

CoCo~123



Glenside Color Computer Club, Inc.

Carpentersville, Illinois

Volume 35, Number 1

Spring 2015

CoCo ~ 123 Memory Map

<i>Routines</i>	<i>Address</i>
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GCCC Officers	1
GCCC Information	2
CoCo~123 Contributions	2
Contributors to this Issue	2
GCCC Meetings	2
From the President's Platen	2
Treasury Notes	2
Secretary's Notebook	2
Editor's Clipboard	3
ARTICLES	3
DTSS BASIC Programming Results	3
CoCo3/HDB-DOS/NitrOS9 Adventures Part 2 of 3	3
A Newbie's Thoughts on the 24th Annual CoCoFEST! ...	5
BASIC to Forth	10
New Software for Old Hardware	11
Raspberry Jam	11
The CoCo Crew Podcast	12
Videos About the CoCoFEST!	12
How to Connect Up To and Talk on IRC CoCo_Chat ...	13
New Card Game for CoCo - Color 8	13
Calendar of Events	14
CoCoFEST! 2016 Information - The 5 "W's"	14

Upcoming Events:

The 25th Annual "Last" Chicago CoCoFEST! **April 23-24, 2016**
Regular meetings every 2nd Thursday @ Schaumburg Library

G.C.C.C. OFFICERS

Here is the list of 2015 club officers and how to contact them.
If you have questions about the association call one of the officers for the answers.

POSITION	NAME	PHONE	PRIMARY FUNCTION
-----	-----	-----	-----
President	Tony Podraza	847-428-3576	The buck stops here...
Vice-President	Chris Hawks	815-943-4690	Meeting planning, etc.
Treasurer	Geo Schneeweiss	815-832-4441	Dues and Purchasing
Secretary	Bob Swoger	224-236-5194	Records and Reporting
Director	Tony Podraza	847-428-3576	CoCoFEST! Organizer
Librarian	Brian Goers	708-805-1888	Software/Hrdwr Manager
Editor	John Mark Mobley	847-409-8604	Newsletter Production
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Tony Podraza



Chris Hawks



Robert Swoger



George Schneeweiss



Brian Goers



John Mark Mobley

CoCo~123 - A Glenside Publication Since 1985

CoCo~123 INFORMATION

CoCo~123 is the newsletter of the Glenside Color Computer Club. Your annual contribution of \$15.00 helps to keep our club going. Send your check to Glenside Treasurer:

George L Schneeweiss
13450 N 2700 E Road
Forrest IL 61741-9629

Our treasury provides newsletters and good times with fellow CoCo users at our Annual "Last" Chicago CoCoFEST! and Annual Glenside Picnic.

CoCo~123 CONTRIBUTIONS

If you have any suggestions for the newsletter or would like to submit an article, please contact the CoCo~123 Newsletter editor:

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Pierre Sarrazin
George Schneeweiss
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G. C. C. C. MEETINGS

The Glenside Color Computer Club meets the second Thursday of each month at the Schaumburg Township District Library at 7:00 pm. If you need a map, see our Glenside Homepage at:

<http://glensideccc.com/splmap.html>

A social get-together always follows the meeting at a nearby restaurant, lovingly called, "The Meeting After".

FROM THE PRESIDENT'S PLATEN

Another FEST! put to bed, the 24th, actually. That means we have already started planning for next year, The Silver CoCoFEST!. We had a record turnout for the decade; over 60! Now that may not sound like much, but for an out-of-production computer, and only one brand for a draw card, I think that it is fantastic. Glenside has exhibited with other makes from our Special Interest Groups (SIGS), and will do so again in August at the Vintage Computer Festival Midwest (VCFMW), but I do not think that attendance was over 350 for those shows in the recent past. John Mark can correct me if I am wrong. Plus, the new projects that have been designed, assembled, exhibited and sold based on the CoCo are very innovative and fun. The

CoCo community has new games, hardware, software tools and programming contests...ok, small number of entries, but there is interest, nonetheless... AND new users, eight bit users from other systems, curious about the 6809 experiences.

This year, the FEST cost Glenside over two grand to put on. However, we kept your cost the same as last year. Due to the generosity during the No Minimum Bid Auctions, Glenside was less than \$200.00 in the red. You always seem to pull us out of what could be a financial disaster. We will sharpen our pencils again to try to keep costs at a minimum, but we will have to adjust prices upward for next year. There will be some changes in the hours. Saturday, we will be closing the show at 5:00 PM, like this year, but we will be reopening the room at 7:00 and running till last man standing, or 11:30 PM. The room will re-open at 7:00 AM Sunday and there are plans for a worship service at 8:00 AM to be presided over by Brother Jeremy, God willing.

I am sure that there is much more that I could continue on with, but I will trust that others have already taken up the slack. If not, more for me to tell next time, until which,

I bid you, PEACE.

Tony Podraza, President
Glenside Color Computer Club

TREASURY NOTES

We have \$6020.34 in checking. We have 88 paid members in 2014, down from 136 in 2011, and a total of 431 members to whom we send newsletters.

George Schneeweiss, Treasurer
Glenside Color Computer Club

THE SECRETARY'S NOTEBOOK

As Tony mentioned, we decided to offer the same fest prices as we had in 2014 and unexpectedly came in close to our break-even goal. We had 20 exhibitor tables with 28 exhibitors. There were 40 additional attendees of which 5 were less than age 13, for a total of 68 attendees. Pictures later on in this newsletter will show you many new faces. It was the 5 young people that thrilled me to see at the keyboards having fun.

There were two contests scheduled, a Dartmouth Time Sharing System Simulator (DTSS) BASIC Programming Contest sponsored by Kip Koon and a 4K programming contest. However Allen Huffman was unable to attend this year and the 4K programming contest did not come off.

One new attendee had a Hunt the Wumpus game he had coded for the Sinclair ZX81 SIG. He was looking for me in particular as he had heard I had written one back in 1982. He showed me his and I showed him mine. Since I had re-written my Sinclair version of Hunt the

Wumpus for the CoCo3, he got to take home my version. I was certainly pleased with our meeting.

During my seminar to show both LogiCall and Hunt the Wumpus, my audience was unable to see my screen due to some incompatibility between my HP and the overhead projector. For some reason my laptop re-booted every time we tried to hook the two together. Sorry, folks!

During the fest there was so much going on that no one got to see all that was exhibited. I was too busy to get around to visit with all.

Dinner at Casey's was again very good with 24 (not the 29 we expected) showing up, but the service was very slow. A rookie handled it. At least we had time to socialize, as it was the last event of the evening. We gave the hotel 19 overnight guests.

