CoCo~123

CoCo ~ 123 Memory Map

Upcoming Events:
Tandy Assembly **October 7-8, 2017**
The **27th** Annual "Last" Chicago CoCoFEST! **April 21-22, 2018**
Regular meetings every 2nd Thursday @ Schaumburg Library.

G.C.C.C. OFFICERS

Here is the list of 2017 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	Brian Goers	708-805-1888	Dues and Purchasing
Secretary	Rich Bair	847-835-1309	Records and Reporting
Director	Tony Podraza	847-428-3576	CoCoFEST! Organizer
Librarian	Brian Goers	708-805-1888	Special Events
Editor	John Mark Mobley	847-409-8604	Newsletter Production

Tony Podraza   Chris Hawks   Rich Bair   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:

Brian Goers, Glenside Treasurer
3312 Miller Avenue
South Chicago Heights, IL 60411

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

If you attend the Annual CoCoFEST! your annual contribution is covered for that year.

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:

John Mark Mobley, Editor
4104 Wren Lane
Rolling Meadows, IL 60008
johnmarkmelanie@gmail.com

CONTRIBUTORS TO THIS ISSUE

The RAINBOW Magazine (Cray Augsburg)
Richard Bair
Salvador Garcia
Brian Goers
John Mark Mobley
Mark D. Overholser
Tony Podraza
Ed Snider
Steve Strowbridge
Bob Swoger

G. 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 the following link:

http://ncmedals.com/glenside/splmap.html

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

FROM THE PRESIDENT'S PLATEN

When I was approached, 25 years ago, by a member of the staff of The Rainbow, Cray Augsburg, to do an interview about Glenside, little did I know that I would still be heading up Glenside, today. Oh, not continuously, certainly; there have been other presidents, four of whom are in pictures in the article. Some have moved away, and some have moved on (and are dearly missed). Our goal, however, has always been to help the community to have a good time exploring the depths of the 6809 and its cousins. There is so much activity in the retro interest that I am amazed. Look at what has transpired in those 25 years... I cannot even remember them all. Interfaces for SCSI, IDE, VGA, driving robotic spiders, laser shows, using serial data transfer for file storage on the hard drives of laptops, streaming to a CoCo, SD hard drives for the CoCo, new games and programs and on and on. Look through these pages and the pages of previous newsletters; they are rife with what has transpired with our little friend with the big heart.

I was asked if I wanted to update the interview before it was reprinted in this issue. I think not. It is still as valid as it was 25 years ago.... okay... maybe the annual dues updated to the 15 dollars, and overall, the community is not so "Me DECB, you OS-9". It is all good. It is all fun. We have mellowed, if not matured. LOL

The next FEST! is well underway in planning. Same place next year. Same hours.

And do not forget the Tandy Assembly coming up in Ohio in October.

"Ich bin ein" 6809er. Well, something like that.... hmmm... a possible slogan for the FEST!?

Until next time, I bid you Peace.

In His Grip,

Tony Podraza, President
Glenside Color Computer Club

TREA$URY NOTE$

The money for Glenside as of September is $6593.34. We have added only interest collected for this month.

Brian Goers, Trea$urer
Glenside Color Computer Club

SECRETARY'S NOTEBOOK

Hi CoCoists,

I am Rich Bair, the newly appointed secretary of the Glenside Color Computer Club. Those of you who have attended CoCoFEST!s recently know me as the harried person who checks you in when you first arrive. I will be providing minutes of our monthly meetings to anybody who is interested, and also can be contacted if you need to know a member's address, email, or phone number. However, Randy Weaver is working on a fancy web-based version of our membership data, so my responsibilities there will soon fade away (I hope).

My first contact with computers was a college class in assembly language programming in 1964, but back then computers were not "personal"; they were off in some locked air-conditioned room where only people of very high status could even see them. You interacted with them by working up a stack of punched cards, one for each instruction. I failed to see the future in them at that time.

Strangely, the person who introduced me to more modern computing was my then 62-year-old mother, who came home one day with one of the little Timex-Sinclair gems that were selling at clearance for only

$30. (TS-1000) She set it up next to the little TV at the dining room buffet, and I was curious. At the time I was just building a business repairing the English MG brand of sports cars, and keeping track of my parts inventory had already become a tedious job. When I learned what the TS was capable of doing I decided that it was the very solution to my problem. But almost right away I upgraded to the bigger TS-2068 Timex-Sinclair to get more built in RAM and a bigger keyboard. I used that for over a dozen years to manage my inventory (after learning BASIC and writing my own program), so at the end of each year I would print out hard copy of my parts collection on the little 5" wide thermal printer that Timex made. Finally, though, I got tired of the puny printer, fuzzy display, and chicklet keyboard, and my next upgrade was to the CoCo3.

At first glance I was a little disappointed with the CoCo3, because the internal BASIC is less powerful in some ways than what the TS-2068 provided. As I was trying to learn about the new box, I asked one of my customers who worked at Motorola whether he could get me a datasheet for the microprocessor chip. He did, and that led me to teach myself 6809 assembly language from just the datasheet. By combining my newly-acquired assembly-language skills with my BASIC knowledge, I was able to write a very successful inventory-management program that I still use to this day.

Isn't it ironic that my upgrades were from a membrane keyboard to a chicklet, then to real keys, and now technology has gone all the way back to membranes! But I love my CoCo, with its real keys and just the right number of them. I almost never use half the keys on an IBM keyboard.

My success in using the CoCo was slow and hard-won, because at the time I was not in touch with any support groups. When I discovered Glenside it was a tremendous boon to have a place to go to get answers, advice, and computing accessories (at the FESTs). I wish I had been aware of the club 10 years earlier. That's why I continue to support it. And I hope to see you at the next FEST!

Any time you have questions or comments, my email is mgdoc1@sbcglobal.net.

Richard Bair, Secretary
Glenside Color Computer Club

CoCoTALK!
by John Mark Mobley, Steve Strowbridge,
and Mark D. Overholser

There are so many similarly named things out there that I feel I need to clarify.

```
Key:
    CoCo_chat => Internet Relay Chat
    CoCo Crew => Monthly Podcast
    CoCo List => CoCo Mailing List
    CoCoTALK! => Weekly Live YouTube Show
    CoCoTALK! => Weekly Podcast
```

CoCoTALK! is a weekly Live YouTube series by Steve Strowbridge, aka Original Gamer Stevie Strow. You can watch live or watch it later when the video is posted to YouTube. The show allows live participation either through the YouTube chat (login required) or directly on the show with audio and video via Skype. The show is typically on Saturdays at 2:00 PM Eastern time. It runs for about 2 and a half hours. All I can say is give the show a try and see if you like it.

Link: http://cocotalk.live/

You can contact Steve at ogStevieStrow@gmail.com for information on how you can be part of the show.

Steve has other CoCo related videos on this YouTube channel so give it a try and see what you think.

Link: https://tinyurl.com/yctb7xpb

Also I have another link for you.

Link: http://ogsteviestrow.com/coco/

And not to be left out, check out Steve's CoCo resources index at:

http://imacoconut.com/

Steve Strowbridge adds:

CoCoTALK! is a weekly live talk show about, you guessed it, the Color Computer! It started about 4 weeks before the 2017 CoCoFEST! Mainly to just talk about all the things we were excited about in anticipation of the FEST! 20 weeks later, it continues to be a weekly thing, and we have yet to run out of things to talk about.

We try and do weekly reviews of topics that were discussed on both the mailing list and the Facebook

group, and we often have specific topics or guest speakers with updates on their projects.

There aren't too many rules with CoCoTALK! If it's CoCo related, we'll talk about it. It's a fairly loose and freeform show, and the live chat from the audience often helps steer the direction of the conversations.

