The NoName Magazine

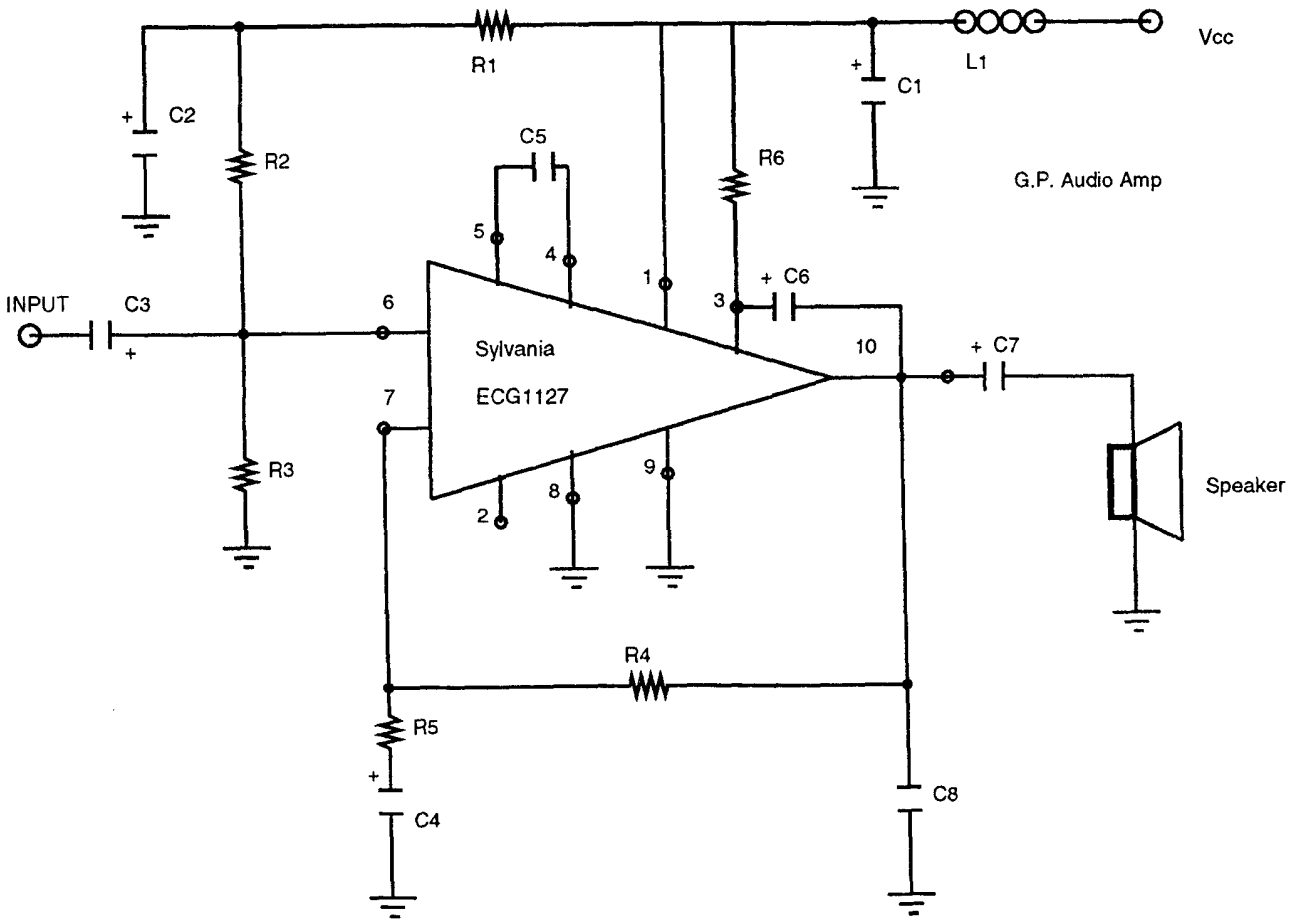
Vol. 1, Nbr 3 | For the CoCo/OS9/OSK Communities | August 1993

Is the OS-9 Users Group Dead?