This fest was once again a very good social event. It was great to see all my old friends. I for one was pleased with everything. Wish you all had been here.

Bob Swoger, Secretary - rswoger@aol.com
Glenside Color Computer Club

THE EDITOR'S CLIPBOARD

We are about to celebrate The 25th Annual "Last" Chicago CoCoFEST! This is the silver anniversary! We want to make a big deal of it! We want to have an anniversary cake! We are increasing the FEST time on Saturday night. We are planning a worship service on Sunday morning. We want a big turnout! We want some nice artwork! See what you can do to spread the word.

John Mark Mobley, Editor
Glenside Color Computer Club

Dartmouth Time Sharing System Simulator (DTSS) BASIC Programming Contest Results by Kip Koon

Now that I'm more or less back in the groove of things, John Mark asked me if I wanted to write an article for the newsletter about the Dartmouth Time Sharing System Simulator Basic Programming Contest results. Hummm... That's right! I haven't done that yet. Well here goes. ☺

My first trip to Chicagoland was quite interesting. This was the first time I had traveled so far north! Attending the CoCoFEST! was even more interesting! I have not attended any kind of computer convention since before I moved back to SC from OK way back in 2001. That makes more than 15+ years. That's way too long for a diehard computer enthusiast – translated Computer Guru, Expert or just plain Computer Nut! ☺

This was also the first time I had ever hosted a Contest. I hope it wasn't too obvious! ☺ I had four entries including one from me. Salvador entered a MAZE game. John Mark Mobley entered an AGE calculation

program based on a word problem and I entered a PLOT program that plotted the results of the SIN, COS & TAN functions. Concerning the fourth entry, which was the program that did not work, the author had sent it for me to view personally and was not to be entered into the contest, so I will not release his name as it is not necessary.

The attendees of the CoCoFEST! were the judges. Out of the 3 programs that worked, Salvador's MAZE program won First Place. What was the prize? As far as I know, I thought the winner was going to get a book on BASIC programming, but I don't remember Tony mentioning that while I was at the CoCoFEST!, so I have to find out and get back with the winner on the result. In any event, the winner gained a big round of applause from everyone! ☺ I was going to play more than a few rounds of MAZE, but someone in the crowd didn't like the idea, so I stopped after just a couple of plays. So for the Dartmouth Time Sharing System Simulator Basic Programming Contest - That's All Folks! Starfleet Out! Qaplah! End Transmission!

CoCo3/HDB-DOS/NitrOS9 Adventures, Part 2 of 3 by Rich Bair

When I first began trying to use OS9 25 years ago, the number of times I saw the "OS9 Boot Failed" message was enough to make a strong man cry. So when NitrOS greeted me with that message it was not a happy moment; some 4-letter words were voiced. But at length I marshalled my energies to see if I could figure out what to try differently. At least NitrOS gives you some real-time hints to what is taking place during the boot-up process, unlike the original OS9.

To understand the first thing I discovered I was neglecting, one must imagine the steps that take place during the boot-up process. When a DOS command is issued, the resident OS reads all 18 sectors of track 34, side 0 of the floppy (real or virtual) and writes it into RAM. In (Nitr)OS9 Level 2 this 4 1/2K of data contains three OS modules: REL, boot, and the kernel, which in Radio Shack OS9 is called OS9p1 but in NitrOS is krn. REL is supplied in three* flavors, because it is the module that establishes the boot-up screen. You can choose to have it display a 32, 40, or 80-column screen during boot. The boot module is supplied in two** flavors, one that continues the boot process by making further reads from a real floppy, the other that reads from a hard drive to proceed. Krn, fortunately, is krn; no choices there.

The data that must be read to continue the boot process is the OS9Boot file. If you are booting from a real floppy, a group of 5 bytes in the first sector of track 0, side 0 of the floppy tells the boot module where the file starts on the floppy disk and how big it is. But what if you're booting from an HDB-DOS virtual floppy? If the OS9Boot file is on the HDB-DOS virtual floppy, it's really

on the hard drive, and not even within the OS9 hard drive partition! Remember that once control is turned over to the track 34 OS modules, the resident OS is history; there's no way that the boot module can ask HDB-DOS "Where exactly was that virtual floppy, anyway?"***

Well, one solution is to copy the OS9Boot file into the OS9 part of the hard drive and record its location/size in the first sector of track 0, head 0 of the hard drive (that's one of the jobs that the command os9gen will do). But the disadvantage of this solution is that then you have one and only one OS9 boot. I was hoping for the possibility of several different boots from different HDB-DOS virtual floppies.

A better solution came from a BASIC program called LINK, which is included with the HDB-DOS distribution. If an OS9Boot file is put on an HDB-DOS virtual floppy and its location/size are duly recorded on the first sector of that virtual floppy, LINK (at this point, HDB-DOS is still operational) calculates where that location is relative to the very beginning of the hard drive and records that information on the first sector of the hard drive. So when the (Nitr)OS boot module takes over, it gets correct info from the first hard drive sector, not even knowing that the location is outside the OS9 partition (remember, the hard drive descriptor in the OS9Boot file isn't even loaded yet), and the OS9Boot file proceeds to load correctly.

So my first error was that I hadn't LINKed the OS9Boot file to the hard drive. But even after I fixed that, I still got the "NitrOS9 Boot Failed" message. What else was going wrong?

Some of you old hands are probably thinking to yourselves "He forgot to put grdrv and shell on the hard disk." Well, no, it wasn't that. But that brings up an important side story.

Since the CF "hard drive" that was in my computer previously had been formatted and managed by the faulty driver originally supplied by Glenside (a corrected version is now available), it was unreadable by the SuperDriver software. So I had decided to set it aside and start with a new CF for my NitrOS9 future. I also decided to format the new CF with a cluster size of 2, allowing me a size of 240 Meg. You may well ask "Why?", since I had never come close to filling the prior CF with a cluster size of 1. The only answer I can give is that it just seemed right to have 1 cluster = 1 physical sector (512K). Though MY customized NitrOS9 boot was still not working, I was able to boot an earlier version of NitrOS from the SuperDriver distribution floppy. I had been using that boot to format the new CF "hard drive" and copy hundreds of files and commands to it (including grdrv and shell). In the process I discovered what I consider a serious bug in the NitrOS9

RBF manager.