Anyone can join the Skype call or live chat. To join the Skype call, you'll need to add ogStevieStrow as a contact, and to view the show live, you can see it on either of these two links:

http://youtube.com/ogsteviestrow
http://live.ogsteviestrow.com

To be notified of these and other live events on Steve's YouTube channel, consider subscribing to the channel, and click on the bell icon to get real-time notifications. There are many spontaneous live streams that come up each week.

I look at CoCoTALK! as a nice weekly filler waiting on each month's CoCo Crew Podcast, so if you just can't get enough CoCo, CoCoTALK! can keep the tank filled rather than waiting once a month.

Date: Mon, 31 Jul 2017 15:30:52 -0700
From: "Mark D. Overholser"
To: CoCoList for Color Computer Enthusiasts
Subject: CoCo TALK #19 - CoCo Hardware

It was, JAM PACKED, all the way through!!!!!

Attending a CoCoTALK! Stream is like going to a Weekly User Group meeting...

You have Special Guests, noted Luminaries, and Former and Current Software Developers... (and a Stellar and Dynamic Host!!)

And presentations from Members working on their Latest Project... And explaining how to setup specific Hardware and Software (Real and Virtual).

In Skype, Call and Text Chat, you can ask Specific Questions... Ask another person attending how they did some particular thing and check in on their project....

What a Fantastic Group of Individuals to "hang out with"....

MarkO

[Note: As of the publication date of this newsletter, Steve is preparing the 27th edition of CoCoTALK!]

The National Museum of Computing
3D Virtual Tour
by John Mark Mobley

The National Museum of Computing is in a section of Bletchley Park. The normal entrance to Bletchley Park will not gain you entrance to the museum. If you go, you need to somehow find the correct entrance. First you travel to the United Kingdom then you find Bletchley Park and then you find the correct entrance to the museum. But what if you could somehow tour the museum online?

Link: https://tinyurl.com/yastoa8z
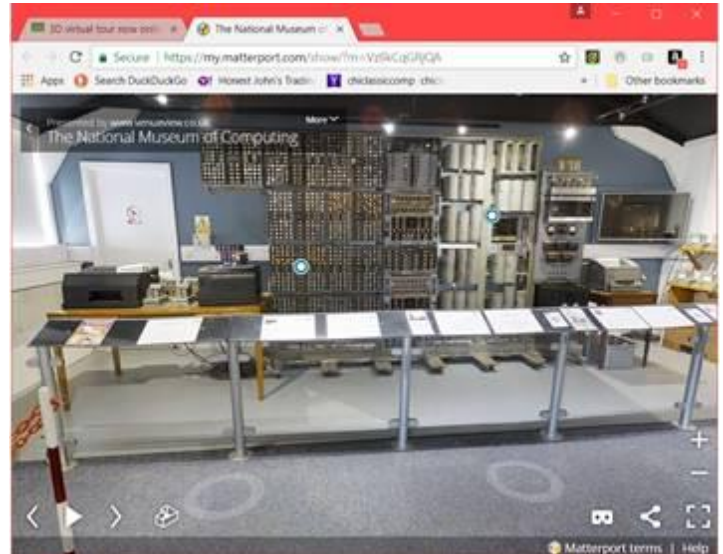
By clicking on the circles on the floor you can move around the museum. You can click and drag the mouse to turn from side to side or up and down. You can zoom in and out. Also notice the mask with two eyes and a nose in the lower right hand corner. This is for virtual reality using a smart phone and a $15.00 device called Google Cardboard.

https://en.wikipedia.org/wiki/Google_Cardboard

The Google Cardboard requires that you swivel around in a chair or stand up and turn around in order to navigate. There are floating blue dots that by positioning the cursor over them for several seconds will cause you to relocate to the location of the blue dot.

So if you cannot go to the museum then perhaps the museum can come to you.

Unfortunately, the virtual tour gives the impression of a dead computer museum, but if you go in person you may find that the computers power up and function. These are functioning computers. The computer in the picture above is the 1951 Harwell Dekatron WITCH computer.

Link: https://en.wikipedia.org/wiki/Harwell_computer
Link: https://en.wikipedia.org/wiki/Dekatron

Each Dekatron tube is a memory or an accumulator that holds a number from 0 to 9 and display all in one.

Other computers include:
EDSAC
Link: https://tinyurl.com/hwgoxce

HEC 1 Computer
Link: https://tinyurl.com/y8q3lsbu

Elliott 803
Link: https://en.wikipedia.org/wiki/Elliott_803

Colossus (Not currently part of the virtual tour)
Link: https://en.wikipedia.org/wiki/Colossus_computer

There are four Colossus computers. The first one, Colossus Mark 1, was the one used in World War II that cracked coded messages from the German Lorenz SZ40 teletype/tele-printer. This computer was destroyed. The second one was the Colossus Mark 2, a faster version of its predecessor. It was also destroyed. The third one was in a movie called Colossus: The Forbin Project. The movie was a work of fiction about a very powerful computer that tried to take over the world. The fourth one was a recreation of the Colossus Mark 2. It was completed in 2008 and is at the museum.

Give the virtual tour a try. It is fun. This would be nice for people that are home bound and would like a way to get out and explore.

Next people will want a mobile virtual presence device.

Link: https://www.youtube.com/watch?v=WjWfur9at2s

100+ emulators Written in JavaScript
by John Mark Mobley

Did you ever wonder what the Babbage's Difference Engine was like? Would you like to try an emulator that runs in your web browser without installing any code? Well today is your lucky day!

Link: https://hackerlists.com/javascript-emulators/

They have:
  MC-10 Emulator
  TRS-80 Model III Emulator
  JS Mocha (Mocha = Java + CoCo)
  CARDIAC (Bell Labs' cardboard computer 1969)
  Digi-Comp 1 (plastic toy that works with digital logic)
  Babbage's Difference Engine
  Turing machine (by Alan Turing)
  Z1 (Relay Computer by Konrad Zuse)
  Z3 (Relay Computer by Konrad Zuse)
  EDSAC
  UNIVAC I
  Apollo Guidance Computer
  Sinclair ZX80 Emulator
  Sinclair ZX81 Emulator
  Various Sinclair Spectrum emulators
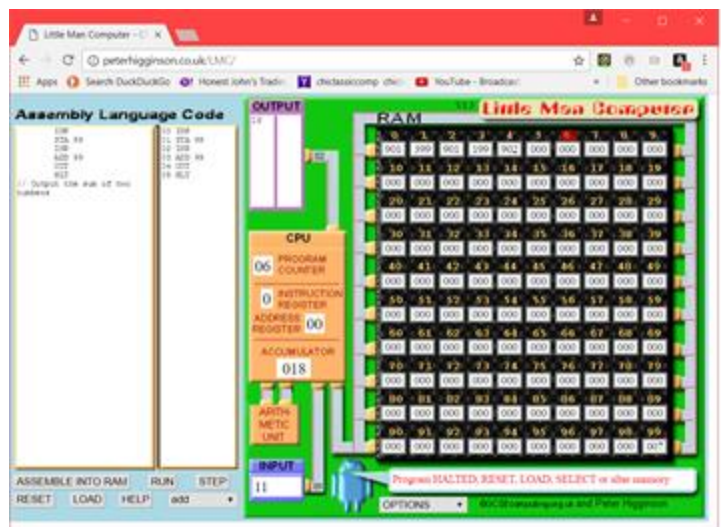 JS/Linux
  JsDOSBox
  Jupiter Ace (Forth)
  Little Man Computer (emulator by Peter Higginson)
  And much, much more…

The Little Man Computer has animation that shows memory fetches. Each memory location can hold a value from -999 to 999. This is more a base 10 computer than a base 2 or binary computer. This is a good way to begin to learn assembly language and to learn how computers work.