Reviews: Electronic Schematic Designers

PowerBoost vs. NitrOS9
A Head to Head Comparison

And much more!



August 1993, Vol. 1 Nbr. 3

The NoName Magazine

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This publication is composed, formatted and master pages created, entirely on machines running the OS-9 operating system.

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Features

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On the Front Cover

The schematic drawing featured on this month's cover was created using the **CirCad** electronic design program reviewed later in this issue.

Mail Call!

They Like Last Issue

Thanks again for the free issues. I got the second one yesterday and loved every word of it. Keep up the good work and you will have my check for a subscription.

Mike Hovey

I got my "NoName" issue last Friday. Definitely a nice job on the composition and printing, full 8.5 x 11, and the articles and the letters are well done. Looking forward to the next couple freebies.

Mike Knudsen

I got a glimpse of the second issue of the NoName magazine. Pretty nice! I like the format and the construction of the magazine itself.

Take care.

Boisy Pitre, Des Moines, Iowa

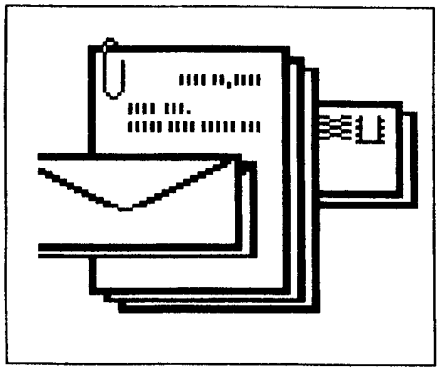
Thanks to everyone for their kind words and support. As we continue to move toward a full subscription publication, we look for your feedback (both good and bad) to let us know where to improve things. Again, thanks!–Barbara

Re your editorial in the June *NoName* magazine.

I agree that people (especially advertising types) get carried away with new technology. A little too much of "WOW, LOOK WHAT WE CAN DO WITH THIS!!!", and not enough "SHOULD WE?".

Several months ago, here in Michigan, the legislature passed a bill restricting junk faxes. While it was waiting for the Governor's signature, the advertising companies tied up his fax machine for about two weeks with messages urging him to veto it.

Another example of people swarming to use new technology without any thought of consequences is the use of portable and cellular phones. Many (maybe even most) people do not seem to realize that they are talking on a RADIO. Any one with a simple and readily available receiver can hear (and record, and report) anything they say. The Prince and Princess of Wales come to mind.



And then there are the people I saw on a recent network news report who were shocked to learn that the boss can read ALL the memos from the office computer network, not just those addressed to him. (He OWNS the computers, you dummies!!).

There are some people so driven that they will probably respond to the signs you mentioned. There was a manager in a local restaurant (a well known national chain) who used to call at any hour for minor things. (I fix commercial refrigeration and air conditioning systems). A leaky drain at 1:00 am. A bad door seal at midnight. They don't call me anymore. They said I charge too much. (I sure did). People like that will probably make a lot of money and have a really expensive funeral.

John R. Wainwright

YES! There IS someone else out there that shares (or seems to) my views on the mobile phone !!

I am one who believes that the majority of phone calls in the home are an invasion of privacy, and much more so with the mobile phones. My pet peeve occurs in traffic. I'm sure we've all seen this type: driving along, always much under the speed limit, and ALWAYS in the left lane, slowing traffic, as this person talks on the phone.

I haven't run across someone using a mobile phone in a public rest room yet, but I'm sure those days are numbered. I have seen them walking around in the malls, most of them with the phone in hand, a few engaged in conversation with someone about something; most of these in the malls are women (I'm NOT being prejudiced - this is an actual observation on my part). Surely whatever they are talking about could have waited until they were home. Or if it was THAT important, there are plenty of pay phones around. Or, is this some sort of new status symbol? If it is, God help us!

I have experienced this sickness in a funeral parlor, though. It was at my father-in-law's wake; there was the usual hushed murmer of low conversation that occurs at this type of gathering. Lo,

and behold!! Some woman's purse began to ring! All conversation ceased - All eyes were on the purse, to see who's it was that would cause such an indignity!