When a new OS9 file or directory is created on a disk, the first thing written is the file descriptor sector. With a cluster size of 2 or more this will always be the first sector of a cluster, and that cluster must then be marked as used in the allocation table. So the other sector(s) in the cluster could end up being unused but unavailable. Sounds bad, but this would actually be the more desirable outcome in this age of huge capacity. What NitrOS RBF does instead (usually, but not always) is enter the remaining sector(s) as the initial segment in the file segment table, totally disregarding the segment-allocation-size specification in the drive descriptor. The unhappy result in my case is that almost every file larger than 256 bytes (including directories) is fragmented from the get-go, starting off with a segment consisting of a single sector. Even though seek time is not an issue with a CF, there's still more processing overhead when a file is fragmented. Could somebody fix this, please?

But enough of my complaining. The goal was to get MY version of NitrOS9 to boot.

A good strategy in a situation like this is to start with a version that does work (e.g., the SuperDriver boot), then make small changes one at a time, checking after each change to see whether the boot is still functional. So I began making a series of boot disks. Almost right away I began having another problem for which I still don't have an explanation: os9gen began falsely proclaiming "Warning - file(s) present on track 34 - this track not rewritten." Investigation with ded would show that no files were on track 34, and bits of the disk allocation map showed all 18 sectors as unused, but os9gen would repeatedly refuse to write the boot track.

My efforts were totally stalled if I couldn't get a boot track written. In desperation I disassembled os9gen thinking maybe I could find the problem, but quickly realized that commenting and analyzing the source code would set me back at least two weeks. Then I wrote a Basic09 program to do the job using the d0@ raw access capability. That program didn't work right, so I finally wrote a program using the DSKI and DSKO commands in Disk Basic (and HDB-DOS) to get the job done. Someday when I have more time I'll figure out why my Basic09 program didn't work, and maybe also what is wrong with os9gen.

So I created almost two dozen different boots; some worked, most didn't, but I believe I now understand the situation. Details in the next chapter.

To be continued.

* REL actually also comes in a variant trio for those with 50hz power.

** There are other versions of boot for DriveWire setups, Arduinos, booting from ROMs, SCSI, etc. I'm trying to keep it simple.

*** Actually it might be possible, but it would require a customized boot module.

Rich can be contacted at mgdoc1@sbcglobal.net.

**A Newbie's Thoughts on the 24th Annual "Last"
Chicago CoCoFEST!**
by Brian Holman

To clarify, I am a newbie to the CoCoFEST! but not a newbie to the Tandy/Radio Shack TRS-80 [Color Computer platform](#). I purchased my first TRS-80 Color Computer 1 in 1982 at the age of 11. \$600 was a lot for a rural Utah kid who spent all his money from selling a cow in the 4-H stock show on this venerable machine. It had 16k of memory and a less-than-usable chiclet-style keyboard. However, despite its shortcomings, I fell in love with this little computer! A few years later I upgraded to the Color Computer 2. I spent hours programming in BASIC on these great machines and did enjoy playing games as well. One of my first useful BASIC programs was a U.S. State Capitals Quiz. However, my interest in the Color Computer line waned when the Tandy 1000 PC came out and I never owned a Color Computer 3 in its retail lifecycle.

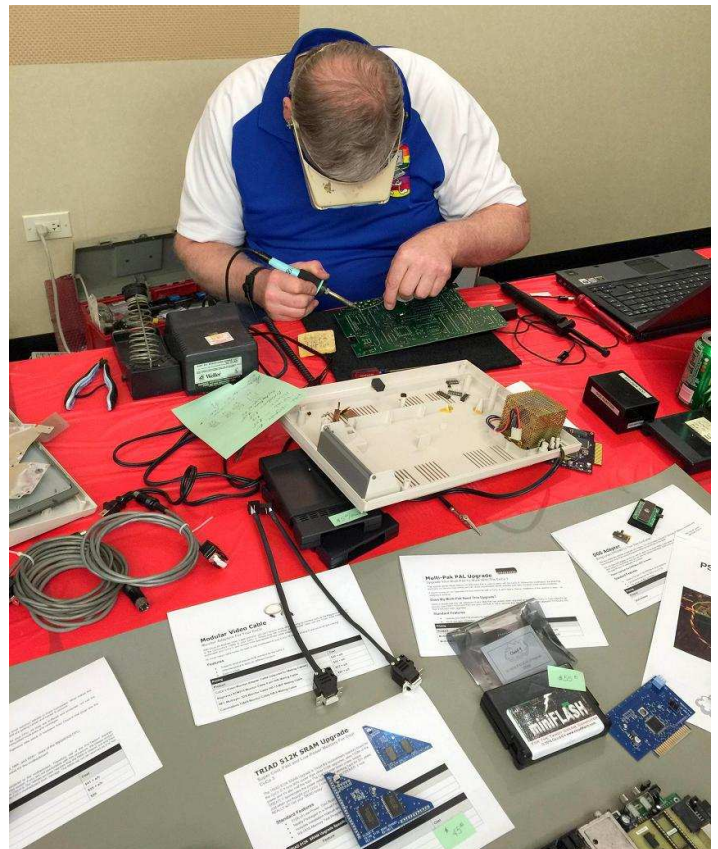


Heron Point Building Lobby

At the time, I didn't have the foresight to keep these old machines, and have a mother that liked to throw away anything in storage that hadn't been used in a while. About a decade ago, I reacquired a mint-condition Coco1 and two lightly-used Coco2s, a floppy drive system, and enough cartridges, floppies, and manuals to relive the platform's glory days, including my early favorite games MegaBug and Poltergeist. I kept it out for a few years, and then it got relegated to storage when life commitments with a young family came along.

More recently, I acquired two Coco3 systems with a renewed interest in the platform so I could experience improvements made on this last of the beloved line of home computers. In the decade away, I discovered that there was still a vibrant Color Computer community with some of the best hardware and software development in 35 years of history! I went to CoCoFEST! to connect and learn from some of the new vanguard and long-time supporters that have been carrying the torch and filling the gap since Tandy/Radio Shack abandoned the platform in their slow march to corporate oblivion.

Mission #1: Coco3 Brain Transplant by the Master Surgeon Mark Marlette of Cloud-9



Mark Marlette with a soldering iron

My recently acquired mint-condition Coco3 128k was itching for all of the latest hardware innovations made possible by the affable hardware genius Mark Marlette. Mark's booth at the show was always a hive of activity.

Mark's day job at a defense contractor charged with development and repair of all things electronic has helped him develop his considerable prowess.

Mark has recently updated his PS/2 keyboard adapter and has a [new miniFlash Flash-based 4-bank programmable ROM cartridge](#) that comes installed with a DriveWire-compatible ROM in the first slot.

