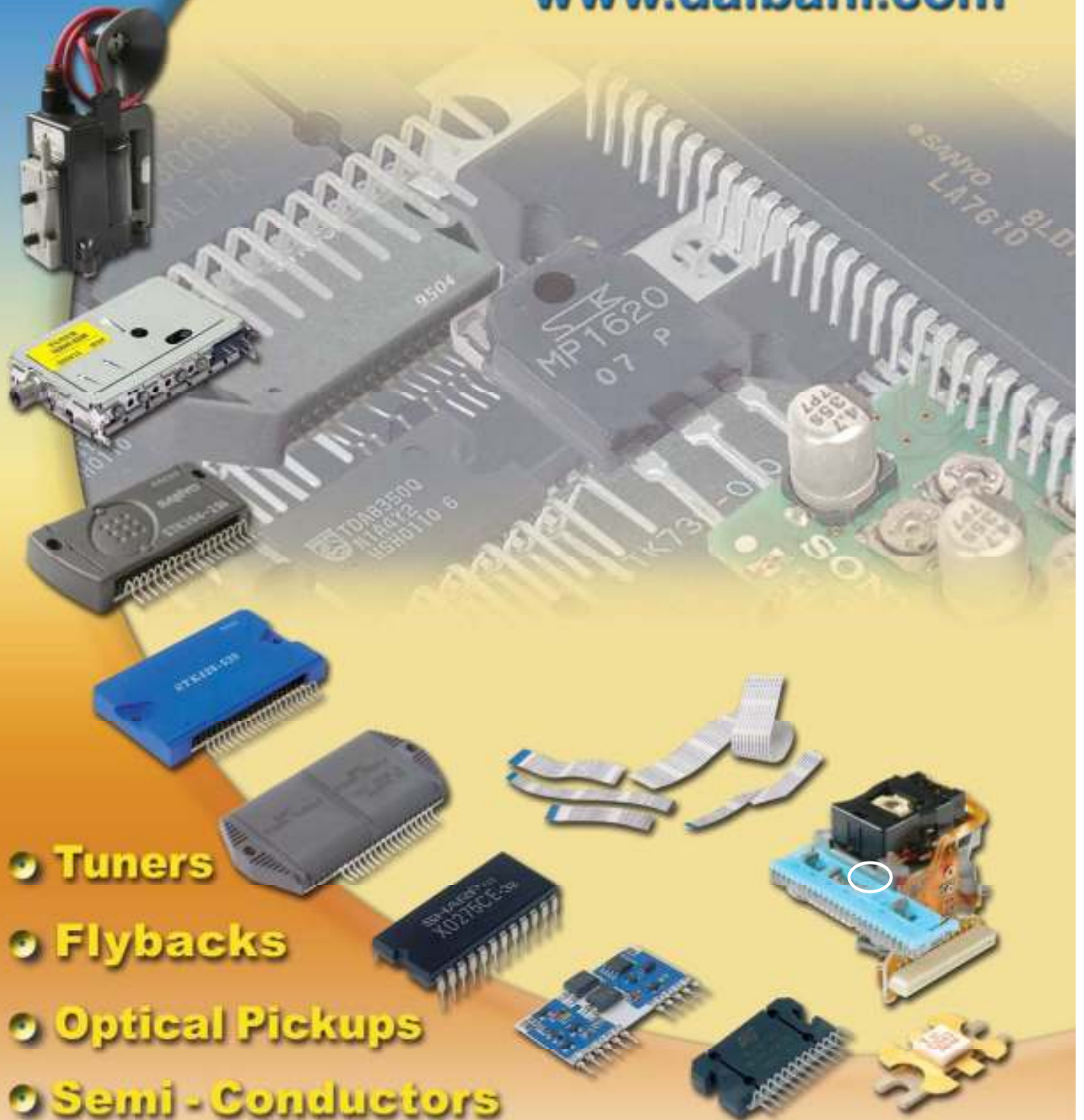
Information presented in "The Speaker" is derived from many sources and is believed to be correct at time of printing. We make no guarantee, express or implied of the accuracy, efficacy, or safety of any of the techniques published. It is not intended to replace Manufacturer's Recommendations or good Safety and Troubleshooting practices. Use at your own Risk. The Speaker, its Writers and Staff, and Nesda of Ohio assume NO responsibility for damage to persons or property as a result of any information printed herein. Opinions stated are those of the author and not the Nesda of Ohio Newsletter. Opinions stated are believed to be true, and are offered in the spirit of helping other servicers but may have no basis in fact.

Dalbani®

Serving The Electronic Industry Since 1982

Catalog
22

www.dalbani.com



- Tuners
- Flybacks
- Optical Pickups
- Semi - Conductors

CET Brain Teaser



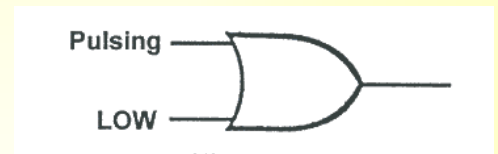
From the CET Study Guide and Practice Test

TODAYS QUESTION is presented in The Speaker just for fun with the permission of the ISCET, and maybe will get you started thinking about hanging out your own CET shingle. For more information, we invite you to visit the ISCET website at www.iscet.org We are grateful to them for allowing us to present this feature.

Today's question is from the CET Associate level Study Guide provided by ISCET.

Which would be the most useful instrument to troubleshoot a TTL circuit such as the one at the right ?

1. Oscilloscope
2. Logic Probe
3. Multimeter
4. Function Generator



Correct answer on Pg 18

Tech Tips

Philips TV, PTV915

Problem: No video or audio, but has HV
Fix: Replaced the following: Diode 6003, #934055352115, resistor 3669, #482211711503, Diodes 6012 and 6025, both #934055352115.

RCA TV, DTV307

Problem: Dead, but the DM module fan was running.
Fix: Replaced bad caps, C14113 and C14115 on the DM1 power supply board.

Samsung TV, UN40C5000, LED LCD

Problem: Set had sound by no picture.
Fix: Remove the ribbon cable going to the signal board, trim the end square, and make sure it is seated all the way in the socket.

Mits TV, WS65807

Problem: High Voltage doesn't come up.
Fix: Replaced IC5A03 on main board. 270P704010

Hitachi TV, DP27, model 51SWX20B

Problem: Intermittently, no video.
Fix: Replaced Horz Generator, IH01.

Hirachi number, CP07091

Sanyo TV, DP32746

Problem: Dead, relay clicks
Fix: Replaced 4A ferrite protector on the power supply board. R678

RCA TV, CTC203CA5

Problem: Guide Plus displays every time the set it turned on.
Fix: Go to guide plus setup, and enter all zeros for the zip code.