No, I DON'T feel guilty about having a mobile phone. Nothing is so important that it cannot wait for the privacy of the home.

Tom Kowalski, Streamwood, Ill.

Well, there you have it. I rest my case.–Barbara

Heard It Through The Grape Vine

I read you are thinking of starting a new magazine and you have samples available. Would you please send me one? I would be ready to subscribe sight unseen as I am sure you will have something interesting for us CoCo-ers. I have a CoCo 3 (with Deskmate) and don't want to change; my husband has a Tandy laptop HD 1110 and a Compack Contura and hard disk, etc. I find my CoCo faster, easier, and less trouble. I have two drives, 0 and 1, but no hard disk; I prefer the diskettes. Good luck!

Mrs. L. Boult, Ottawa, Ontario, Canada

Thanks for your vote of confidence, Mrs. Boult. It comes as a great comfort to know that we have people like you backing us. We have added your name to our mailing list so you will be receiving our sample issues. We hope you enjoy what you see!–Barbara

Hello! I just heard about your magazine for the CoCo, and I think it's a great idea starting up another magazine after the demise of the Rainbow. It's also unusual to offer free issues! I hope everything works out for you.

I would like to get whatever issues you have printed up so far. I look forward to reading the next generation of reporters for our computer. I have also passed around the address, and hopefully you will get plenty of responses because of my efforts and others....

Andrew Kenny, Cary, Illinois

Thank you for your support, Andrew. We appreciate you taking the time to send your positive comments. Offering free issues may seem unusual at first, but then, once you get to know me and Mark you will realize we usually do what we feel is right. We felt offering free issues was the only fair thing to do considering the past track records of previous magazines. We have added your name to our mailing list and hope you will not be disappointed with our efforts. Many thanks for passing around our address. I'm sure we will benefit from your efforts. If the community is full of people like you we cannot fail!–Barbara

I am a member of the Mid Iowa and Country CoCo, and I noticed in the latest club release that you are starting up a new OS9 magazine. I would be pleased to receive a complimentary copy of this magazine. I also trust you will get a good response to your advertisement and that this venture will turn out to be a great success.

Brian D. Gall, Cooranbong, Australia

Being new to the OS9 community, I must say that I am truly amazed at how nice people are and at the number of positive responses we are getting. While I must admit I was more than a little afraid of participating in this venture with Mark, I have come to realize in just a few short months just how many nice people are out there. Your letter, Brian, is one of many wishing us well. And to do so from Australia! (My son added the stamps to his stamp collection.) Thanks again, Brian, for the time (and money) you took to write to us. We hope we hear from you again in the future and that you enjoy our publication.–Barbara

Our First Mistake

Peripheral Technology has just received the June, 1993, issue of your magazine, and I must protest the inferior coverage of the delmar/Peripheral Technology product booth in the article entitled Chicago CoCoFest. Of the 3 68XXX participants referenced, delmar was the only one to be singled out in a most unflattering manner. Actually, delmar was the only vendor in the entire article that did not receive any positive or promotional commentary except a casual reference to selling a system or two. Frankly, I'm surprised delmar was even mentioned at all. This coverage could hardly be categorized as unbiased.

The article completely failed to mention many facts about the delmar display. For example, Ed Gresick had demonstrations of G Windows running not only on the System IV but also on the NEW 68020-based System V. In addition, Microware's OS-9000 plus G Windows on a state-of-the-art 486 PC system were also available for all to view. Extensive literature, including pricing, was available for all products, both system and board level.

Since the publisher, Mark Griffith, is an avid MM/1 user and developer, the predisposition to devoting a great deal of space to their products is undoubtedly a given. However, it is the responsibility of the magazine to give equal, unbiased coverage to all concerned. Because, regrettably, this is quite unlikely, Peripheral Technology will not be participating in any advertising in your publication.

Carol Pap, Peripheral Technology, Marietta, Georgia

I guess all letters to the editor cannot be friendly,

encouraging ones. The only thing I can say here, Carol, is that Mark and I are new to the magazine business, and, therefore, will make a few mistakes. While I did not attend the Chicago CoCoFest, I'm sure that there were several participants that did not get any coverage at all. Mark had a booth of his own to manage, and his responsibility at the fest was not to interview each participant and include a detailed list of their products in our magazine.