He also still has his power sipper [Triad 512k RAM upgrade](#), his [Multi-Pak Coco3 upgrade PAL](#), and his [ProTector+ kit](#) to keep your CPU from getting jolted or jilted. I took it all along with the pinnacle of the transplant, the Motorola 6809's Japanese Cousin — the upgraded Hitachi 6309 CPU.

I walked away with a tricked out Coco3 and felt like a kid on Christmas morning! Mark's work at Cloud-9 is a labor of love for the community. There is nothing wrong with homebrew experimental hardware, but Mark's products are as professional and polished as it gets. His patient and supportive significant other was there to help him work his booth.



Left to Right: Mark Marlette and Brian Holman

The amount of time and talent that he devotes to engineering these technically complex solutions offered to the community is immense. He gave my 30-year-old computer a new lease on life ready to be pushed to new limits.

John Linville – What Was Old Is New Again



Left to Right: Brian Holman and John Linville

John Linville, whose day job is as a kernel software engineer for leading Linux provider RedHat, brings an artisan's level of professionalism to his work in the community. John gave an outstanding presentation reviewing a blistering array of projects that he has been involved with in the past year to support the Coco and Retro computing in general. John also encouraged the rest of the attendees to follow his example in taking a more active role in moving the platform forward through broader participation and outreach.

One of the highlights of the show was waiting to see how much the one copy of John Linville's handcrafted [Fahrfall](#) game cartridge would fetch on eBay with the auction closing at mid-day on Saturday at the show. Those in the community who couldn't attend turned out in force on eBay with the cartridge fetching \$113.50.

I am also the lucky owner of one of the best games for the Coco platform and the first new Coco game cartridge produced in decades. What was old is definitely new again! I'm looking forward to firing up my Coco2 and have a Fahrfall competition with my daughters!

The Dynamic Duo-Mark Marlette and Boisy Pitre: Cloud-9 Presentation



Left to Right: Mark Marlette and Boisy Pitre. Mark is holding a SuperBoard mockup.

Mark and his software simpatico Boisy Pitre gave an outstanding presentation together on the Cloud-9 hardware products I've already elucidated in describing my Coco3's brain surgery. But the highlight of their presentation was a review of the high-level design and features of the long-planned and hoped-for SuperBoard. The SuperBoard will be a custom-shaped board that plugs into the memory pins and CPU socket of the Coco3, and will not require any case modifications.

Potential enhanced functionality includes 2MB of RAM, networking, SD card, and USB support. They expect to make significant progress on the project this year, but have not committed to any specific target date. I'm sure we will all be watching this project with great interest.

Right now the options are very limited for those of us who don't own an old CM-8 monitor and want to be able to support high-resolution output from the RGB port of a Coco 3 to a modern flat panel VGA or HDMI display.

Long-time CoCoFEST! supporter and Coco3 RGB-to-VGA adapter box extraordinaire Roy Justus has been ill and is currently convalescing and unable to attend the show this year. Roy is not actively making any new RGB-to-VGA adapter boxes.

Modern Video Output Support for the Coco 3



Christopher Hawks

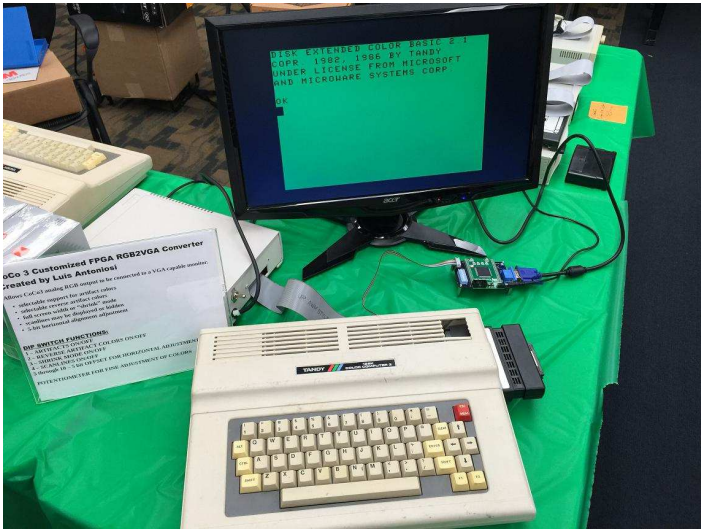
Another long-time show participant and vendor Chris Hawks of HAWKSOFT offers an RGB cable that can be used with a third-party generic RGB-to-S-Video adapter available at [Jamma Boards](#).

There are also S-Video-to-HDMI adapters generally available at Amazon and elsewhere. Not an ideal train of adapters, but I will most likely try this out in the interim to see if I can get a readable 80-column display on my LCD monitor.

(That is a Radio Shack X10 Controller for the CoCo on sale in front of Chris. He also sells a security software package he authored years ago for this product that makes your home looked lived-in while you are on vacation, or can brew your coffee and make your toast in the morning if you wish.

John Mark Mobley mentioned elsewhere in this newsletter that he had interference problems with his X10 setup when a fluorescent bulb was part of the setup. X10 offers a filter module to prevent this interference. They also provide a bridge from one side of the AC line to the other to increase module communication distance. Ed.)

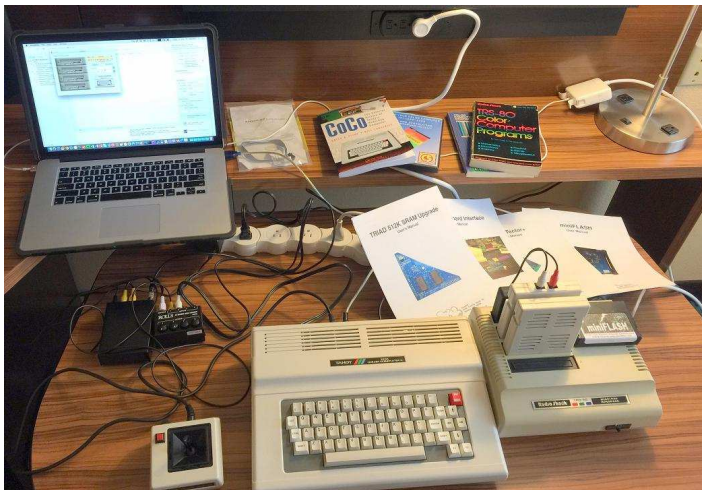
Hope (for using a modern display) Springs Eternal



FPGA RGB2VGA Converter

Mike Rowen was demonstrating an FPGA-based RGB-to-VGA adapter prototype board developed by Canadian [Luis Antoniosi](#). This solution has the hope of being the crème-de-la-crème solution with selectable support for artifact colors and reverse artifact colors, full screen width or “shrink” mode, the choice of hiding or displaying the scanlines, and a 5-bit horizontal alignment adjustment to handle the slight variations in each CoCo’s display output. More information on this solution including schematics can be found online [here](#). I for one am looking forward to watching Luis’ progress.