Samsung TV, HLT5075SX

Problem: Lamp not starting, might start after several attempts. All 3 front lites blink.
Fix: The sensor on the color wheel is bad. 4 pin sensor, BP96-01854

Philips LCD TV, 42PFL7422D/37

Problem: No back light.
Fix: Installed inverter kit #996510007721

Vizio TV, VX32LHDTV10A

Problem: Back light is on, but no audio/video or onscreen. Front amber lite changes to white and set locks up. Must unplug to turn off.
Fix: Found U33, 3.3V regulator, on main

module bad. Part #AMC1117A

Panasonic Plasma, TH42PZ77U

Problem: Dead, blinks red seven times.
Fix: Replaced the SC board. TXNSC1NZTU

Mits TV, V10

Problem: Set goes into shutdown.
Fix: Found a bad cap in the 24V supply. C920, 10uF/100V

Hitachi TV, 46UX10

Problem: No HV, just noise for sound
Fix: No Horz drive, Found bad solder on T701. Resoldering fixed the set.

Magnavox TV/VCR combo, CCR133AT01

Problem: Set was dead.
Fix: Found open cap in power supply. C07, 220uF/6.3V

Philips TV, 20PS40S171

Problem: No audio.
Fix: Must have been a bad trace. Running a jumper from Volume control Pin4 on the micro to pin 9 on the audio IC, fixed the set.

We Bring TVs Back to Life, One Board at a Time.

ModusLink has been performing top-quality testing and repair of television main boards and other electronics for 45 years. Our end-to-end services include returns management, core management, sub-assembly repair, whole TV repair, integrated forward distribution and e-waste management.

Browse our inventory at:

www.moduslinkparts.com

moduslinkparts@moduslink.com



ModusLink
www.moduslink.com

*As one of the nation's largest sources of TV main boards,
if it can be fixed, we'll make it work!*

GRAND ROUNDS



A continuing feature here at "The Speaker" suggested by the practice used by Doctors in large teaching hospitals to distribute information about case histories. We actively solicit information from YOU, our readers, to be presented here for the benefit of all. Please send your submissions via email to: jsopko112@aol.com.

ATTENDING PHYSICIAN: **Dr Alfred Kinsey**

TODAYS CASE HISTORY: **Premature Ejaculation**



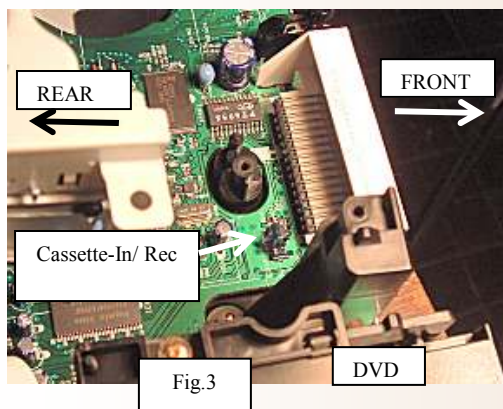
PATIENT NAME/NUMBER **SANYO DVW-7000**

OBSERVATIONS: Yes, we've all heard of that condition, and I certainly do hope that it doesn't happen to you – But just in case it does, I would like to discuss this case of that malady. The Patient - we'll just call him "Mr. Sanyo" - was brought in by his significant other who was wearing a large frown.

DIAGNOSIS: The Patient's covers were removed and the symptoms observed. When a VCR Cassette was inserted, the FIP Display would immediately change from Stop to "Eject" and the cassette would be immediately ejected. "Immediate" certainly qualifies as "Premature" for we did not even get to see the movie's opening credits. Attention was directed to the mechanism which detects the insertion of the disc and causes it to be drawn into the VCR.

One would expect to see that sensing mechanism at the Right hand side of the mechanism, as that is where the release latch for the cassette holder is located, but that is NOT the case on this VCR. Instead, cassette insertion is detected by the Record Inhibit Switch. Doubling as a "Cassette-In Switch", the switch is a teeny-tiny, board-mounted switch located at the left-front of the cassette holder.

(See Fig 3).



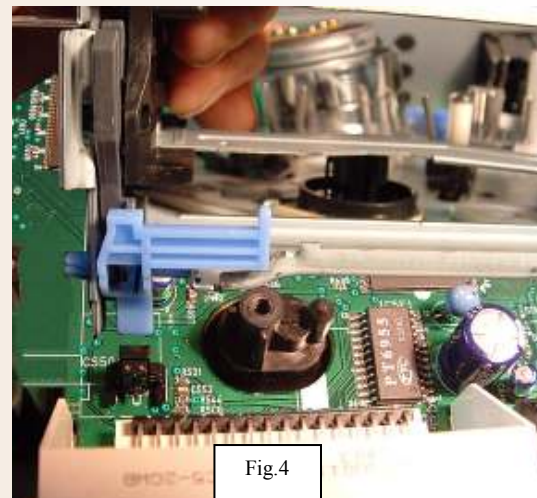
TREATMENT: In this side-view, with the VCR Deck Removed, you can clearly see the switch in question. The cure was easy to affect with a dose of Tuner Cleaner. Just a couple drops on the Tongue of the switch allowed the chemical to be absorbed into the Switch's contacts so that they would make a good closure when the tape was inserted.

The Maker's intention is that when the Tape is inserted, the motion of the cassette holder (See Fig.4) would be transferred to the Blue Plastic Actuator that would close the switch and initiate start of the loading motor. With bad switch contacts, the VCR would erroneously and immediately think that the holder is empty and return it to the Full-Eject position.

POST OP: While the deck was removed, the Mode-Sense switch was disassembled and cleaned as a preventative measure. In a round of Physical therapy, the patient was able to Run Tape and Play with DVD's for an extended period of time. It was noted that the only time that Ejection occurred was at the end of the movie.

This ends the Grand Rounds for this session.

See you next month



FEATURED BUSINESS OF THE MONTH

Company:- The Travelling TV Technician

Location: Mississauga, Ontario, Canada

Owner: Andy Chan

Credentials: CET, MST, A+, Network+

Age: 60

**Family: a Wife, Three big kids
(one boy, two girls, still living with me)**

Pets: a 5 month old golden retriever puppy.

Hobbies: Watching TV



It has been a while since we have featured a business here in The Speaker. We send all of our nesdaOHIO members a questionnaire when they join our association, but we unfortunately get very few of them returned. We are pleased this month to introduce New Member Andy Chan, from our neighboring country to the North, who Did send it in. Andy is from Mississauga, near Toronto, and he will add to the International Flavor of our nesdaOHIO, along with our other members from the far side of America's borders.

We asked Andy to tell us about himself, and he had this to say:

Andy says that his "Store" is really at his customer's location because he services most TV's at the customer's home - Hence the name of his company: **The Traveling TV Technician**. Although he has been in the TV business since 1971 , he has been in business by himself for 9 years.