Mr. Gresick did contact us and also expressed his dismay with the coverage given to him. As a result, we are publishing a correction in this issue. Given Mark's long time friendship with Mr. Gresick, you can be assured this oversight was not intentional.

Your comment on being unbiased has been duly noted. I'm not sure, however, that Mark being an avid MM/1 user and developer, automatically makes him biased. We regret this unfortunate incident and will try our best in the future to make sure no one feels slighted.–Barbara

News Clips

Mail Mixup

Chris Hawk of **HawkSOFT** tells me that his post office box has been a mess lately and he was not getting his mail. Chris asks that anyone who has recently sent him mail to re-send it, if possible, to his new address of 244 South randall Rd., Suite 172, Elgin, IL 60123. He's sorry for this inconvenience and hopes everyone understands.

OOPS!!

In the June issue, we published an extensive writeup on the Chicago CoCo Fest. Unfortunately, we neglected to adequately comment on Ed Gresick and his **delmar** company's products. Ed brought several machines with him to the Fest, including a Delmar System IV and V, both running G-Windows demo applications. Ed also had a 80486 66 mhz machine running OS-9000 and the G-Windows environment. Also on display was his super spreadsheet program, **Control-Calc.** This application, while not suited to the home user, allows industrial customers to receive and process data from their production environments directly into the spreadsheet. Ed was very pleased with the interest in his machines and does plan on being at the Atlanta show in October.

Sorry for the oversight, Ed....I hope this makes it up to you!

A Passing

It was with great sorrow that we heard of the death early in July of Brother Jeremy's father. The sense of loss was felt by everyone in the community, and condolences flashed across the electronic mail system to uplift our resident monk. We can only give our own here and add that although he will be missed by friends and family, his mansion in the sky has been prepared. Rest in peace.

Next Issue

The September issue of the *NoName* will be our first telecommunications issue. Lots of good information for avid modemers will be included. See you then!

Mark Griffith

DO OS-9 USERS NEED AN ORGANIZATION?

by Ed Gresick
and
Boisy G. Pitre

Ed Gresick, (age unknown), owner of **delmar co.,** *has been an avid user and advocate for OS-9 since its beginnings. He is sometimes known as OS-9's only Historical Monument. Boisy Pitre, 22, is a software engineer at* **Microware Systems Corporation** *and founding president of the OS-9 Users Group, Inc.*

Ed can be reached at PO Box 78, Middletown, DE 19709 and as edelmar@delphi.com. Boisy can be contacted at PO Box 523, Waukee, IA 50263 and as boisy@delphi.com.

We were asked by the esteemed publisher and editor of this magazine to prepare an article on the OS-9 Users Group, Inc. Here are our views and thoughts.

Readers on the networks (DELPHI in particular) are aware of the recent controversy with respect to an attempt to dismantle the OS-9 Users Group, Inc. As this is being written, several individuals under the leadership of Boisy Pitre and Carl Boll are working to salvage the OS-9 Users Group (UG) and restore it as a viable organization to serve its membership. Whether this effort will be successful remains to be seen, but it is our fervent hope that those working to restore the UG are successful and that an agenda which is beneficial to the membership is presented. A brief examination of the history of the UG (from the perspective of the services offered in the past and why it failed) can help define what we might want from the UG today.

A History Lesson

Prior to OS-9 being made available for the CoCo, there were other computers running OS-9. Users of these OS-9 systems lacked the means of communication we take for granted today. Programs, tips, and other information were passed by letters and disks from one person to another – a hit and miss affair. Programming efforts were often duplicated without the awareness that someone else may have implemented a similar solution in software. It didn't take too long for the OS-9 users to establish an organization for the purpose of collecting these programs, tips and ideas while organizing them into library disks. To keep the membership informed of new submissions and other information of interest, a newletter, the MOTD, was published.