The RAINBOW interviews Tony Podraza

By: The RAINBOW Magazine
Date: November 1992

Tony Podraza 1992

If you download the magazine then see page 12.

Links:
https://archive.org/details/rainbowmagazine-1992-11
https://archive.org/details/rainbowmagazine
https://en.wikipedia.org/wiki/The_Rainbow_(magazine)

Effective communication is the cornerstone of any Community, and the Color Computer market is certainly no exception. In support of this and to get the word out about groups and clubs, we asked Tony Podraza, president of the Glenside Color Computer Club, if he would agree to an interview to be published in THE RAINBOW. Tony did not hesitate in saying "Yes!"

The interview took place via fax machines (another marvel of rapid communication) over a period of two weeks. In some cases the answers Tony provides are the result of discussions with other Glenside members. We believe you'll be as interested in these representative views as we are.

THE RAINBOW: We understand the Glenside Color Computer Club is one of the largest users groups in the CoCo Community. Just how many members do you have?

Tony: Currently there are 146 club members who live in the United States. Of these, about 30 are in this general area and regularly attend meetings. The rest are out-of-state members and live in places from California to New Jersey. And we don't restrict membership to U.S. residents. Glenside has four members who live in the Netherlands and Canada.

THE RAINBOW: Wow! Perhaps Glenside is the largest users group for CoCo owners. What makes the club so strong?

Tony: Glenside's strength is just that - Glenside. That sounds a bit like the hound chasing its tail, doesn't it? Let me explain. The total of Glenside is the sum of its parts: the members make the difference. The

support we give each other, the information we pass to one another via the newsletter, the way we work to help other CoCo users all add up. As one member pointed out, "the support that Glenside is ready to give to its members and the Community has continued to strengthen it from its founding."

Glenside's exposure to the Community has helped to strengthen it as well. As you know, the club has hosted at least four RAINBOWfests and was officially represented at the second Atlanta CoCoFEST and the recent Chicago CoCoFEST. All this highlights the commitment of the club to the support of the Community.

THE RAINBOW: Speaking of support, how are membership dues applied and what can club members expect from Glenside?

Tony: Our annual dues are used to cover a number of expenses, the first and foremost of which is *CoCo-123*, the newsletter that keeps Glenside in touch with Glenside. Second, these funds help us keep a meeting place available. We meet at the Glenside Public Library, from which we take our club name. Another expense is the maintenance of our club BBS. Also as a benefit of membership, we distribute a "member's utility disk" (written by Joel Hegberg just for Glenside), and we have plans to distribute three more disks to the membership at no extra charge. Finally, but certainly not least, we use these funds for whatever else we can find to support the club and the Community. An example is our involvement in CoCo shows. It is to this support that the treasury is directed. Well ... there is the one exception. We do have an annual social event, most recently a picnic, for which the club provides meat and rolls - a whopping $25-$30 at best guess.

Even if they don't live in our area, new members can take advantage of most of these things for the membership dues they pay, *CoCo--123* has received a number of kudos from people in the publishing world and has become a strong medium of club interaction for the "members at large," Indeed, it was an article written by a local member that brought one gentleman *back* to our exhibit in Atlanta in 1991 after he had hemmed and hawed about joining, As he related to me, he had already "found about $15 worth of information in the newsletter" that he had received as part of a free handout package.

We also have the "Glenside Club Plan" that invites vendors to submit ad copy for publication in the newsletter. Reciprocal token discounts on products are welcome for this service but are not required. Member savings from this plan are an added benefit.

Other methods of interaction with the Community include the SIGs on Delphi, where a number of members gather: networks set up through STGNet; and hopefully, in the future. FIDO.

It is important to note that membership is not only a privilege but carries responsibility as well.

We believe every member has something to share, and we encourage participation via the newsletter and club meetings, if possible.

THE RAINBOW: Describe a typical meeting.

Tony: Meetings open with the sounding of the electronic presidential gavel – actually a three-sound siren repackaged in a gavel-shaped housing sporting a Tandy RAM-button handle. After that bit of nonsense is out of the way, visitors and new members are recognized, then we hold a short business meeting. After this we share news and views, questions and answers, and maybe a little gossip is supported (but *never* started). During the last half of the meeting, a scheduled demo takes place. This could be a run-through of a program or a hardware demo.

After the meeting, the majority of attendees adjourn to the local restaurant for "milk and cookies." This is where the brainstorming starts to take place. It was at one of these sessions that the RGB-A-to-TTL video adapter was spawned.

THE RAINBOW: Earlier you mentioned a club BBS. Would you give our readers some of the details?

Tony: Yes, The Glenside CoCoRama BBS has been in operation since 1986, and its sysop is Dave Barnes. The system is online 24 hours every day and can be reached at (708) 587-9837. Inbound callers should set their terminals at 8-N-1 for 300-, 1200- or 2400-bps access. The board can be used by anyone, though file downloading on the first access is limited.

In addition to CoCoRama, there are at least two other BBSs currently operating in direct support of the club. They are listed in the newsletter and also on the CoCoRama logoff screen.

THE RAINBOW: We have seen some Color Computer users groups that are really nothing more than high-seas boarding parties. What is Glenside's position on the subject of software piracy?

Tony: I'm glad you asked. As responsible people, we need always to be aware of our actions and their effect on others. The wanton passing around of commercial software does nothing but discourage authors and vendors from continuing to support the market. Indeed, where is the market when you can get the product from your buddy across town? When authors no longer produce new software because there is nothing to be gained from it, who's going to write the good stuff? Your buddy?

For the record, Glenside doesn't support software piracy in any form. As stated in our bylaws, anyone found using the club system for such practice will be disassociated from the club. These [now] non-members forfeit their annual dues, do not receive any club benefits or services, and may not rejoin. We don't have a problem.

THE RAINBOW: What is the personal "toll" on you as president of Glenside, and what advice would you offer those who seek to start their own clubs?

Tony: Time and money: I spend many hours on the phone asking and answering questions, and arranging demos and the like for the meetings. The real winner here is the phone company – that's where the money part comes in. Of course for every hour I spend on Glenside, that's another hour not spent with my family. This can be disastrous if not balanced carefully. Finally, there is the toll that ethics, politics and tactfulness puts on a person. I have to be very careful in what I say and do so as to not misrepresent information. CoCo users are a close-knit family, and I have no intention of knocking the feet out from under anybody. The efforts put forth to maintain an organization like Glenside without rocking the boat may not be monumental, but they are very real.

Advice for others? First, don't wait for someone else to start it! If you know one other CoCo user in your area and there are no organized users groups, get together with that person; you now have a "club." Find a place to meet - just about any place will do. Then get the word out; put notices in the library, the grocery store ... anywhere you can find to let others know you are there. Develop a meeting format that the majority of members are comfortable with - it doesn't have to be formal but should be interesting. Also develop a set of realistic goals and guidelines. If you want the club to be ongoing, the core of the club needs to be dedicated and energetic,

Operating a users group may also require some money to maintain things such as a roof over your heads, mailing newsletters, and purchases for the benefit of the club. So after you have an idea what your expenses will be, be prepared to initiate an annual amount for membership dues. Above all, try to strike a balance. Remember that the club does not belong to any one member but is the medium through which all members benefit in terms of knowledge and understanding of the CoCo, regardless of their individual preferences.

THE RAINBOW: What percentage of Glenside's membership uses OS~9?

Tony: Judging from our meetings and responses from the membership, I would say 75 to 85 percent of Glenside's members use OS-9 for 85 to 90 percent of their work with the CoCo. I would estimate that less than 25 percent of the club membership uses Disk BASIC exclusively. This is not to say that the rest of the Community follows suit – there are a lot of Disk BASIC users out there. But as knowledge of the CoCo's capabilities under OS-9 grows, the percentages are starting to lean in that direction.