Andy started as an apprentice in a big TV service department in Hong Kong, where it is a service depot of the German color TV set (PAL color system). At the time, Sony and Panasonic were very small in Europe and Asia and not appear on the radar yet. The picture or color was no comparison to German's Grundig, or Telefunken or Siemens.

Andy started as a helper to the TV technician, and cleaned the floor and did all kinds of dirty work. At the end of the day, he went to night school and studied electronics, (The Far East Radio College) for 2 years. In 1973 he came to Canada and continued to repair TV ever since.

Right now his company is only focused on TV Repair. "Before that", Andy says "I used to repair all kind of Radio, Camera, VCR, Stereo."

As "The Traveling TV Technician", my business is unique to other shops in the area because I repair most of the TV's in customer house. If I need the module, I order it and fit it right in the house. if its the Samsung power supply(cap job), I do it right the house".

"Well , sometimes you get caught in a tough situation." he says, " If That's the case, I bring the whole TV back to work shop. If it's a projection TV, I take the whole guts out back to the workshop. It's not easy ,but can be done."

"I am a one man shop, I'm limited to what I can do, especially paper work, warranty work, and so I have declined to do that".

Andy has been to the Ohio Sept training since 2006, and he would like to say that "This is a great organization, year after year , you guys have done outstanding job to promote and help other technicians."

He has sent us 2 picture, one is 2011. the other picture 1971, the oscilloscope besides the picture, its tek453, 60meg, military scope. It still works 100% after 40 years! I call it great electronic equipment, and that's the way it should built.

Join us in welcoming Andy Chan - The Traveling TV Technician to nesdaOHIO

Andy:

www.travellingtvtech.com

andy_c@rogers.com

andy@travellingtvtech.com

my address: 4461 Idlewilde Crescent

Mississauga, Ontario, Canada,



There's a War On

BY: Joe Sopko

Y' Know, That's a phrase that you don't hear much anymore... And Maybe that's part of the problem. Used to be, if the United States was in a war, you KNEW about it. US manufacturing Ramped up to produce war materials, Everybody had a relative in uniform, Shortages of consumer products were rampant because of diversion of materials to war consumption, and there was rationing of just about every item in your daily life - for Everyone.

Today, we got Troops in Iraq, and Afghanistan, and Pakistan, and these wars barely touch you. That IS a problem because unless a war is "Inconvenient", it is liable to go on forever. Lets face it - War is Hell. War is Supposed to be Hell. War is supposed to be so horrible that No one in their right mind would ever want to engage in one, and here - unless you've had a loved one killed in these places you would never know that 'There's a War On'. You are able to go on with your life just as you have for the last 40 years with never a thought to people dying in horrible ways across half a world.

Contrast that with how it was on the Homefront during World War 2. Your writer is much to young to know about these things, but he has listened to people the age of the nesdaOHIO officers discuss how things were on the Homefront during the early 1940's. In case you are not privy to these recollections of the nesdaOHIO officers, a very good collection of these wartime experiences with shortages and rationing can be found at the web-site found in the following URL.

<http://www.ameshistoricalsociety.org/exhibits/events/rationing.htm>

It would be an instructional reading for those of the younger generation to see what our parents had to go through. Refresh your memory about what "Total War" means and think of how You would deal with these situations. Be sure to read more than just Page 1. We all know about the WW2 rationing, but I think the we have forgotten about the degree of sacrifice that was required. While you're at it, remind your congressman.



Armistice Day
Friday,
November 11th



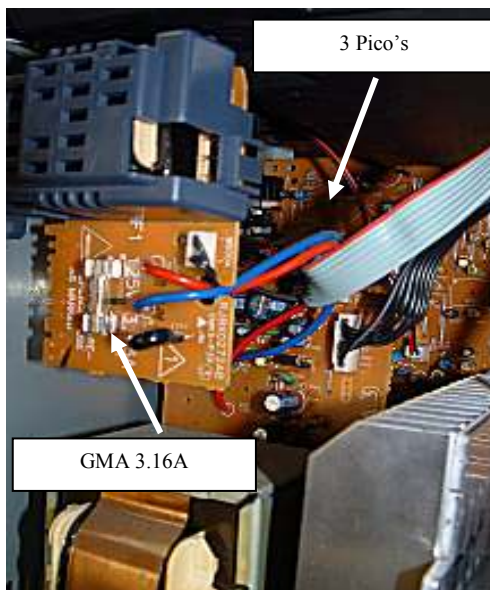
POETRY CORNER

By: Monsieur Josef

With apologies to Elizabeth Barret Browning, who wrote "*How do I Love Thee / Let me count the Ways*" and inspired this column I paraphrase that into "*How have I been Faked Out - Let me count the ways*". I never intended this column to become a regular feature, But I keep finding ways to get Faked out while repairing equipment. Learn from me in this *edifying* piece of open verse, so that *-oh dear-* it doesn't happen to you.

Today's *Lovely* poem involves a **Panasonic SA-AK600** Stereo that was brought into my *repair salon* for a problem of "Shuts Down". The owner sets this *darling* little piece down on the counter while saying "It only comes on for a second, and it shows "F61" on the face, then it turns itself right off". Would you believe that the *Silly Man* thought that that was some sort of code that would tell me just what the trouble was? He said "It's only something minor".

I tell you, *my dears*, it was all I could do to keep from laughing right in his Face! As it was, I merely pulled my *Kerchief* out of my sleeve and *Giggled softly into it*.



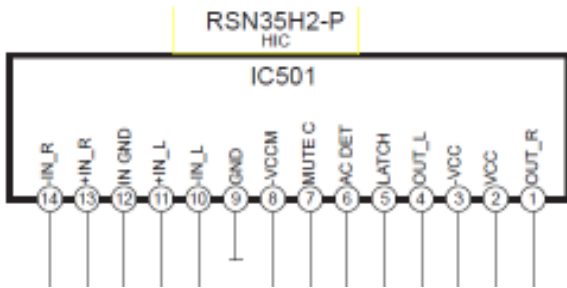
I (*Ahem*) Removed his covers (Not the Man, *You Silly*, I mean the Stereo!) and peered into the Bowels of the machine. On the AC Input board, I found a *Dainty* Glass GMA sized fuse, but it was good, as it should be since the unit Did light up, after all. Behind the AC Board was the Transformer board, and there were 3 *cute little* Pico-Fuses, none of which were part of the problem. Each of those *dear* little Pico's was in series with a leg of the Power Transformer's secondary to provide a measure of Protection – and I *Always* encourage the use of *Protection!*

With none of the fuses being at fault, it was time to move on. "*Love 'em & Leave 'em*", I always say...