When OS-9 became available for the CoCo, it didn't take long for CoCo OS-9 users to learn about and join the OS-9 Users Group. Existing local CoCo Users Groups expanded to include OS-9, and new groups were formed just for OS-9. Several excellent magazines and newletters were also born. For quite a while each co-existed, mutually benefitting from the others. The local groups offered hands-on, one-on-one help. The magazines had interesting articles, tutorials and oh those ads! The UG continued as the repository and distribution center for public domain software. It was a happy period for all involved, and the number of OS-9 users grew.

Then It Happened

Two events occurred which signaled problems for the UG. One was the cessation of sales and support for the CoCo by Tandy. The second was the availability of low cost modems and the proliferation of BBSs and information services - particularly CIS and DELPHI. The UG library was uploaded to the many BBSs. Various local user groups each had a copy of the library, and new submissions to the UG had fallen off to a dribble. The UG was no longer the primary repository of software. No serious attempts were made by the UG to review what new services its membership required; thus it faded from existence.

An attempt was made in the late 80's to resurrect the UG at the Rainbow Fest in Princeton, New Jersey. The consensus of those at the meeting was that the UG was needed; however, no new objectives were defined. New leaders were selected and all went to work enthusiasticly - doing the same as before. This time, the OS-9 Users Group lasted only a few years.

Then in early 1991 a group of OS-9 users banded their resources together to form a new incarnation of the UG. It was a success which lasted for the better

part of a year. When it became necessary for the leadership to step down, chaos ensued into the tumultuous situation we experienced a few short weeks ago.

What can the OS-9 Users Group do to best serve its membership? We think the key phrase is 'an agenda beneficial to the membership which can be best performed by the OS-9 Users Group' in the beginning of this article. Our thoughts run in the following direction. Most of these ideas are not original; rather, they originated from other people.

- Most importantly, the OS-9 Users Group should spearhead its efforts to promote OS-9 to the outside world.
- The leaders should prepare and implement a program to attract the non-hobbyists (i.e., industrial and commercial users).
- The UG can become a central source for names of individuals, consultants, companies, clubs and others willing and able to assist new users to OS-9.
- The UG should be the US/Canadian (perhaps North American) representative to the world-wide OS-9 consortium. Activities should be coordinated with them.
- A list of all known software available for OS-9 should be compiled and kept current. This list should include commercial and public domain software and where they may be obtained.
- We should continue as a repository and distribution center for PD software and coordinate this effort with other organizations such as the OCN and EFFO.
- Tutorials for persons wishing to learn and use OS-9 should be prepared or obtained. In addition, the UG should investigate the feasibility of preparing a tutorial running a pseudo form of OS-9 under MS-DOS or possibly via a BBS.
- The UG leadership should make it a priority to persuade OS-9 companies and business to invest in a corporate membership. Money from these corporate memberships could be used to fund a multitude of projects including annual meetings, scholarships for students who are members, promotionals, and advertising.
- The UG should sponsor regional and national OS-9 conferences. The primary purpose would be presentation of papers regarding OS-9 and its applications. A report of these proceedings should be published. Classes to teach various phases of OS-9 (but not programming) at the conferences should be included (not to be confused with the classes already run by Microware.) The conference should include an exhibitor's area, but this should not be the primary purpose of the conference.
- Establish a working group which will be charged with the responsibility of supporting OS-9/6809. Negotiate a contract with Microware and Tandy to transfer source code, rights and support to the UG.

Admittedly, this is a rather ambitious agenda and cannot be done in one step. It will take a great deal of effort and commitment on the part of various individuals. It might also be worthwhile investigating the feasibility of employing a paid 'executive director' to carry forth the objectives. Initially, this individual could be employed on a part-time basis.

In Conclusion

You may have other, better and/or differing ideas. Perhaps you feel none are worthwhile and there is no need for a OS-9 Users Group. Please make your ideas and views known. A membership meeting is planned for October 2nd, 1993 at 6:00pm at the Atlanta CoCoFest. If possible, please attend, or, you may contact the authors to express your views.