THE RAINBOW: Debate between the diehard OS-9 und Disk BASIC camps is often quite intense. Would you say this schism is an inhibiting factor in any potential

growth of this market? If so, what possible solutions would you suggest?

Tony: No, not really; not any more than the GUI environment versus DOS environment is an inhibiting factor in the IBM (and compatible) world. While it appears to be true that the future growth of this market lies with OS-9, it is very beneficial for users to know a little about Disk BASIC before attempting to use OS-9. What is important for people to understand is that OS- 9 is not an enemy but merely another environment in which to use the hardware. Far too many Disk BASIC users end up disliking OS-9 before they receive the support necessary for a clear understanding of the system. One of Glenside's goals is to provide that support for both Disk BASIC users and those who choose to venture into the world of OS-9.

THE RAINBOW: It is generally accepted that MS-DOS is the most widely used platform across the computing industry. For whom would you say the Color Computer is a viable machine and why?

Tony: For the same people for whom it has been a viable machine since its inception - those who are on a tight budget and want to learn about computing; hobbyists who want to experiment; those who want to find out what true multitasking/multiuser capabilities are like without having to buy a 386 or mini-mainframe. Of course that's the serious side. The CoCo is also a pretty fine game machine (especially according to Tandy). Unfortunately this aspect has also been the area of greatest advertising for the machine - to the extent that the real power of the 6809 has been hidden from the general public.

THE RAINBOW: Yes, it is sometimes difficult to enjoy playing games knowing they have been somewhat of a stigma to growth. How has Tandy's discontinuation of the Color Computer affected Glenside?

Tony: It has increased the need for our existence and has made us a stronger voice in the community, I think, because of our willingness to *be there* for the Community. It goes without saying that the product knowledge and support from the local retail outlets for the Color Computer has never been what it is for the other systems. Now the average salesperson's desire to support a non-income producing item is in the twilight zone. When you need someone to answer a question or solve a problem, to quote a phrase, "who ya gonna call?" It ain't Ghostbusters! It'll be your local club co-member. And Glenside is just *one* of those local clubs. We've simply got a bigger "ear" to hear the callers.

THE RAINBOW: What can the average person do to ensure continued enjoyment of his CoCo?

Tony: Link up with other CoCo users; be imaginative in using the CoCo. Robert Kennedy once said,

"Some people see things and ask 'why?' I dream things that never were and ask 'why not?'" Tell others what you are doing with your CoCo and share your discoveries. You may have found something the next person has been working for a long time to solve. The joy of discovery cannot be replaced.

Communication is the key to the survival of the CoCo. Get in touch with other clubs and users through whatever means you have, whether that is by telecommunications, newsletters, subscriptions to dedicated publications or road trips to gatherings. There are many "orphaned-computer" users groups out there, many of which are thriving simply because they continue to communicate.

THE RAINBOW: We would like to know what comments Glenside has about THE RAINBOW.

Tony: For starters, how about helping to keep the hardware in the active community by opening a "classifieds" section? I belong to a number of national organizations that produce major publications, and all of them publish such a section.

The current format is really colorful, but the paper it is printed on is not easily preservable or long-lasting. Possibly you could do something there. And we'd like to see a return to the 8½-by-11 size, perhaps with stitch binding.

We like the assembly-language programs and would like to see them continue for both Disk BASIC and OS-9. The inclusion of C-language programming articles would be nice. I particularly enjoy hardware articles, so those should stay around, too.

Despite the publisher's comments a few months back regarding the 68xxx machines, I believe items relating to them should be considered for publication. The people who have made the CoCo what it is are doing the same for those computers. To shy away from 68000-based computers because "bunches and bunches of software" are not currently available is not valid. And because of the commonality of OSK with OS-9, I feel that the software for these machines should be covered in the venue of the publication from time to time.

Finally, there is a lot of murmuring out here about the possibility of THE RAINBOW becoming a merged CoCo/MS-DOS publication, even though most readers are just happy to be able to get the magazine. Consider going to a bi-monthly schedule instead, and consider reviewing and reducing prices on products. Of course, I don't know the logistics and costs involved; I'm just the elected messenger.

THE RAINBOW: Thank you, Tony, for taking the time to answer our questions and for giving us some honest feedback. Your answers are important to us, and they should be of interest to our many readers as well. Yes, there are a lot of things we must consider with every decision we make, and while these decisions make sense to us, not everyone agrees with them. This doesn't mean we won't make changes, but we must be

careful when we do. Regarding a merged publication: we believe those fears will prove unwarranted. THE RAINBOW is a COCO publication.

Reaching Out

Now is as good a time as any to make sure you stay in contact with other users of the Color Computer. The currently available means to this end include joining users groups, writing letters, subscribing to publications, and taking advantage of online services such as Delphi, CompuServe and CoCo BBSs. For more information about CoCo clubs and BBSs that may be in your area, see "Intercom" elsewhere in this issue of THE RAINBOW.

Mike Knudsen (second from left), author of UltiMusE, regularly attends the Glenside Color Computer Club meetings.

Chris Hawks (center) of Hawksoft answers another user's question.

The RAINBOW Magazine had a mascot called the CoCo Cat or a comic strip whose main character was the CoCo Cat. The CoCo Cat has been known to make appearances at computer festivals. I found this image in the July 1988 issue of the "The RAINBOW Magazine" between pages 98 and 99.

CoCoBits: What is FPGA and why is it important?
by Salvador Garcia

Hi all! I would like to discuss Field Programmable Gate Arrays (FPGA) and why these are important to the CoCo world. But before I get into the thick of it I need to present a few concepts. There is a saying in the computer science world that says, "Everything is ones and zeros." This has its systems design counterpart, "Everything is Vcc or Ground". The two are related, where Vcc corresponds to 1 and Ground (or Gnd) corresponds to 0.

All digital electronic devices process the 1s and 0s using gates. A gate can be seen as the most elementary unit in a digital hardware device. Each gate has a very specific task. For example, a popular gate is called the NAND gate. It can process any number of signals (1s or 0s) and produce a specific result following a predetermined rule. The following table shows the result using two signal inputs:

9

NAND Gate		
Input 1	Input 2	Result
0	0	1
0	1	1
1	0	1
1	1	0

The rule for a NAND gate can be read as "Not (Input 1 and Input 2)". The "and", being inside the parenthesis, is calculated first. The result of Input 1 and Input 2 can only be one if both input 1 and 2 are 1. If not then the result is 0. However, there is a "NOT" in front of the "AND" operation which negates the result. For example, if the result of the AND operation is 1 then the overall result of the rule as a whole is "Not 1" or in other words, 0.

Using the NAND gate, along with other types of gates, any kind of digital circuit can be built. This includes memory and the microprocessor. In fact, I had a digital systems professor who used to say that any digital circuit could be built out of NAND gates.

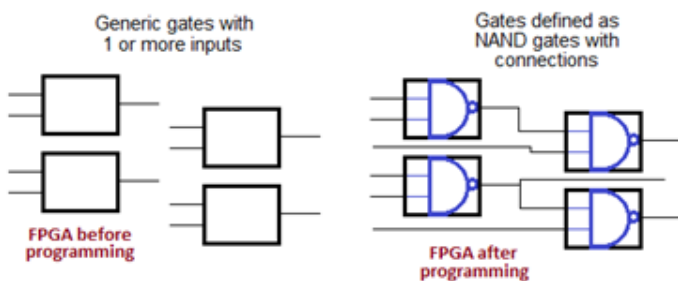Enter the FPGA. As its name implies, this device is an array, a very large array, of gates that are field programmable. In this specific case, "field programmable" means that the array of gates can be configured by the end user, that is, us! The device is shipped with thousands of generic gates that do not have any functionality or connections. It is up to the hardware design engineer to give these generic gates meaning. Does the engineer want them to be NAND gates? Or perhaps another type of gate? How should each gate be connected to the rest of the circuit?