This unit uses a Cooling Fan on the Back Cover, and I know from past experience that the fan could be at fault and throwing that F61 code, so I substituted with a generic fan that I had *laying* on the shelf from a set that I had scrapped. The fan did not so much as Budge when the power switch was pressed, and a quick *Lick* with the voltmeter showed that there was no voltage being applied during the short time before it would turn off.

My *Roving* blue eye next fell upon the Power Amp Board. I Saw 3 Thick-Film IC's which I assumed were the Power Output Devices.





I down-loaded the Schematic from the Panasonic web-site, through the portal so generously provided by them via the nesda website. – Or, at least I THOUGHT I did, and here is where Ms. Browning comes into play and I add another item to the list of how I have been Faked Out.

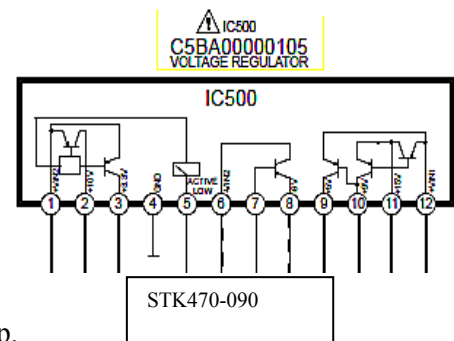
It seems that “My” SA-AK600 that I was working on has NO Suffix Letter. The schematics available for down-load all DID have suffix letters attached to them – like a SA-AK600**GC** or a SA-AK600**P**. Granted, most of those downloads were “Supplements” and “Parts Changes” but the fact remains that NONE of them available there were for the same unit that was sitting under my nose.

The “Basic” data seemed to be in the “**P**” version so I downloaded that – and then some of the others and went looking for the RSN35H2 Audio Output chips that I see mounted to the heat-sinks. I wanted to look up the Pin Numbers so that I could check for a DC Offset on the Speaker Lines.

I was so Distracted because I never did find a single RSN35H2 in any of the data that I looked through. I Looked & looked until I *thought I would go blind* but I made sure that I did *stop in time*. If it’s in there, it is Very Well Hidden! All I could find were some “Other” output chips like RSN311W64, but that *just wouldn’t do*. So then I went Googling. *My Dears* I can’t tell you How Much time I spent looking for a datasheet for that filthy RSN35H2, hitting dead-end after dead-end, but my perseverance paid off when I finally found one and down-loaded it *Toot-Sweet*. I’m not sure just where I found it – it may have been from Elektro-Tanya – But with the Pinout in front of me, I was able to eliminate the RSN35H2 chip as a source of trouble. I originally thought that there were TWO of these IC’s, but as I had to look closely to measure the Pins, I saw that the “Second” chip, hidden partly behind another heatsink was really a RSN314H41 – and *Heavenly days*, That was shown in the same schematic. Each of these two chips contains 2 amplifiers. One serves to supply sound for the Left & Right channels, and one for the Center & Surround channels. I went right down the pins, measuring B+’s and DC Offsets and found them to be normal for all 4 channels.

My, I do so go on, don’t I? I must be getting to tell you what the real trouble with the stereo is, and to tell you how I got faked out. We would all like a good laugh, wouldn’t we? Well, there is a THIRD IC Mounted on a heat sink on that Power Amp board, and I thought that must be another audio output IC. Try as I might, I just couldn’t see any IC Labeled STK470-090 on any of those schematics that I had down-loaded – *really, I couldn’t*. I Did find an IC labeled IC500, just like my IC, but the schematic showed that to be a Voltage Regulator and had it’s number as a “C5BA00000105” and NOT the STK470-090 that was in this unit. That set me off to some more fruitless searching for “STK470-090 Amplifier” or variations on those keywords – again hitting dead-end after dead-end (*What is it with these Manufacturers and their lack of Datasheets?*)

After a substantial amount of time, the light bulb over my head Finally came on, and I changed my “Mind-Set”. More looking around on the computer showed that the C5BA00000105 (Panasonic Number) is actually a STK470-090 (Generic Number) and that they are one in the same IC! NOW I treated it as a Voltage Regulator and measured the “Gizintas & Gizottas” (Voltage “Gizinta” THIS pin and “Gizotta” That Pin) and I discovered that there was NO voltage coming out of Pin 2 – Nor was there 3.3v coming out of Pin 3. The internal view of the IC in Fig. 5 shows that “If you don’t got the 10, You Aint gonna have the 3.3”. There Was 18v entering the IC on Pin 1. That Pin 2 should be the 10 volt B+ line, so I applied 10VDC from an external Power Supply and the Unit powered up, the F61 disappeared, the CD Player came alive, and the *Melodious* tones of *Johnny Mathis* filled the room. *I was so happy I could just Cry!* I had been faked out by thinking of that IC as an audio amplifier when it was actually a Voltage Regulator!. Whyinnahell would they put a Regulator in with the Audio Amps?!?! *HMMPPH!!!*



The owner was given the estimate – which was NOT for a “Minor repair” as he had originally stated, but it was approved and the unit sent back to his *significant other*

...And so to answer the question in the First Stanza: *How have I been Faked Out? "I've been Faked Out to the Depths of the Ocean, and to the Heights of the Sky"*.



You can't compare
apples to oranges.



When it comes to parts suppliers,
Encompass outperforms the competition.

Encompass is one of the nation's leading distributors of top-quality genuine replacement parts and accessories for a wide-range of consumer electronics, computer, imaging and major appliance products. With nearly 60 years of proven industry expertise, Encompass is the trusted partner your business can depend on for all your parts needs.

The Encompass Difference

While there may be other distributors in the market, none can match the experience, comprehensive inventory and value-added services Encompass offers:

- **EncompassParts.com**, our robust e-commerce website enabling your business to:
 - ♦ Look up parts by model and version
 - ♦ Check parts availability and pricing from web-enabled mobile devices
 - ♦ Access exploded views and download service manuals
 - ♦ Create and view open RMAs
 - ♦ View open cores
 - ♦ Track order status
 - ♦ Download billing statements
 - ♦ Print prepaid return labels for non-LTL returns
- Services and solutions to support field service operations
- Reliable two-day ground shipping to most of the country
- **New! EncompassImaging.com** website featuring imaging and computer parts only for quick access to all the top brands
- **Green Choice** reclaimed parts, saving the environment while improving your bottom line
- Compatibles, providing a less costly alternative to original parts without sacrificing quality
- Fast, efficient returns processing
- Volume-based customer incentives
- Dedicated team of knowledgeable, helpful customer service representatives



For parts information and to place
orders, please visit encompassparts.com or call **800.638.3328**.