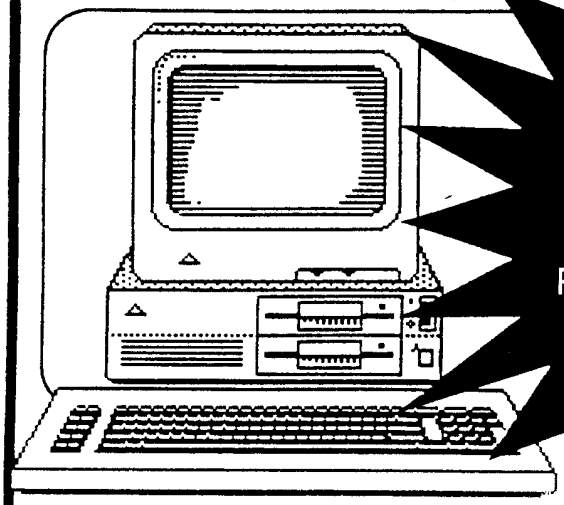
Editor's Note: The publisher's commentary on the recent events surrounding the near collapse of the OS-9 User's Group is provided below.

From The Jargon File

Hanlon's Razor: *prov.* A corollary of *Finagle's Law*, similar to *Occam's Razor*, that reads "Never attribute to malice that which can be adequately explained by stupidity." The derivation of the common title Hanlon's Razor is unknown; a similar epigram has been attributed to William James. Quoted here because it seems to be a particular favorite of hackers, often showing up in *fortune cookie* files and the login banners of BBS systems and commercial networks. This probably reflects the hacker's daily experience of environments created by well-intentioned but short-sighted people.

COCO FRIENDS DISK MAGAZINE

"The most exciting new product for the CoCo Since....?"



COCO FRIENDS DISK MAGAZINE (CFDM) is devoted exclusively to those who still enjoy running under RS Dos. The standard system needed to use CFDM is CoCo 3, RGB monitor, at least one disk drive, and the RS Dos which came with your CoCo 3.

CFDM is a monthly disk based publication which is produced on a "flippie" disk. When you "Run" the "magazine" side of CFDM, you'll be greeted with a beautiful cover picture by CoCo Friend James Gibbons. Pressing any key takes you to the magazine's colorful Main Menu. There you'll find 14 sections which are filled with entries. Sections included are: About CFDM; About this Issue; Active CoCo; Advertisements; CoCo Friends Art Gallery; Articles of the Month; Family Tree; Forum; From the Editor; Letters to the Editor; Potpourri; Programs of the Month; Reviews; and Question & Answers.

Next you will enter a Section and find a number of entries written by our CoCo Friends from all over the world. Each issue of CFDM contains from 60 to 80 entries. Some sections contain documentation about the many programs and graphics found on the "flip-side" of CFDM.

The "flip-side" or "program" side of CFDM is filled with contributions of wonderful programs and graphics from our many CoCo Friends! Each issue has from 2 to 4 hi-res pics and from 8 to 15 never-before-seen programs.

8 to 15 never-before-seen programs

The cost of CFDM is $6 per issue or $30 for a 6 issue subscription. Join us now for a lot of fun! If you're like me, there's never too many Friends around to enjoy a great time on the CoCo.

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Review: Circuits... Circuits... Circuits...

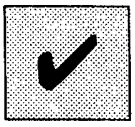
A review of two electronic schematic designing packages

by Paul Fitch

Paul M. Fitch Jr., 29, is a recent graduate of The University of Central Florida's Electrical Engineering College. Paul is currently searching for work, while expanding his programming knowledge on an MM/1 OSK machine. He can be reached as **emto@delphi.com.**

Editor's Note: Beginning with this issue, a new feature for product reviews will be used. Notice the large check mark at the base of this column. This means the product(s) reviewed here are recommended for purchase.

If a large 'X' shows up instead, the reviewer recommends you avoid the product(s).



This is a dual review of two circuit design packages, one for KWindows and OS9-68000, the other for Disk Extended Color Basic on the Coco III. While neither program competes with the other, both do essentially the same thing, and I got to play with both of them.

Every person has a subconscious set of 'must haves' for a given program. I'm no different. Here is my list of what sorts of things I look for in software I'm buying.