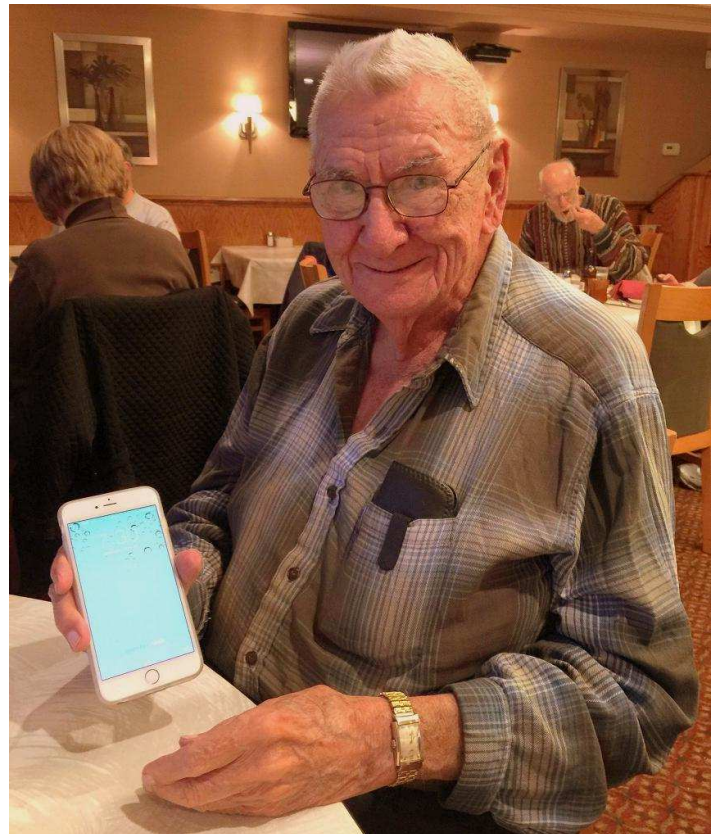
Saturday Night: Private Nerd Fest or Casey’s Restaurant



Fairfield Inn and Suites Hotel Room

I was torn between going back to my hotel room with my newly tricked out CoCo3 and spending the night putting it through its paces, or joining the majority of the group at Casey’s Restaurant just down the road from the Heron Point Convention Center. I made the right choice and joined the group at Casey’s. The atmosphere was great and the food and service

matched. With flaming cheese appetizers and a plethora of other comfort food, nobody left hungry.



George Schneeweiss at Casey’s Restaurant

I got the distinct pleasure of sitting at the table with the distinguished Glenside Club Treasurer 94-year old George Schneeweiss. George is a fascinating man with interesting life experiences with a feign curmudgeon’s exterior to mask his warmth and welcoming personality. George is a man who keeps up with the times as best he can and keeps busy with varied interests and hobbies. I took a picture of him with his iPhone 6 Plus to show that you are never too old to teach an old dog new tricks. Now if only my 75-year-old mother could figure out how to use her iPhone...



Casey’s Restaurant

John Strong, StrongWare, and giving fit and finish to the awesome CoCoSDC

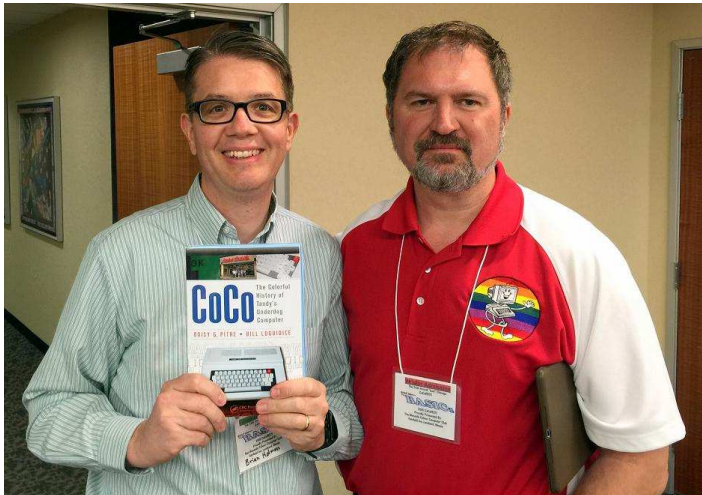
John has been a leading game developer for the CoCo platform and has developed a number of signature games over the years, including one of the best Tetris clones, and the only game that leverages the stereo

sound of the Orchestra-90 for game play. He offered them for sale at the show.

One of the innovative contributions John has made recently, unrelated to his software expertise, is a 3-D-printed case designed for the [CocoSDC](#). I personally purchased one of his excellent cases just a few weeks before CoCoFEST! to match my [Zippster-produced](#) CocoSDC originally designed by Darren Atkinson.

The CocoSDC with its FAT32 SD card support, along with the expansive library of software on the [Color Computer Archive](#) and the programming and tool tips on [CocoCoding](#), have personally made the Coco exciting and relevant again for me, without the tedious job of writing new 5 1/4" floppies on an old Windows with [VCC](#), the [raw floppy driver](#), and my remaining limited stock of floppies.

Historian Extraordinaire and Next Generation DriveWire on the Mac



Left to Right: Brian Holman and Boisy Pitre

Boisy Pitre is the co-author of [CoCo: The Colorful History of Tandy's Underdog Computer](#). He graciously signed my copy of the book. He and Bill Loguidice did an excellent job of telling the rest of the story on the Color Computer with the corporate intrigue at Tandy and Radio Shack. Boisy is also working on developing a [native Mac OS X version of DriveWire](#) as an alternative to the [existing Java-based version](#). Boisy is one of the key technical leads in the CoCo community and is a contributor to the amazing [NitrOS-9](#) operating system.