The Adventures of Sherlock Ohms

By: John H Watts-on MD

The Adventure of the Squealing Telly

It was a dark and stormy night that found Sherlock Ohms, the world's foremost consulting detective, and myself – Dr. John H. Watts-on once more in the “Colonies” as Ohms is wont to call them. We had arrived for the annual nesdaOHIO Weekend of Training event and had such a pleasant time that we had decided to stay on for a few weeks and visit all of our Northern Ohio Friends. “What a Delightful time we’ve had, Watts-On” said Ohms, to which I readily agreed. “I shall hate to return to England, but with the October weather turning, we can get the same nasty cold back home. Let us make the rounds with our Leave-Taking and say good-bye to all our friends.”

Thus it was that we found ourselves at the shop of our friend on Mayfield Road in South Euclid, Ohio. “Hello, Joseph”, said Ohms as the Bell announced our entry. “I am Glad to say that we did not encounter any Indians today” – Alluding to the fact that Mayfield Road was, at one time in the distant past, an Indian Trail extending from Ohio on up to Detroit. The Proprietor looked up from his work and greeted us warmly as he does all who enter his shop. “Welcome, my friends. Let me stoke up the Pot-Belly and put on some Cocoa. We are having a taste of the cold weather to come today”. We all agreed and Ohms explained that the time has come for us to end our visit to “The Colonies”.

We spent some time in idle chit chat with the proprietor remarking amiably that he would be sorry to see us go. The feeling was mutual among close friends, and then Ohms remarked “You seem to be working on a piece of Vintage equipment, Joseph”.

“‘Vintage’, Mr Ohms?” replied our friend. “Hardly. Now, that 1940 Philco that I was working on earlier today – THAT’s ‘Vintage’. This NEC CT-1420 is only a Youngster, having been born in 1986. I am trying to prevent a premature death and perhaps you would like to take a look for yourself.” Which Ohms did with alacrity.

“I see what you mean, Joseph”, said Ohms. “**No Power** – and Such a hideous **Squeal**. Is it the Horizontal Drive or the Power Supply that is making such a racket?”

“That’s difficult to say, Mr. Ohms” said Joseph. “As you know, sounds above and below the normal voice range are difficult to localize. They seem to be coming from Anywhere.” So the three of us all tried our ears around the Telly but to no avail. We couldn’t tell if the sound was emanating from the Flyback Area or from the Power Supply area. Ohms was of the opinion that it would be SMPS related since with his violinist’s ear he pronounced that the tone was not a “Half-H” sound. “Half of the Horizontal frequency is the sound that we commonly hear from the Horizontal Circuit” pronounced Ohms. “Half of 15,750 cps is around 7.5kc, and the tone we have is not quite that high. I recommend that you concentrate your efforts in that ‘Stand-Up’ SMPS hanging off the left side of the chassis – and perhaps you could provide one of those wonderful schematics that Detective Howard Sams publishes.”



“I wish I could, Mr. Ohms” said the proprietor. “Only thing is that there is not this NEC CT-1420’s model listed in their Index. I also searched the annals of the Tech-Assist Service Forum, which contains a great many schematics, and I also tried the “ESP” web-site and that of our old friend ELEKTRO-TANYA, all of which had nothing on this model.”

“Hmmm...” I Said, looking at the picture our friend had put upon his computer. “Looks to me like the only ‘Model’ around here is ELEKTRO-TANYA”.

“Steady there, Watts-on”, said Ohms. “Maybe we Have been away from home for too long now. ELEKTRO-TANYA is NOT related to Bob Lowe’s cousin Trixie, and she Has helped us out from time to time with schematics that you cannot find anywhere else. She Does list a CT-1420, but the schematic does not bear any resemblance to the product that is in front of us, so it cannot be used.”



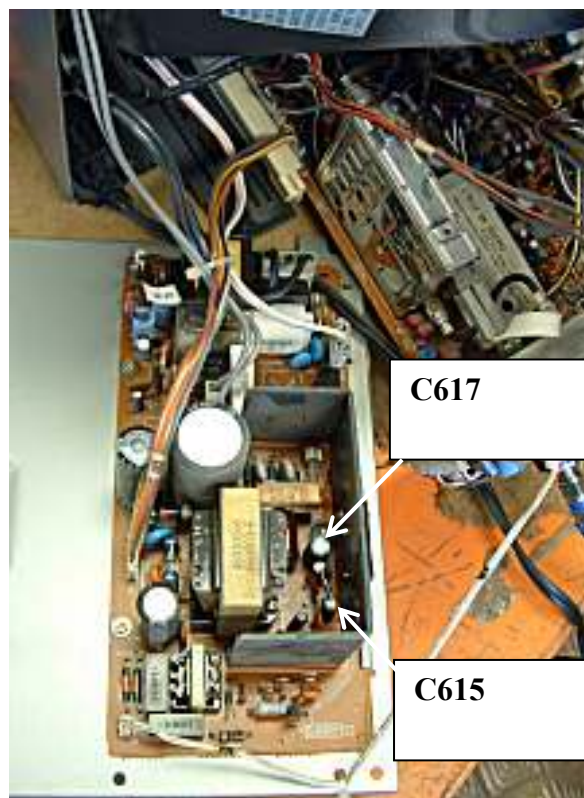
Bob Parker

“Well, Not to worry, my young friend. I have trekked through many a crime scene without a map before this.” Responded Ohms while reaching for an ESR Meter. “Inspector Dick Smith has produced such a wonderful tool in this, don’t you know.” And Ohms went on to describe the pleasant conversations that he has had with Bob Parker, the Australian inventor of the meter. “Delightful Fellow”, said Ohms, “And so Helpful, too! His invention has saved many a Technician Hours of time, so let us see if it can do the same for us in this case.”

Ohms applied the ESR meter to all of the electrolytic capacitors in the SMPS, one at a time. “You will note that None of these capacitors appear to have that bulging appearance which we find in so many of the newer televisions, Watts-on. That is a relatively recent phenomenon that we had only begun seeing maybe 5 - 8 years ago. Perhaps we should thank the Communist Chinese for giving us such an obvious clue to their failure but we have none such visual evidence here.” Ohms does so love to lecture while he is working. From time to time he would emit a soft “Hmmm”, or a guttural sound as things caught his fancy, but then he exclaimed “Hello, What’s This?”

The two of us spectators gathered round as Ohms showed the results on the ESR Meter. “Look there, Boys”, said Ohms as he applied the meter to C615, a 100uf @ 35v capacitor. “It is reading Infinite ESR! ...As they would say here in the colonies ‘That Sucker is OPEN!’.” We chuckled at Ohm’s use of an American phrase, and then he pointed out a second anomaly. “There - C617, a 4.7uf 160v cap is reading 8Ω. That is not far out of range, according to our friend Bob’s chart, but I would recommend that you change the two and then see what happens. They are Both connected to – or are near - that big STR4142 regulator and could cause frequency problems.”