- Ease of use 'out of the box', i.e., can I get it to run without constantly looking at the documentation?
- Is there a CLEAR set of installation instructions?
- Can I set it up without reconfiguring my hard drive? What happens if I don't have a /dd/etc/usr/lib/srcs directory?
- If I have to change my directory structure, do I have some choices left to me, or is the installation process carved in stone?
- When I finally decide to look at the Documentation, is it clearly laid out? Indexed? Grouped by Menu, function, etc.
- Is the software 'nice' to my computer?
- Does it cleanup after itself on exit?
- Does it 'hog' the system, not letting other processes get anything done?
- Finally, does it actually do what it's supposed to do?

Given all this, here are my comments concerning the two packages I reviewed.

CirCad

The First CAD (computer aided design) program available for K-Windows has finally arrived. I was climbing the walls waiting for it to appear in my mailbox, but it was well worth it.

The copy I received was a pre-release version, archived with LHA. The archived files weren't to much of a hassle to set up and included several directories under /dd/LIB, and the executable *CirCad*.

The documentation is laid out in a nice, easy to follow format, complete with high quality diagrams. There isn't an Index, but at 10 pages, it wasn't really necessary. Each menu and function is covered in a short concise manner. Nothing is left out. There weren't any installation instructions, but again, these were not needed. I imagine that on the release versions everything will be setup and you'll just *dsave* it to your hard drive.

CirCad requires at least 1 Meg of memory to run. A hard disk drive is not necessary, but users would benefit from it once they begin storing all their schematic drawings.

CirCad has no command line options, except a simple '-?', which gives a two line explanation of what the program is. On startup, you are faced with a Multi-Vue style screen, containing a scaled grid. The menu selections include **Files, Edit, Draw/Element, Symbol, Terminals, Options,** and **Page-Control.**

From the **Files** menus, you have the standard NEW, OPEN, SAVE, SAVE AS.., and CHD selections plus a buffer load and save selection. These last two will become very important, as explained shortly.

Edit allows you to REDRAW the screen, CUT, COPY, PASTE items, and CLEAR. There is also a

DONE selection which lets the program know you are really done editing, so it can cleanup its storage areas.

To actually put things on the screen, you have three menus full of stuff. The **Draw/Element** menu gives you a nice selection of lines, boxes, circles and curves to use, as well as a text selection for labeling your drawing. The **Symbols** menu gives you a varied selection of primitive and not so primitive electrical/electronic elements. These include an arrow, diode, and resistor. The **Terminals** menu has four different terminal designs, in both large and small versions.

The **Options** menu allows you to specify groups of elements to be treated as one item, to select which font is used by your Postscript printer, and to turn line snapping on/off. More on this last item in a moment.

The **Page Control** menu allows you to specify how your drawing is going to be processed by the printer. The Postscript language has commands to specify top half or bottom half of page, as well as full page. There are more choices, but you get the picture.

Now, what do I like about the package, and what's neat? The snap on/off function is a life saver. It makes the individual elements of the drawing 'snap' towards the nearest grid line, keeping everything arrow straight.

The GROUP start/end functions allow you to build a circuit element out of up to 100 other elements. These can include other groups. Therefore, you could design a standard power supply (complete with text labels), and place the whole thing as easily as you would place a resistor. The BFLOAD and BFSAVE functions are used to store and retrieve these groups, one at a time.

Element placement is simplicity itself. You select an element, and hit the mouse button to 'nail' one end down. Then you move the mouse pointer to where you would like to end, and hit the mouse again. The basic elements are scaled, based on how far you moved the pointer. Groups are NOT scaled, and can only be placed in the same orientation they were drawn in originally.

The **Draw/Elements** Menu has three really nice line functions included. The curve function accepts a start and end place, plus two middle points to produce the curve. You can use this to produce rounded edges or sine waves for your AC power supplies. The VSJoin function will connect two lines (one verticle) with a 90 deg angle between them. The VCJoin will connect the same lines with a curved corner.