Glenside Club Regulars and CoCo Fest Traditions



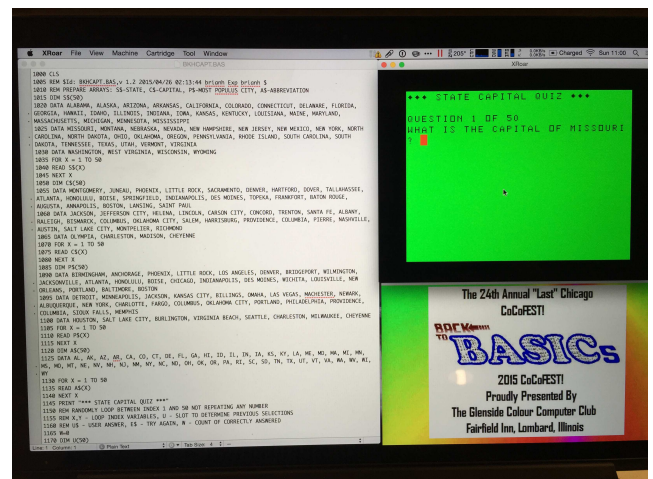
Tony is holding up an item for auction

Glenside Color Computer Club President Tony Podraza kept the energy level up with both give-aways and two auctions to raise funds for the club. He also read a touching message and prayer from long-time participant Brother Jeremy, who is away serving his church in England. There were also a number of local participants whom I didn't get a chance to get to know as well.

Dartmouth Time Sharing System Simulator BASIC Programming Contest with Kip Koon

Kip Koon led the charge in a BASIC competition. I'm sorry I didn't get the names of the participants. As I recall, there were three entries: showing a sine wave, calculating a story problem where a man's age was a certain multiple of his grandchild's age, and a game. The game won the majority vote of the attendees. *There were three participants: John Mark Mobley, Kip Koon and Salvador Garcia. John Mark's program solved a puzzle which consisted of calculating the child's and grandfather's ages, given that the grandfather's age was evenly divisible by the child's age for 6 consecutive years. Kip Koon's program graphically presented a sine wave onscreen. Salvador's program implemented a simple text adventure game called Maze which basically consisted of finding your way out of a maze. Salvador's game won the majority vote of the attendees. (Thanks to Salvador for filling in the gaps in my memory!)*

Recreating my first significant Coco program



XRoar CoCo Emulator Running on a Mac

Although I didn't have an entry in the competition, I was inspired by them, and used some of the downtime at the event to recreate my first significant Coco BASIC program from 1982. Since my Coco 3 was back in the hotel room, I used [XRoar](#) for the Mac with the [ROMs](#) on the Color Computer Archive to emulate a real machine from my MacBook Pro laptop.

[My program](#) is a quiz to test the user on the capital of each of the U.S. 50 states. It presents the states in random order and keeps track of the correct answers.



"Family Photo"

The "Family Photo" at the End of the Second Day

There were a significant number of attendees at the event that came and went and didn't stay until the end of the show on Sunday afternoon. This picture captures the die-hards at the end of the event with club president Tony at the back with open arms.

The End

I had a great time at my first CoCoFEST!. I can really get a sense for the camaraderie and friendship that has been built over the years with many in the group through their common bond of the small little computer from the 1980's that hooks to your TV. Thanks to my wife and three daughters at home for letting me go away another weekend after an already busy three months with extensive worldwide business travel.

BASIC-to-Forth by John Mark Mobley

GNU stands for GNU Not UNIX. GNU is a recursive acronym. Color Forth does not do floating point, but gforth (GNU Forth) does. Perhaps gforth can be ported to the CoCo. Below are some examples of BASIC and Forth code that both do the same thing. If you know BASIC, then you can follow the Forth examples and understand how it works.

There is often more than one way to accomplish something in Forth. In Forth you can use a stack value in place of a variable. However, I have chosen to use variables so that you can better follow the BASIC code examples.

```
BASIC>
REM FLOATING POINT
PRINT 1.5 + 2.5

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
1.5E0 2.5E0 F+ F. CR
```

```
----
BASIC>
REM FLOATING POINT
PRINT 2^8

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
2.0E0 8.0E0 F** F. CR
```

```
----
BASIC>
REM FLOATING POINT
X=3
PRINT 4*X^2+2*X+3

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
FVARIABLE X
3.0E0 X F!
4.0E0 X F@ 2.0E0 F** F*
2.0E0 X F@ F*
3.0E0 F+ F+ F. CR
```

```
----
BASIC>
REM FLOATING POINT
REM FIND THE SIN OF 45 DEGREES
PI=ATN(1)*4
PRINT SIN(45*PI/180)

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
\ FIND THE SIN OF 45 DEGREES
45.0E0 PI F* 180.0E0 F/ FSIN F. CR
```

```
----
BASIC>
10 REM FLOATING POINT
20 REM MAKE A SIN FUNCTION THAT
30 REM WORKS IN DEGREES
40 PI=ATN(1)*4
50 DEF FNSN(B)=SIN(B*PI/180)
60 PRINT FNSN(45)
RUN

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
\ MAKE A SIN FUNCTION THAT
\ WORKS IN DEGREES
: FDSIN
PI F* 180.0E0 F/ FSIN
;
45.0E0 FDSIN F. CR
```

```

BASIC>
10 REM FLOATING POINT
20 REM MAKE A DEGREES TO
30 REM RADIANS FUNCTION
40 PI=ATN(1)*4
50 DEF FNRA(B)=B*PI/180
60 PRINT SIN(FNRA(45))
RUN

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
\ MAKE A DEGREES TO
\ RADIANS FUNCTION
: FRADIANS
  PI F* 180.0E0 F/
;
45.0E0 FRADIANS FSIN F. CR

```

```

----
BASIC>
100 REM FLOATING POINT
110 REM KEY: ROOT MEAN SQUARE (RMS)
120 REM COMPUTE THE RMS
130 REM VALUE OF A FUNCTION
140 PI=ATN(1)*4
145 REM PLACE A FUNCTION HERE
150 DEF FNA(B)=SIN(B*PI/180)
160 MEAN=0
170 FOR DEG=0 TO 359
180 SQUARE=FNA(DEG)^2
190 MEAN=MEAN+SQUARE
200 NEXT DEG
210 MEAN=MEAN/360
220 RMS=SQR(MEAN)
230 PRINT "ROOT MEAN SQUARE"
240 PRINT RMS

FORTH>
\ GFORTH (GNU FORTH)
\ FLOATING POINT
\ KEY: ROOT MEAN SQUARE (RMS)
\ COMPUTE THE RMS
\ VALUE OF A FUNCTION
: RMS-FUNCTION
  PI F* 180.0E0 F/ FSIN
;
FVARIABLE MEAN
FVARIABLE DEG
FVARIABLE SQUARE
FVARIABLE RMS
: RMS
  0.0E0 MEAN F!
  360 0 DO
    ( S>F int-to-float )
    I S>F DEG F!
    DEG F@ RMS-FUNCTION 2.0E0 F** SQUARE F!
    MEAN F@ SQUARE F@ F+ MEAN F!
  LOOP
  MEAN F@ 360.0E0 F/ MEAN F!
  MEAN F@ FSQRT RMS F!
  ." ROOT MEAN SQUARE" CR
  RMS F@ F. CR CR
;

```

New Software for Old Hardware by John Mark Mobley

I own an old router. It worked fine when it was new. But as time went on, I connected more things to it, and it got slower and less reliable. I think part of the problem is that evil hackers have found ways to bypass the security, and as more and more hack attacks happen at once, it makes the router slow and unreliable somehow. I found that if I reset the router, it was fine for a few days. Then I found I needed to reset it every day. Eventually I needed to reset it more than once a day. I used the router to check for a firmware update, but none was found.