Ohms bade me to use my surgical skills, and with a few licks of the Weller TC202 Soldering Station the two miscreants were changed in a Trice. “You do the Honors, Joseph”, said Ohms, inviting his friend to reapply Power. This was done, and a reassuring “Click” was heard as the power relay engaged We strained our ears, but as much as we tried we could not hear a single squeak emanating from the television and a normal picture appeared on the screen.



“My, Doesn’t that look nice!” said Ohms as he went on to comment that the NEC Televisions always did have a remarkable picture. Ohms said that he would put the quality of this picture up against any of the newer crop of Telly’s that Communist China had excreted onto American shores, and he would have been right. Our American friend was heard to agree by saying “Damn Nice Pix.”

“You are so Eloquent, my young friend. Now, what do you say to heating up that loaf of your wife’s Zucchini Bread that I spied upon entering and we’ll button up this NEC and then take our leave”. With the sound of silence coming from the Television, and only the whirr of the microwave to disturb the peace, we sat down to view the drama of Saturday Morning Broadcasting in Cleveland. “There – Stop There!” exclaimed Ohms. It’s *The Big Chuck and Little John Show*. “That’s Just the memory for us to take back home.”





The Audio Corner by Joe Sopko, CET

Do you repair Audio? Have you ever repaired Audio? With the times being what they are, perhaps you are beginning to take in Component Audio Systems for repairs when you never have before and discovering that they pose their own “Special” problems that you don’t see within the sound section of a TV set.

If that describes you, then we’re glad that you stopped in this corner for a visit. We’ll talk about Receivers, Tape Decks, CD Players, Turntables, and many products that most pointedly do NOT have an imaging screen. If you Don’t do audio, well, just wave as you pass us by and go lip-read somewhere else.

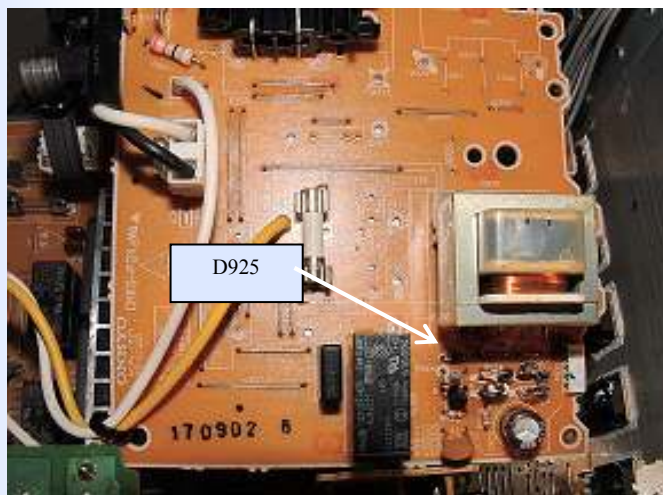
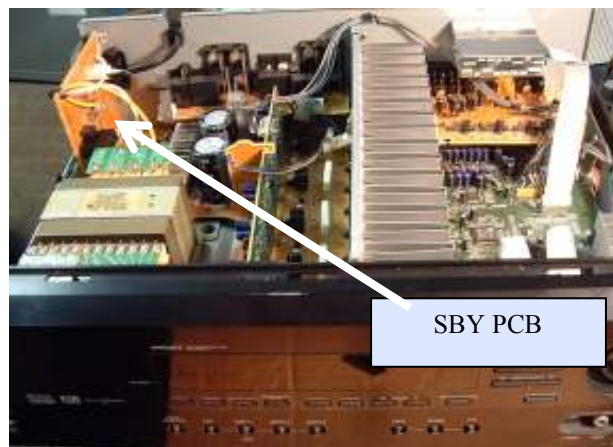
Today’s Topic: SOOOO-EEEE

Well, What would YOU call this story? We ARE going to talk about an QINKYO Receiver, After all... Isn’t that how you call a Pig out on the Farm: “SOOO-EEE – Here Pig – Pig – Pig”, and then you jump back so that they don’t eat you up! Pigs ARE “Omnivores”, you know. If you don’t know that, go look up a member from Cincinnati – For many years, Cinci was the “Pork Capitol of the United States” (and maybe even the World). It was even referred to as “Porkopolis” by some wags with a warped sense of humor. But let’s get back to the subject at hand: an QINKYO – Err – I Mean – an **ONKYO** Receiver, model **TX-SR500**.

This Big Ol’ Receiver with 5.1 channels @ 80 watts per channel came in with a description of “**Dead following Lightning Storm**”. I was thinking that we’ll probably wind up changing an ashtray full of output transistors, but I was surprised to find that they all checked good. What I DID find was that all 3 fuses were open and that, when replaced, they did not Re-Blow – but neither did I hear a Relay Click or see any other signs of life – How Disappointing that was. Maybe this wasn’t a Major Disaster with all the outputs blown, but it wasn’t a “Quickie, either.

Well, one does what one has to do, and I gave it an overall visual inspection while deciding where to start. Looking back to the Left-Rear of the receiver, I could see a Stand-up PCB with the Power Cord, a Relay and a handful of components on it. I assumed that it was the Standby Power Supply, and since I heard no Relay Clicks, That’s where I headed.

I must admit that I didn’t down-load the schematic at first because I was an Optimist that this would turn out to be a fault in this SBY supply. Just from the appearance on the board, I could see that all that there was in there was a Standby Transformer, a Bridge (4 Rectifier Diodes), a Relay, and a Switching Transistor to turn it all on. Not a whole lot of “Stuff”, and I figured that this was something I could handle without a Schematic.



My First check was on the coil terminals of that Relay, and I was able to confirm that I had B+ of about 16v there. There was no switching going on as the voltage was not pulled to ground on the low side of that coil. I then measured the Base Voltage of that switching transistor (Q921) as I turned the power switch on & off. When the Micro issued the “ON” Command that Base went up to about 5v – and I knew I was on to something. The barrier voltage should never exceed .7v, so I knew that I had an open Junction – a fact which was confirmed by the multimeter. The KTC3199 was replaced forthwith and NOW with the on command toggling between 0 & .7v, I did see a change on the low side of that Relay’s coil.