Generic gates with 1 or more inputs — FPGA before programming

Gates defined as NAND gates with connections — FPGA after programming

To configure and connect these gates, the designer uses a Hardware Description Language, or HDL for short. Two of the most popular HDLs are VHDL and VERILOG. The HDL describes the functionality and connections of the device in every detail so that when the FPGA is programmed using the HDL source, it becomes a hardware representation of the HDL. What can be done with this? Do you want to blink an LED? No problem, you can program your device to become an LED blinker, although this is like boiling an egg with a nuclear reactor.

As of this writing, two intrepid souls have configured the gates and connections on FPGA devices to emulate a Color Computer 3. Both use FPGAs that have hundreds of thousands of gates available. The HDL used is a vast and complex program that implements the 6809 processor along with all the support circuitry that is needed to transform a generic, initially do-nothing FPGA into a Color Computer.

Why is this important? As the decades pass us by, original Color Computer hardware will become scarce. Color Computers that are in use today will eventually fail. New hardware to replace old failing hardware is nonexistent. If we, as a community, intend to keep the Color Computer legacy alive, we need to look at alternatives. If we can't find, and much less manufacture, original hardware then the next best thing is to emulate it using modern technology, such as generic programmable digital devices.

Are these emulated CoCos perfect? No, but as far as compatibility goes, percentage wise, they are way up there in the high 90s. They will run almost every piece of software that is available now, including operating systems such as OS/9 and NitrOS9.

In closing, I would like to name these two intrepid souls and provide a brief description of their projects. Links with more information follow.

The two brilliant and extremely tenacious minds behind the FPGA CoCos are Gary Becker and Roger Taylor. Gary's project is called FPGA CoCo 3. He has an active Yahoo Group dedicated to his project. The other person is Roger Taylor. Roger's project is called CoCo on a Chip. What is best about these projects is that both of them encourage us to build our own FPGA based CoCo. There are instructions and a helpful community that will guide any interested party through this project.

This is a fun learning experience and the knowledge obtained can be an asset in the professional hardware design world, but it is not cheap. Expect to invest somewhere between $100 to $250 USD, depending on the configuration, plus applicable shipping. Both projects have accessories available that expand the functionality of the original design and are a worthwhile addition, but must be purchased separately.

Let's build a CoCo! We have the technology. We can make it better, stronger, faster.

Gary Becker's FPGACoco:
https://groups.yahoo.com/coco3fpga

Roger Taylor's CoCo on a Chip:
http://www.cococommunity.net/how-to-build-your-own-coco-4/

The Zippster Zone Hardware

by John Mark Mobley, Salvador Garcia and Ed Snider

Welcome to the Zippster Zone! Zippster the Great has been working on providing hardware for the Color Computer and the MC-10. After looking over his Website, we had questions. Before we get to that, we present a list of the hardware projects that he has been working on, but even before that, since Zippster uses lots of acronyms and technical terms, we thought that it would be a good idea to present a brief glossary describing what most of these acronyms stand for:

```
68k      => Motorola 68000 series microprocessor
FDD      => Floppy Disk Drive
FPGA     => Field Programmable Gate Array
HDD      => Hard Disk Drive
MC-10    => Micro Color Computer Model MC-10
MC6847   => Motorola Corporation VDG
MM/1     => IMS Multi Media One OS9 68k computer
MPI      => Multi Pak Interface
OS9      => Microware Operating System (OS9/6809)
PSG      => Programmable Sound Generator
RAM      => Random Access Memory
RGB      => Red Green Blue video signal
ROM      => Read Only Memory
S-Video  => Separate Video (Y/C)
SCSI     => Small Computer System Interface (Scuzzy)
SD       => Secure Digital, Flash Memory
SDC      => Secure Digital Card, Flash Memory Card
SMT      => Surface-Mount Technology
VDG      => Video Display Generator
VGA      => Video Graphics Array
```

Now that that is done, here is the list of hardware projects:

1) CoCo 3 FPGA
2) CoCo 3 RGB to S-Video and Composite
3) CoCo SDC (FDD and HDD simulator)
4) MC-10 Composite Video Out
5) MC-10 Game Carts
6) MC-10 Supercart RAM, ROM, Audio, Joysticks
7) MC6847 VDG-to-VGA (COCOVGA)
8) MC6847 External Character ROM
9) MC6847 VGA (Non-FPGA)
10) Motorola MC6847 VDG Replacement
11) MCX-128 (MC-10 memory expansion & ROM)
12) Mini-MPI (two slot MPI)
13) Orchestra 90cc compatible sound cartridge
14) RGB2VGA (RGB-to-VGA)
15) SCSI2SD (SCSI-to-SD)
16) CoCo PSG, a chiptunes cart for the CoCo
17) MM/1 Computer

As you all can see, Zippster has been busy! Check out the following link:
https://sites.google.com/site/thezippsterzone/home

One of the projects is the MC-10 game cartridge, as is illustrated in the image.

MC-10 Game Cart

The MC-10 is a well-featured and versatile computer based on the Motorola MC6803; however, its keyboard definitely needs a makeover. It would be fantastic if a PS/2 keyboard would work with the MC-10 in addition to the built-in keyboard. Of course, you can develop on an emulator or in Windows/Linux using cross platform development tools.

Following are the questions that we had and Zippster's answers:

John Mark Mobley (JM): Can people order hardware from you?
Zippster (Z): Yes, people can order from me. They generally will just have to check to see what's available.

JM: Do you build the boards, offer kits, or both?
Z: Rarely I will offer a kit if it's all through hole components, but most designs are SMT.

JM: Do you build one board at a time or wait for the demand to reach an order of 50 or so?
Z: Everything offered is built by hand, generally 20-50 at a time.

JM: What is the process to get a board?
Z: The process to get a board is just to contact me and see what is available or get onto a list for when something is available, and arrange for purchase. I will often offer items up on the Facebook group or email list [CoCo List] as well.

Zippster is easily reachable through the CoCo List or on the TRS-80 Color Computer Facebook group.

Ian Mavric's Floppy Disk Controller
by John Mark Mobley

Ian Mavric makes a floppy disk controller for the CoCo 1, 2, and 3, and the Dragon Computer. Look for RE-FDC502 on the following link.

Link:
http://ianmav.customer.netspace.net.au/trs80/cocos

Ian Mavric's RE-FD502

StrongWare
by John Mark Mobley

John Strong develops software and 3D printed cases for hardware projects.

Let's get the list of acronyms and unique terms out of the way…
  MIDI => Musical Instrument Digital Interface
  Program Pak => ROM Cartridge
  RGB => Red Green Blue video signal
  ROM => Read Only Memory
  VGA => Video Graphics Array

Cases are made for the following boards:

  1) Jayeson Lee-Steer's MIDI Board
  2) MCX-128 (MC-10 expansion board)
  3) RGB2VGA (RGB-to-VGA)
  4) Bomb Squad Game (Program Pak)

Link: http://strongware.net/

3D printed MCX-128 Case

John Strong holding the Bomb Squad game in a 3D printed two-tones-of-plastic Program Pak

Jim Gerrie's New MC-10 Software
by John Mark Mobley

Jim Gerrie continues to crank out new software. The best way I know how to tell you what is new is to point you to his YouTube page where you can view his videos from newest to oldest.