Then I heard about DD-WRT. DD-WRT is a free Linux distribution of router firmware. You can buy routers that come with DD-WRT preinstalled, but I chose to simply update my existing router. I found that my router was compatible with DD-WRT. I first had to update the firmware with "first installation" firmware. Once that was loaded and working, I did a second firmware update to install working router firmware.

Now my router is fast and reliable again. My router is more sophisticated with more features and more modes of operation. My old hardware is new again.

Speaking of "what was old is new again", thank you to everyone who makes new software for the CoCo. Thank you to everyone who makes software tools for cross development for the CoCo. Thank you for everyone who makes new peripherals for the CoCo. Thanks to everyone who archives a cassette tape, archives a floppy, scans a manual, scans a book, or scans a magazine. All this work helps keep the CoCo fresh and exciting.

Raspberry Jam by John Mark Mobley

A Raspberry Jam is a Raspberry Pi computer festival.



Raspberry Jam

A Raspberry Pi computer is much like a classic computer. Parents can let the kids play with it and wire things to it with no worry of losing data off the main

computer, where email and financial data are stored. And if the kids burn it up, then that is only \$35.00 down the drain. Also the Raspberry Pi can use an HDMI television (TV) as a monitor.



Raspberry Pi 2 Model B

I went to a Raspberry Jam on Wednesday May 13th at Marquette University in Milwaukee, Wisconsin. It ran from 6:00 PM to 7:30 PM



Raspberry Jam

<https://www.raspberrypi.org/jam/>

We went to a conference room that was designed to hold 8 people. 4 people were present. This included the organizer (Sam), Glenn Holmer, myself and my wife. Glenn Holmer and I are both into vintage computing.

There was a large screen and we took turns connecting to it and presenting what our Raspberry Pis could do.

Glen presented a number of operating systems for the Raspberry Pi. He had a number of Secure Digital (SD) cards, and was able to quickly change out the operating system. One system he presented was the Plan 9 operating system from Bell Labs. (Note that the name Plan 9 comes from the movie *Plan 9 from Outer Space*.) (Also there is a similar story about OS-9/6809. The story is that it stands for Outer Space 9 in addition to Operating System for the 6809.)

I presented 5 CPU-intensive tasks running on a 4-core Raspberry Pi 2. It was the same program running in 5 BASH terminal windows. The program took about 2 minutes to compute pi to 5000 places. Each task got the same percent CPU. Then I changed the priority of one of the tasks, but it did not appear to make a difference.

I mentioned my interest in learning more about Linux clusters, which led to a discussion on the Raspberry Pi

and the new \$9.00 C.H.I.P. single-board computer. The C.H.I.P. single-board computer is still in development, being funded through Kickstarter.

I mentioned my experience with using X10 home automation with the Raspberry Pi. The X10 system needs to send signals to the modules to turn on and off devices such as lamps. The lamp modules were designed for incandescent lamps; however, I am using compact fluorescent and LED lamps, so I used appliance modules. I could turn the module on, but not off. Once the compact fluorescent lamp was turned on, it made so much electrical noise that the module could not hear the signal to turn off. I could buy a new system to replace the X10 system. A new system would have feedback that would allow the signal to be retransmitted in case of a communication failure. But then I mentioned that the Raspberry Pi is so cheap that I can just install one where I need it, rather than depend on an automation control system such as X10.

I may have mentioned that the Raspberry Pi can act as a peripheral to a vintage computer. I have tried to get DriveWire to run on the Raspberry Pi so that I can use it as a file server, Real Time Clock (RTC), print server, Musical Instrument Digital Interface (MIDI) and telnet server with the Tandy Color Computer.

I hope to see interest in the Raspberry Jam grow. However, it will be interesting to see how the C.H.I.P. computer compares to the Raspberry Pi.

The CoCo Crew Podcast by John Mark Mobley

The Tandy Color Computer has a dedicated podcast!. John Linville and Neil Blanchard host the show. The first show is about an hour long. You can stream the show from a web browser. You can listen to the show on an Android smart phone. And if you have iTunes or the podcast app on an iOS device such as an iPhone, iPod Touch, or iPad, then you can use that too.

www.cococrew.org

<http://directory.libsyn.com/shows/view/id/cococrew>

<https://twitter.com/CoCoCrewPodcast>

Email

show@cococrew.org

Videos About the CoCoFEST! by John Mark Mobley

Below is a list of videos concerning the 2015 CoCoFEST!.

2015 TRS-80 Tandy Chicago CoCoFEST!

https://www.youtube.com/watch?v=40DV4u_LdOI

CoCoFEST! and VCFSE Booth Preview 2015

<https://www.youtube.com/watch?v=BJAoVZOVlO0>

Fahrfall -- Unboxing and Let's Play
https://www.youtube.com/watch?v=R7O3AWvNn_E

COCODOKU preview!
<https://www.youtube.com/watch?v=heC44h5kUSE>

Follow CoCo! preview!
<https://www.youtube.com/watch?v=zm7phDZV2lc>

How to Connect Up To and Talk on IRC CoCo_Chat by Kip Koon

I was first introduced to the IRC CoCo_Chat channel during CoCoFEST! 2013 while I was watching the streaming video of the CoCoFEST! that Aaron Wolfe so graciously provided for us remote viewers to enjoy. If I remember correctly, Aaron posted a link to a web address of the IRC CoCo_Chat channel during that time, so I tried it. To my surprise, a whole other CoCo world existed where everyone can talk in real time about their favorite subjects! I had heard of IRC (Internet Relay Chat) years back, but I never really took an active role in IRC. I ran various programs to extract messages on a bunch of IRC channels in the long past, but I had never talked on IRC before that day while I was watching the CoCoFEST! streaming for the first time.