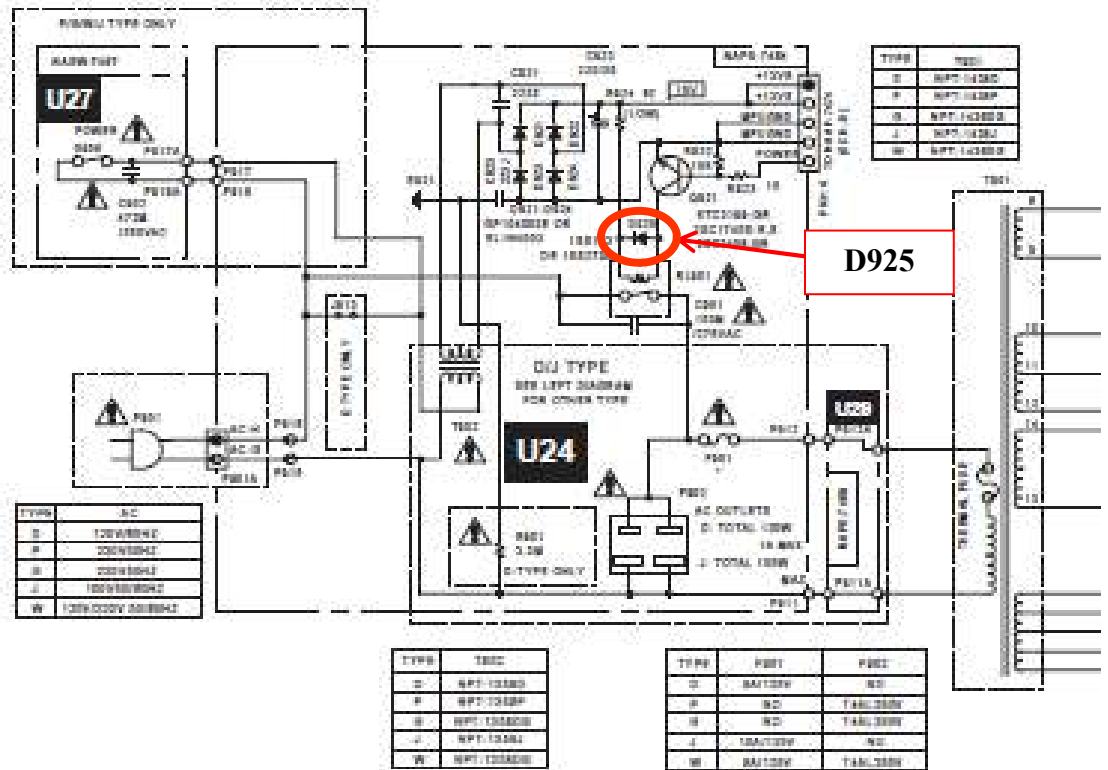
Just like with the current President, however, the Change wasn’t what I bargained for – and I STILL didn’t hear the Relay Click. It made me wonder just whatinnehell is going on? The Coil IS being pulled to Ground by the transistor – but it don’t Click? Well, when the meter was

placed on the Other end of that Relay coil, the reason became apparent: Where there was 16v on the Relay’s Coil in the “Off” state, there Now was 5v when the Power switch was turned to “ON”.

That 16v SBY Supply was dropping like a Rock just as soon as the Relay's Load was felt. "Big Deal", I thought. I mean – there are only 3 items in there... A Transformer, a Bridge, and a Relay... How hard can it be to restore this thing to operation?

As you can imagine, This story is not being presented because it was Easy. There are some murky depths to this water. The SBY B+'s Filter capacitor (C922 – 220@35v) was changed based upon our experience with the current crop of capacitors making him the most suspect. That had No Effect on the problem. Next, it was thought that the RELAY's coil might have some shorted turns, causing it to suck down the B+. A replacement relay was temporarily installed, again with no effect. What seemed so simple a moment ago

is fast turning into a Pain-innyass! We have had Diodes that wouldn't supply current under load, so next the Bridge was swapped out (all 4 of those %& Diodes) to no avail. So then we come to the last of the items in that supply, the SBY Transformer. Even though it kept putting out its 16v, Since it was the Last of the items that could cause this problem, we tacked in another transformer – and as you guessed – There was Still NO Change.



"What a Revoltin' Development THIS is!" – to quote Chester A Riley. ALL of the component parts of that Standby Power Supply have been Swapped out, and Still the trouble Ain't Solved. How Can This BE!? Well, the answer is Obvious once you take a look at the accompanying Schematic – Down-Loaded courtesy of the "HiFi Engine" Web-site: www.hifiengine.com, a repository of a Vast amount of HiFi Schematics.

There's nothing Secretive or misleading about this – It's a Standard relay control circuit... There's the Transformer, There's the Bridge, There's the Switching Transistor, There's the Relay, and There's the diode across the Relay's Coil!! OF COURSE there is ! Diodes have been Hung across Relay Coils ever since they discovered "Inductive Kickback". It's purpose is to eliminate the Reverse Spike of voltage caused by the Collapsing Magnetic Field when the relay is turned off. We've see it there so often that we have forgotten its presence – and it is so reliable that it is never considered as a source of a problem. C'mon – Fess Up... Have You ever replaced one of those CEMF Diodes? I know that I never have. Till Now... It's just a little Glass Diode: **D925** – Nothin' Special – a 1Ss133 with a 90v Peak Inverse Voltage Rating, but when I disconnected it and pressed the Power Switch, The Relay Clicked, and the Power Came On, And the Sound Sounded, and all was right with the world!

"WellI'llBeDammed", I said. I ain't never changed one of THOSE before, but this thing was outta here faster than a hooker at a truck stop! - Even though it checked Good on the Diode Test Function of the multimeter. Just for the Helluvit, I connected that little diode to the Bench's power supply in the reverse direction and watched the ammeter as I slowly increased the voltage. This thing should sustain up to 90v in the reverse direction, but when I got to about 7.5v, the ammeter came alive and registered 3½ Amps and the diode got Very Hot – Very Fast! So THIS was the sucker that was breaking down under load and almost faking me out!

The Unit was reassembled, the customer called, and it is currently rattling its neighbors' windows somewhere in S. Euclid,Ohio. A Leaky Diode – Who Woulda Think it? What a Pig inna Poke!





The Computer Illiterate

By: Joe Sopko

A Continuing Feature at "The Speaker", written by an acknowledged Computer Illiterate. The material contained here may be known to everybody in the civilized world - except the author - who says "It sounded good to Me, so I'll pass it on". The author advises that he has NO knowledge of computers, and as such cannot judge the accuracy or efficacy of the material presented herein. Nor does he assume any responsibility for damage to your computer, files or self esteem.

Today's Topic: A REAL Computer

Let me Clue you into a Secret: *The Computer Illiterate* **HATES** Computers... Absolutely HATES Them... At least he hates PC Computers, and I don't mean "Politically Correct". I mean the current crop of computers using the IBM Pentium Chips or 486 or 386 or any of that "Modern" Crap. *The Computer Illiterate's* skill level Peaked with the Commodore 64, and any interaction after that has taken on the aspects of a military Battle - and he is on the Losing side..

In point of fact, *The Computer Illiterate* was actually pretty good with the C=64. He worked for RCA Factory Service at the time it was introduced in 1982 and was a warranty station for the commodore line. In his own shop, he used a Commodore until 1996 when he was forced (at the point of a gun) to get a (ugh) PC. He is amazed at what they could do with 64K, and it is one of his Pet Peeves that you need an Ungodly 39 MEGS to get even a simple word processor.