Check out the following links…

http://faculty.cbu.ca/jgerrie/Home/jsoft.html

http://jimgerrie.blogspot.ca/

http://faculty.cbu.ca/jgerrie/Home/jgames.html

https://www.youtube.com/user/BenevolentChum/videos

CoCo 3 Pac Man
by Salvador Garcia

An exciting development that has been making the rounds, both in the Color Computer list and in the Color Computer Facebook page, is that we now have two PAC MAN games for the Color Computer. The first is by Nick Marentes and the second is by Glen Hewlett. This

write up focuses on Glen's implementation of this classic and venerable game.

Glen's PAC MAN is for the Color Computer 3 with 512KB of RAM. That wasn't too much of a problem, since I don't have a Color Computer to begin with, but fortunately for this community we have a variety of emulators that are eager to help out the disadvantaged who do not own this historical computer.

I configured the Virtual Color Computer (VCC) for 512KB RAM and loaded the DSK image into one of the virtual floppy drives. I should note that the original image that is provided for download is missing a key component. Glen used the original PAC MAN ROM as the core for his game. Since this ROM is copyrighted, Glen thought it wise to not freely distribute it. What this means to the eager and anxious player is that aside from downloading the PAC MAN DSK image, s/he must also acquire the PAC MAN ROM image file and then copy that file to the DSK image. Glen kindly provides detailed instructions on how to copy the ROM image to the DSK floppy disk image. It is advisable to read the PDF file that is included in the download.

Once the DSK image is ready and has been mounted into the VCC's virtual floppy drive, a quick DIR reveals a few files, as shown in the image.

```
OK
DIR

PACMAN     BAS   0  B  1
GO         BIN   2  B  52
PACMAN     5E    2  B  2
OK
```

Although I used VCC for this write-up, Glen's PAC MAN can also be played on genuine hardware by writing the DSK image to a real floppy or by copying it to an SD card that is then inserted into the CoCo SDC. Be sure to place PACMAN.BAS as the first file on the disk so that the program name can be found by *LogiCall* and placed as the Disk Name.

To start PAC MAN, enter the following line:

RUN "PACMAN

The game is divided into four different screens.

The first screen is the initialization screen, also commonly known as a "splash screen". This displays while the game is being initialized. Once that is done the second screen displays. This screen allows the user to personalize the game via a simple menu. Menu navigation is done using the up/down arrow keys on the keyboard and option selection is done using the left/right arrow keys. The on-screen instructions state that to begin play just press the space bar. Also note the mention of the "1", "2" and "5" keys.

Pressing the space bar moves the game to the third screen. Here, the gamer needs to perform two tasks. The first is to feed the game some coins. This is done virtually by pressing the number "5" key. This can be done one or various times for additional credits. The second activity is to select a one or two player game. This is done by pressing either the "1" or "2" number keys. Once one of these keys is pressed the game jumps to its fourth screen and the game begins! If the third screen does not see any activity within a certain time it automatically goes into demo mode, but no worries! The player can press the "5" key to add credits and the "1" or "2" keys to select the number of players and begin the game.
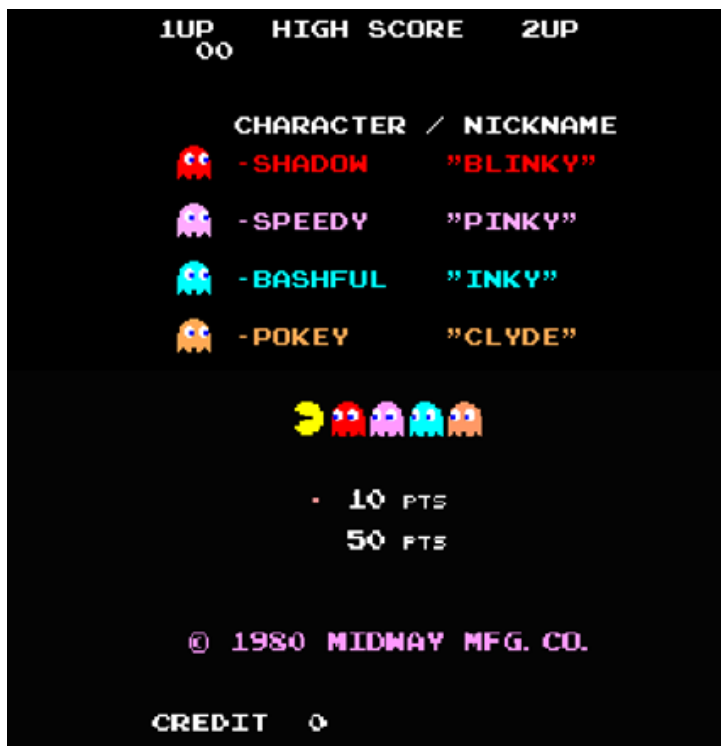
In a few words, the game behaves exactly like the original arcade game, in the visuals, the audio, and the game play. The major difference in game play is that the original arcade game used contact joysticks while the Color Computer uses resistive joysticks. This might give a different sensation from what the gamer is accustomed. A unique feature to this port is that the maze is not fully displayed on the screen. Instead, only the bottom or top half is displayed. The maze pans up or down automatically depending on the location of the Pac Man. The documentation indicates that the panning action can be turned off.

Panning the maze was an excellent idea. Other possible options were to have the gamer turn the monitor on its side, have the maze be smaller so that it could fit inside the screen in its entirety, completely distort the maze so that it would be horizontal instead of vertical, or have the gamer purchase a monitor that could be configured vertically. Making the maze smaller is the better option of these; the other options seemed either weird or expensive.

Before I wrap up this article, I want to discuss the technical aspects of Glen's PAC MAN game. How did he do it? Did Glen start from scratch and author the entire game? Why is it that it behaves so much like the original arcade game, right down to the Easter eggs? What is this mysterious ROM file? Why do I need to get the ROM file? What is it for and why doesn't Glen just include it with his download so that the game is ready to play out of the box (or more accurately, out of the download folder)?

The original PAC MAN arcade game, when it came out in Japan in 1980, was a unique game that went against the typical norm of space shoot-em up video games. The arcade game consisted of a full-blown, custom designed computer based on the Zilog Z80 microprocessor. The software resided in a ROM and executed automatically once the game powered on.

The ROM file that Glen's software needs is an exact replica of the code found in the arcade game's original ROM. This explains why he can't include it with his software or why he can't host the file. The code isn't his. He would need explicit permission from the code's owner to be able to host and/or distribute this code. The PAC MAN game checks for the presence of the ROM file and if found, assumes that the player has a legal right to play the game.

This makes Glen's software even more impressive. Initially he started from the Z80 code. He wrote a transcoding app that reads the contents of the PAC MAN ROM, interpreted them and then performed a quick-and-dirty translation into 6809 code. This was just the beginning.

Z80 and 6809 code is different enough that the 6809 can't perform some operations that are inherent to the Z80, but the 6809 can perform other Z80 operations more efficiently, given that the programmer knows how to expertly program the 6809. Glen meticulously analyzed the 6809 code that was generated by his transcoder app to determine whether there was a better (read faster) way of translating the code and proceeded to directly modify the generated code to incorporate the most efficient 6809 code. Glen also took into account other irreconcilable differences between the two processors, such as storage format of 16 bits words and extra or missing microprocessor features.

The speed of the original hardware was 3MHz. Glen needed to make sure that when PAC MAN was played on the Color Computer 3, the feel of this speed was preserved. Doing so kept the animation, graphics and sound closely synchronized to the original game.

Another challenge was being able to use the video and audio algorithms in the original Z80 ROM code in the CoCo, specifically the CoCo 3. Obviously, the arcade game's sound and display hardware was different from that of the CoCo's. Glen's solution was to create an emulator that used these original algorithms with CoCo hardware. The emulator is part of the PAC MAN game application.

Another challenge was handling the animation. This involved the background text and tiles, and sprites. The original arcade game had special hardware for this. Glen recreated this environment in the CoCo, also through emulation. One of his priorities was to get the sprite animation right, duplicating the movement and behavior found in the original game. To improve the sound, Glen recorded some PAC MAN sound samples using MAME and found a way to play back two audio

samples simultaneously. This provided a more realistic audio comparable to the original game.