Over the last two years I have tried various IRC Chat clients, but I could never quite get the hang of it. That is, until a little while back when John Mark suggested I should try HexChat. As it turns out, HexChat is free, which is perfect for my budget, so I downloaded it and tried it out. Well, guess what!?! I was again greeted with the same activity I had seen two years before! Some people stay connected all the time and visit periodically, which sounds good to me. Those individuals who are logged on to CoCo_Chat are not always at their computers, but you can post messages for them and they can see them later. Include their CoCo_Chat name at the beginning of the message so they will get a notification. For me, when I receive a notification that someone has sent me a message, the HexChat icon's background color changes on the Windows taskbar. I have been very happy with HexChat. It keeps me in contact with my friends from the CoCo List on a daily basis. Well, as often as I remember to run the program anyway. Finally I figured out how to put it into Windows 7's Startup folder, so now HexChat begins execution automatically. Cool Beans! So when John Mark asked me to write an article for the newsletter, I jumped at the chance.

The first step of course is to download a copy of HexChat for your particular computer's operating system, which is available at the following link.

<http://hexchat.github.io/downloads.html>

There are versions for Windows 7 & 8, Linux, OS X and Source Code for those that like to roll their own. Once

you have the installation file downloaded, begin installing the program according to your Operating System's procedures.

Now that you have it installed, begin executing the program and start filling out the appropriate fields.

1. For the fields "Nickname:", "Second Choice:" and "Third Choice" enter whatever name you wish for your fellow CoCo_Chat friends to know you by. Obviously they have to be spelled differently.
2. In the "User name:" field, enter your commonly known name, though I do not yet know how to see this on CoCo_Chat. That's what I did anyway.
3. In the "Networks" section, I selected "freenode" and clicked on edit.
4. In the upper left pane, there are three choices for chat servers on Freenode, so I selected the first one, that is "chat.freenode.net/+6697". I don't know if there is much of a difference as to which one you select. Maybe someone more informed about IRC in general and CoCo_Chat in particular can shed some light on this.
5. I looked over the selections below this window pane and checked "Connect to this network automatically"
6. I left "Use global user information" checked.
7. I did not change anything else.
8. Click Close, and then click "Connect".

After a little processing and short pauses, you are greeted with various automatically-generated messages, after which you are ready to begin talking on CoCo_Chat! You're done!

Well, other than starting various conversations with friends you know from the "CoCo Email List", that is about it - short and sweet. I hope you have as much fun on the IRC CoCo_Chat channel as I have! Take care my friends!

Starfleet Out! Qaplah! End Transmission!

New Card Game for the CoCo by Pierre Sarrazin



Color 8

Hi, fellow CoCoists,

I have published a small card game derived from Crazy Eights:

<http://sarrazip.com/dev/color8.html>

It should work on any 32k CoCo with Disk Basic. It comes as a .dsk image file.

I published the source code: it is in C and must be compiled by a cross-compiler that I have been slowly developing for years. The compiler, which only supports a subset of C, is still experimental and probably buggy, but for those who might like to take a look, here it is:

<http://sarrazip.com/dev/cmoc.html>

Calendar of Events

by

John Mark Mobley and Salvador Garcia

Glenside Color Computer Club, Inc. Business Meetings
Thursday, July 9, 2015

Thursday, August, 13, 2015

7:00 PM to 10:00 PM CDT

Schaumburg Public Library

130 South Roselle Road

Schaumburg, IL, USA

Skype access available via: john.mark.mobley

Tuesday, July 14, through Sunday, July 19, 2015

KansasFest APPLE II FOREVER

Rockhurst University in Kansas City, Missouri, USA

Link: <http://www.kansasfest.org/>

Saturday, & Sunday, July 18-19, 2015

COMMODORE VEGAS EXPO (CommVEx) v11.0

Vegas, Nevada, USA

Link:

<http://www.portcommodore.com/dokuwiki/doku.php?id=commvex:start>

Saturday, & Sunday August 29-30, 2015

Emergency Chicagoland Commodore Convention and

Vintage Computer Festival Midwest (VCFMW)

Greater Chicago Area | Elk Grove Village, Illinois, USA

Link: <http://starbase.globalpc.net/eccc/>

Link: <http://vcfmw.org/>

Saturday & Sunday Sept 26-27, 2015

Retropalooza

Arlington, TX USA

Link:

<https://www.facebook.com/pages/Retropalooza/171779462982186>

Friday, Saturday and Sunday Oct 17-18, 2015

Portland Retro Gaming Expo

Portland, OR, USA

Link: <http://www.retrogamingexpo.com/>

Be sure to visit our Website to see up-to-date information on upcoming events. <http://glensideccc.com>

The 25th Annual "Last" Chicago CoCoFEST!



2016 CoCoFEST!

Proudly Presented By

The Glenside Color Computer Club
Fairfield Inn, Lombard, Illinois

Here are the 5 "W's"

WHO? 1) Glenside Color Computer Club, Inc. PRESENTS

WHAT? 2) The 25th Annual "Last" Chicago CoCoFEST!

WHEN? 3) April 23 & 24, 2016

(Sat. 9 am-5 pm; Sun. 9 am-3 pm)

WHERE? 4) Fairfield Inn & Suites Lombard

645 West North Avenue

Lombard, IL 60148

(Near the intersection of IL-355 and North Avenue)

(Same location as 2015!)

Overnight room rate:

\$84.00 plus 11% tax (\$93.24 Total)

Call 1-630-629-1500 for reservations.

You must ask for the Glenside "CoCoFEST!" rate.

>>> YOU MUST REGISTER UNDER "CoCoFEST!" <<<

>>> TO GET THIS RATE <<<

WHY? 5)

A. To provide vendor support to the CoCo Community

B. To provide Community support for our CoCo vendors

C. To provide educational support to new users.

D. TO HAVE AN OUTRAGEOUSLY GOOD TIME!!!

And now, the "H" word.

HOW MUCH? All Attendees - General Admission

Both days: \$10.00 1st - \$5.00 2nd & more

Sunday Only: \$5.00 1st - \$5.00 2nd & more

******* Children 12 and under - FREE *******

For further information, general or exhibitor, contact:

Tony Podraza, GCCCI

Robert Swoger, GCCCI

847-428-3576, VOICE

224-236-5194, VOICE

tonypodraza@gmail.com

rswoger@aol.com

Please note the new starting times, 9 AM, not 10 AM.