WELL THERE'S GOOD NEWS TONIGHT! (To quote Fred Allen) *The Illiterate's* friend, Don Kastner of Lyndhurst Ohio, told him of a web-site - shown in the following link - where You can buy a Brand-New Commodore 64.

<http://blog.coppelltvrepair.com/2011/04/how-to-test-stk795-518-ysus-ipm-for.html>



In THIS commodore, however, they have made a few changes. About the only thing that is the same is the case. To quote from the Web-site (with comments by *The Computer Illiterate*), It sports a modern mini-ITX PC motherboard featuring a Dual Core 525 Atom processor and the latest nVidia ION2 graphics chipset (whatever THAT is). The new Commodore 64 also features a slot or tray load DVD R/W (Bluray optional) on the left side of the unit.

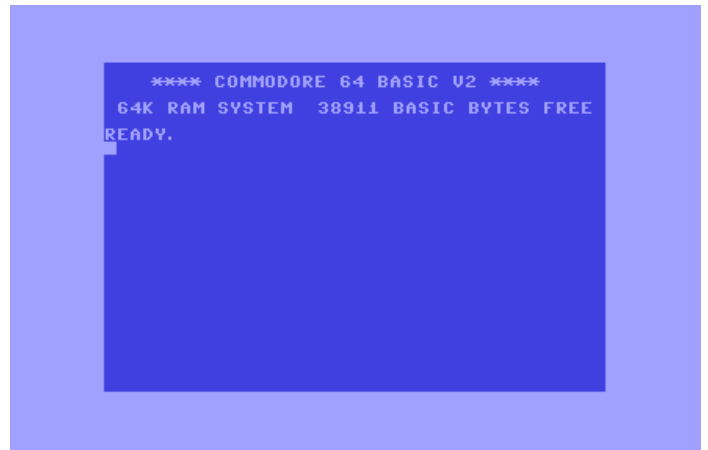
The base "New Commodore 64" comes with 2 GB of DDR3 memory and is expandable to 4 GB. A multi format card reader/writer and a USB slot are provided on the right side of the unit. There are an additional 4 USB slots on the rear of the unit for all your peripheral needs. (Didn't have THAT in 1982)



The new Commodore 64 can be connected to the latest televisions and monitors (I suppose that beats the 13" TV I Used for a monitor in 1982), and can deliver 1080p HD quality video playback and 6 Channel High Definition Audio for an excellent home theater experience. It also incorporates wireless n wifi for exceptional internet video streaming quality. (Yeah, but does it have NTSC Output?)

If that wasn't enough, You can Play all your favorite 8-bit era games within seconds by turning it on in "Commodore 64 Mode" by either selecting the C64 icon from the boot menu to run a C64 emulator directly, or from within our own Commodore Operating System where you can launch classic games in seconds. Like the "Original" C=64 Screen? You get That in "64 Mode". This looks like a Computer that even *The Computer Illiterate* could Love.

It comes in the original taupe brown/beige color, with other colors to follow - although WHY anyone would want some other color escapes *The Computer Illiterate*. You can be the envy of your office with THIS sitting on your desk.. The performance is said to be comparable to a modern "Notebook" computer. It could be Yours for a mere \$395 - Not bad, when you consider that the Original C=64 cost \$595, 1982 dollars.



TRUISMS FROM THE COMPUTER ILLITERATE

- For every function, there is an equal and opposite malfunction.
- When computing, whatever happens, behave as though you meant it to happen.
- When you get to the point where you really understand your computer, it's probably obsolete.
- The first place to look for information is in the section of the manual where you least expect to find it.
- When the going gets tough, upgrade.
- To err is human... to blame your computer for your mistakes is downright natural.
- He who laughs last probably made a back-up.
- A complex system that does not work is invariably found to have evolved from a simpler system that worked just fine.
- The number one cause of computer problems is computer solutions.
- A computer program will always do what you tell it to do, but rarely what you want it to do.
- If at first you do not succeed, blame your computer



Subject: the Service Nazi...Is back... and he has a sense of humor...

a Dumbass customer walks in this morning and says "My TV is making a noise... Like 'HMMMMmmm'... Tell me what it is"

I say "sure - bring it in and I'll tell you what it is once i've located the trouble..."

He says, somewhat belligerently, "No, I want you to tell me NOW"

"OK", says the Service Nazi - "It has a Bad Henway"

The Dumbass customer says "Whats a Henway?"

...and then The Service Nazi said "About 3 pounds"... The Dumbass customer didn't get it for a minute - - - and Ya know what - IT FELT GOOD !!!! some axxholes I just DON'T want for a customer... and I just didn't like this guy.

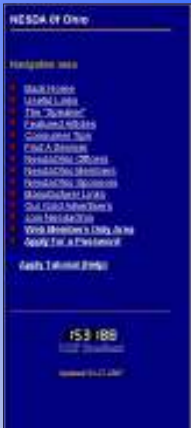
NesdaOhio Monthly Meeting:
THIRD Tuesday of most months. Room 100 - Clarion Inn, 240 E. Hines Hill Rd. Hudson Oh. 44236
 330-653-9191
 On St. Rt. 8
 500 yards N. of Ohio Turnpike exit 180. 6:30 PM

Next regular meeting is
Nov 15, 2011

**Answer to CET
 Brain Teaser**



Although an oscilloscope can be used, a hand-held logic probe is the far better choice for routine digital troubleshooting. At the minimum your logic probe should determine the conditions of the logic signals, HIGH, LOW, indeterminate and pulsing. You should know how to use a logic probe and what a good one can tell you. You can confirm that a digital signal you are testing is a valid input LOW or HIGH and not in the indeterminate region which is usually considered to be between 0.8V to 2V for TTL and 30% of V_{DD} and 70% of V_{DD} for CMOS. The indeterminate region is that range of voltages that might be taken to mean a HIGH or a LOW to an input and for this reason is intolerable. Most better logic probes are switchable from TTL to CMOS.



Visit our Website
www.nesda-ohio.com

NEED TECHNICAL ASSISTANCE?

JOIN TECH-ASSIST !



www.tech-assist.org is a Service Forum where you can communicate with hundreds of fellow techs across the country – One of whom may have the answer to solving that problem you are working on. In addition, you can access the schematic that you need, and search the database of thousands of fixes contributed by other members.

For less than the cost of the time you just wasted trying to fix that “Dog” on your own, you could be receiving the benefits of Tech-Assist Membership for a Full Year.

Visit **www.tech-assist.org** and see for yourself.

30 Day FREE trial, No credit card required for the trial.

- Communicate with other techs
- Solve problems
- Schematics to download
- Database of thousands of fixes

Membership doesn't cost – It Pays !