So, when you play Glen's PAC MAN game remember this: You are actually playing the original PAC MAN game on a CoCo. It is not a clone, it is not built from scratch. It is the one, the only, the true PAC MAN, originally transcoded from the Z80 arcade game code.

Special thanks go to Glen for providing the CoCo community with a fun and classic game for the Color Computer and also for helping me in the writing of this article by answering questions and providing key information.

Video: https://youtu.be/UrjF21Vou4M

Blog: https://nowhereman999.wordpress.com/

Download: https://tinyurl.com/yba3q5tb

*(Glen's PAC MAN is on disk **89** in **LogiCall**. Ed.)*

LogiCall - **What does it do?**
by Bob Swoger

fanswer, "It does it all." Who needs it? My answer? "The guy with a CoCo 3 or VCC and Drive Wire." Let me show you what I mean. Let's say you have your CoCo 3 connected to your PC with Drive wire installed. Now you turn on your CoCo. Your CoCo responds with the screen below.

```
DISK EXTENDED COLOR BASIC 2.1
COPR. 1982, 1986 BY TANDY
UNDER LICENSE FROM MICROSOFT
AND MICROWARE SYSTEMS CORP.

HARD DISK BASIC
BASED ON CODE IN RGBDOS
ORIGINAL (C) 1986, 1989
RGB COMPUTER SYSTEMS

CHANGES FOR EMULATOR BY R.GAULT
MAY 2002

OK
```

Now let's say you want to run Jim Gerrie's game HOSTAGE. First you had to know it is on disk image 31 of 256 total images. You enter "DRIVE 31". You next type "DIR" to confirm the program is on this disk image.

```
OK
DRIVE 31
OK
DIR

RODOC     BAS  6  HOSTAGE   BAS   5
ORBDERRA  BAS  8  CADET#1   BAS   5
JAVA      BAS  2  CRIOLOAD  BAS   2
CRIO      BAS  2  CHAMBERS  BAS   4
TRIORACE  BAS  4  TROOPER   BAS   4
STARLOG   BAS  4  SANDSTON  BAS   8
MONSTERS  BAS  8  SNOFIGHT  BAS   5
DIR       BAS  1
DRIVE=31   FREE=0
OK
RUN "HOSTAGE"
```

Finally you type RUN "HOSTAGE" to run the program. That took 27 keystrokes!

Let' compare this to *LogiCall*. Power up your CoCo and you will see:

```
File  Configuration  Cartridge                    Help

Disk Name: DISKS
%%%% for Tandy Color Computer V7.0   %%%%

DISKS     BAS      SLOWPOKE BAS
FASTPOKE  BAS      SETSPEED BAS
FINDFILE  BAS      TAPES    BAS
TERMINAL  BAS      NIBSHOW  BAS
DWMOVE    BAS      MOVE     BAS
35TRACK   BAS      WRITER   BAS
FORMAT    BAS      DWFORMAT BAS
40TRACK   BAS      ATTR     BAS
STEPRATE  BAS      RADIOHRZ BAS
STARTOS9  BAS      CHR$     BAS
L         BAS
DRIVE=3   FREE=2

Drive? 31_
```

Type 31 and ENTER. You will now see:

```
File  Configuration  Cartridge                    Help

Disk Name: RODOC
%%%% for Tandy Color Computer V7.0   %%%%

RODOC     BAS      HOSTAGE  BAS
ORBDERRA  BAS      CADET#1  BAS
JAVA      BAS      CRIOLOAD BAS
CRIO      BAS      CHAMBERS BAS
TRIORACE  BAS      TROOPER  BAS
STARLOG   BAS      SANDSTON BAS
MONSTERS  BAS      SNOFIGHT BAS
DIR       BAS
DRIVE=31   FREE=0

Program? HOSTAGE.BAS _
```

Press ENTER, then right arrow followed by ENTER. You are now running HOSTAGE.BAS. That took 6 keystrokes, not 27.

Because programs usually contain a BASIC driver, a machine code file and picture files, *LogiCall* defaults to a Brief directory showing only BASIC drivers. To see all files on the drive enter "V" at either the Drive? or Program? prompt and *LogiCall* will display a Verbose directory. Now you will see the .BIN, .DOC and .TXT files. Text files, both .TXT and .DOC and Picture files can be shown on the screen without first calling an application.

To see the picture above, select drive 205, then select "V". Next select "STARWARS.BIN". Nice?

Now let's talk about disk management. If you haven't done this for a while, you might have to pick up your manual to search for the syntax for a particular management operation. Not needed with *LogiCall* because these operations are in an onboard Help file.

At the Program? prompt you can press 3 different keys to see this help file. These three keys are F1, ? and H. Press any one of these followed by ENTER and you will see the file above. You are shown 22 single keys that will do all of your disk manage functions and more.

LogiCall will make it easy to erase, rename, copy, or move a file and format a disk. It can also copy one disk to another. Move and Format will actually call in separate utilities to do these tasks because your CoCo 3 may be running with Drive wire. Drive wire requires more information for these two functions and *LogiCall* knows how to get this information without your help.

LogiCall runs under HDBDOS that provides a wonderful feature called AUTOEXEC.BAS. AUTOEXEC is a small file the user writes and saves to a disk. When the CoCo is first powered up HDBDOS looks for and executes this file. The file can select a drive, POKE memory locations and select a program to run, Instead of the user having to write this AUTOEXEC file, *LogiCall* writes it for you and saves it to the current disk. Pressing A ENTER starts the AUTOEXEC procedure. If the user wants to modify this file, he can type LIST at the TYPE RUN prompt and make any modifications he wants before he types RUN to save the file to disk. He can run the file by pressing N ENTER at the Program? Prompt if AUTOEXEC is on the current disk.

Other interesting keys from the Help file are T, D, W, S and Q. If T is selected at the Drive? prompt the tape drive is selected. If T is selected at the Program? prompt your favorite Terminal program is selected. If W is selected your favorite Word processor is selected. If D is selected at the Program? prompt, the Drive? prompt returns. If S is selected *LogiCall* (L.BAS) is saved to the current disk. It should exist on all disks. If Q is selected *LogiCall* ceases to run. This would permit you to make changes to *LogiCall* if you wish.

To learn ALL of what *LogiCall* can do, download and read the 11-page *LogiCall* manual. Both the manual and the ensemble can be downloaded from the Slash page available from a link on our web page. You will find that it saves wear and tear on both your fingertips and key caps.

Vintage Computer Festival Midwest (VCFMW)
by John Mark Mobley and Salvador Garcia

The VCFMW was September 9-10, 2017. What follows are some pictures for the event…

Star Trek Tri-Viewer

Star Trek Tri-Viewer viewed from another angle

Virtual Reality for the Commodore 64 (VR64)

3D composite video for VR64

If you install a 5-inch monitor into a virtual reality headset and connect it to a Tandy Color Computer 3 then you too can experiment with virtual reality.

VR64 Demo:
https://www.youtube.com/watch?v=xOUDgZTUXzw

How to build the VR64 headset:
https://www.youtube.com/watch?v=3Rr1DZsJDMQ

We had a good crowd.

Glenside Color Computer Club Picnic
by Bob Swoger

It was a perfect day, Saturday September 16. Food and toys showed up to our annual Glenside picnic. The yellow jackets behaved themselves until Brian Schubring flew his plane. About that time someone took apart one of their nests, only then did people get bitten.

The rules for our picnic are that the club provides ice, drinks, meat and buns; the attendees supply everything else. Just take a gander at the banquet table. We had 18 people show up, members and spouses. The dining room table was "filled-up", more than plenty to go around.

Tony brought his radio-controlled helicopter but he was a victim of bloated batteries. His demo was short but his helicopter did return home.

Tony was our chef today and did a perfect job cooking brats, burgers and chicken.

Brian Schubring brought a radio-controlled airplane. He gave us a great show of his flying abilities in our 32-acre park in our back yard. Unfortunately, he wasn't able to take it home. The look on Kim's face seems to suggest this has happened before.

Brian Goers fooled us. First he said he was coming, and then changed his mind being counted as a no-show. Then he changed his mind again saying he would be bringing "other guests". His "other guests" was long time member Carl Boll.

Carl had suffered a stroke in 2015 and not many knew about it. When he showed up on Facebook the rest of us were clued in. It has been a long road back for him.

Carl Boll's on the lower left above, Bob's at his right.

Annette was our host this year, thanks Annette, Great job! Member Dan Keller said he had such a good time last year that he had to come again this year. What's the draw? Great food and great friends with great stories.

Rich Bair, our new secretary surprised past secretary Bob Swoger with his article in this newsletter. Seems

Rich also got into the U.K.'s Timex/Sinclair before getting into the CoCo. Rich also agreed with me that the Timex/Sinclair had a better BASIC than did the CoCo. Hey, blame Gates!

The computer is an excuse to get together with my friends. Can a computer like the CoCo bring people together? Ya bet your sweet bippy!

Noemi & Salvador Garcia: Everybody loves a picnic!
Salvador is now helping out with the newsletter.
Thank you Salvador!

CoCo Happenings
By Salvador Garcia

This section presents newsworthy items from the CoCo List and the Facebook group that are directly or indirectly related to the CoCo during the last three months. Since this is the first installment, I did not go back the three months.

2017-09-14: Glen Hewlett announces on the Facebook group that he posted a blog article titled "*Optimizing 6809 Assembly Code, Part 1 – Quick and Easy Changes to Speedup Your Code*":

https://tinyurl.com/y9deuax3

2017-09-13: Carlos Camacho shared on the CoCoList the link to his eBay store. He has CoCo stuff on sale from time to time as well as other retro computing equipment. Check it out once in a while to see what is up.

http://www.ebay.com/usr/colorcomputerstore

2017-09-12: Carlos Camacho uploaded an article to the Facebook group from Byte Magazine titled *Toward a Structured 6809 Assembly Language*, parts 1 and 2. For those not on Facebook, links to both issues follow. (Bonus: Vol 12 contains another article related to the CoCo!)

https://archive.org/details/byte-magazine-1981-11
https://archive.org/details/byte-magazine-1981-12

2017-09-09: Milestone for the CoCoTALK! show by Steve S. Happy 25th episode! And may many more come! While others were running for cover due to the impending arrival of hurricane Irma, Steve was at his mic CoCo chatting away. Replay on YouTube:

https://www.youtube.com/watch?v=-2gv7Unfkr4

2017-09-10: Tormod Volden excitedly announced on the CoCoList the release of Toolshed 2.2 and HDB-DOS 1.5. This release was the arduous work and effort of various individuals. Congratulations to all involved!

https://sourceforge.net/projects/toolshed/files/ToolShed/ToolShed%202.2/

2017-09-09 Richard Lorbieski posted a link on the Facebook group to a YouTube video about the CoCo that you can watch here:

https://youtu.be/7t_Zdpf8p_o

2017-09-07: Glen Hewlett happily announced that his PAC MAN game was featured on Hackaday!

https://hackaday.com/2017/09/06/pac-man-on-the-colour-computer-3/

2017-09-01: Regrettable news. Bill Nobel announced on the Facebook group and Rietveld Rietveld on the CoCoList the death of Dale Lear. For those of us that did not know of him, a simple search for his name and "color computer" will yield information about his accomplishments and contributions to the Color Computer community. He was a pillar on which this community is built and we will forever be grateful for the legacy that he left us. If you want to get a peek into who he was, Steve S. interviewed him in April of 2016. Watch it here:

https://www.youtube.com/watch?v=ezkj19_i0B0

2017-08-24: Ed Snider announces on the Facebook group a new RAM cart with a capacity of 16 Megabytes, because he can!

Tandy Assembly
By John Mark Mobley

Tandy Assembly is a new vintage computer event designed specifically for Radio Shack & Tandy branded computers. This includes all TRS-80 and Tandy computers (monochrome and color). The event is to be held on October 7-8, 2017.

Tandy Assembly:
  http://www.tandyassembly.com/index.html

…https://www.youtube.com/watch?v=WjFr342eXbI&t=1s

Model 4

Tandy Luggable Computer

Model 100

This is a doctored image. Blimp rides will not be available.

Calendar of Events
by John Mark Mobley and Salvador Garcia

See our website's Calendar of Events:
http://www.glensideccc.com/calendar/index.shtml

Glenside Color Computer Club, Inc. Business Meetings
Thursdays, October 12 and November 9, 2017
7:30 PM to 9:30 PM Central Time
Schaumburg Public Library
130 South Roselle Road
Schaumburg, IL, USA
Google Hangouts access is available via John Mark Mobley or John Linville.

Saturday and Sunday September 23-24, 2017
Milwaukee Maker Faire
The greatest festival on Earth for makers, creators, builders and imagineers.
Wisconsin State Fair Park
Link: http://milwaukee.makerfaire.com/

Saturday and Sunday, October 7-8, 2017
Tandy Assembly
A TRS-80, Tandy, and Radio Shack computer festival
Christopher Inn and Suites
Chillicothe, Ohio 45601, USA
Link: **http://www.tandyassembly.com/**

Saturday, October 15, 2017
Chicago TI International World's Faire
A Texas Instruments TI-99/4A computer festival
Saturday: 9:30 AM to 5:00 PM
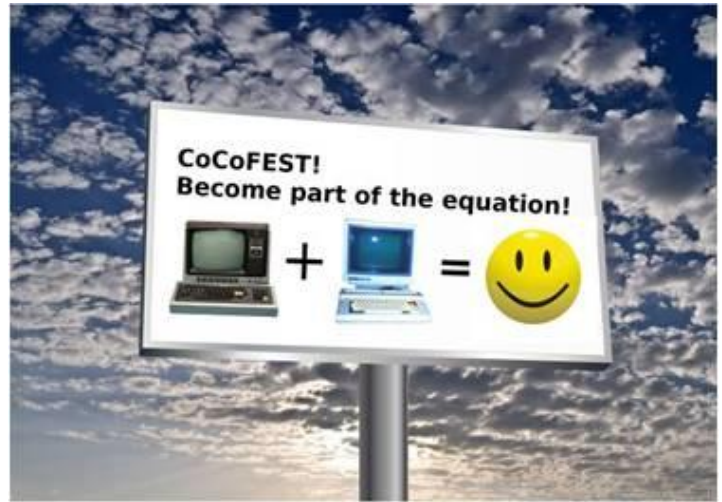Evanston Public Library
Evanston, IL, USA
Link: **https://tinyurl.com/j3bm7vq**

Saturday and Sunday, December 2-3, 2017
World of Commodore
Toronto, Ontario, Canada
Link: **http://www.tpug.ca/**

Here are the 5 "W's"
WHO? 1) Glenside Color Computer Club, Inc.
                    PRESENTS
WHAT? 2) The 27th Annual "Last" Chicago CoCoFEST!
WHEN? 3) April 21 & 22, 2018
            (Sat. 9 am to midnight - 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 2017!)
Overnight room rate:
            $94.00 plus 11% tax ($104.34 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: $15.00 1st - $5.00 2nd & more
Sunday Only: $10.00 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   630-847-7026, VOICE
tonypodraza@gmail.com rswoger@aol.com

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