"On a scale of 1 to 10, CirCad rates a solid 8"

When your drawing is complete, selecting SAVE will produce two files. The first is a *CirCad* image file, for reloading and editing at a later date. The second is the Postscript file you send to your printer to accurately reproduce your drawing.

This package is a Drawing aid only. It doesn't supply a simulation mode, nor was it expected to. That would be nice for an upgrade though.

Now the hard part. This is where I have to point out the short comings of *CirCad*. The basic units of electrical design are the resistor, the capacitor, the inductor, the transistor, and the op-amp. With these five items, you can design anything at all. Now the op-amp is really a collection of elements (or for *CirCad*, a GROUP), but it is such a useful collection that it can be considered a basic element in its own right.

Of the basics, the **Symbols** menu gives you ONLY the resistor. The instructions say to use the NOSW (normally open switch) element for a capacitor. It does quite nicely, but I would still like to see 'capacitor' spelled out for when I get stupid around 1 am. The NPN and PNP transistors are available, but you have to get them using the BFLOAD function. Again, this is a basic building block, and should be on the Symbols menu. The inductor is missing, but you do get a Horizontal/Vertical Coil element that can fit the bill, found using BFLOAD. The op-amp isn't there at all.

To be fair, the **Symbols** menu does contain several items I'm glad to see, such as the full wave rectifier, the transformer, the diode and the IC DIP element. However, at the expense of the more basic items.

Now that I'm done making myself feel like a rat, here's my wish list for future versions of *CirCad:*

1. I would like to see a richer library of grouped items. The ones included are great for a start, but limited. However, these take a lot of work to produce, so perhaps a call in the documentation for users to provide their creations to others via BBSs and/or the author.

2. I would like to see a version of *CirCad* that does electrical/signal simulation. That sort of thing isn't fast or simple though, and could easily quadruple the size of the program.

3. I would like to see 'regular' printer support. Postscript produces great output, but it is a memory hog, and isn't too fast on 68000 series processors either. Remember, Postscript ready printers are not exactly common in the home user market.

On a Scale of 1 (lowest) to 10 (highest), I'd have to say that CirCad is a solid (8). The program is presently just under 130k in length. There is LOTS of room for more goodies in there, and this program can only go from great to WONDERFUL. I found using it a joy, and recommend it to all of the hardware oriented people in the OS-9 community. *CirCad* is available from the **Dirt Cheap Computer Stuff Co.**, 1368 Old Hwy 50 East, Union, MO 63084, (314) 583-1168. Rush out and buy your copy today, I need more 'grouped' elements!.

Colour Schematic Designer 3.0

When I heard that someone had actually produced a CAD program for the COCO, under Disk Basic no less, I was surprised and envious. I'd been wanting something like that for my OS9 COCO system for sometime. When I was asked to review that same program, I thought GREAT! This program is one of the most ambitious I've ever seen.

The instructions for the program take up 20 pages of easily read text. The table of contents is broken down by section, with the functions available listed, but no page numbers. For a document this size that's not a problem. The first section covers getting the program up and running, along with a list of changes and incompatibilities between version 3.0 and version 2.0.

The second section deals with the designer program itself. It describes the different functions available for the screen and device layout. Section 3 covers File I/O, editing and installation of new symbols, and postscript support. Section 4 covers the nodelist generator (more on this in a moment). Section 5 describes the memory utilization and file format of the program and its symbol files. It also describes each of the included files on the master disk.

The program gives you 43 predefined symbols (out of a total of 64 at once). Symbol selection is via the arrow keys on the Coco 3 keyboard. For adding symbols, you are given a symbol editor. By renaming different symbol files, you can have as many different sets of symbols as you want. Sixty-four is your limit for one drawing however.

The Drawing is divided into 7 zones with each zone taking up the full screen, and progressing downwards in the Y direction. You can select which zone you want to use from the **MODE** menu. Fractional zones are allowed, but the docs say that will slow things down. Once you have selected a symbol from the **SYMBOL** menu, it is placed on your joystick cursor, and you can move about the screen. To place it on the screen, simply hit ENTER. It stays as your selected symbol until you choose another option. Symbols can be rotated 90 degrees at a time, deleted, copied and pasted.

For connecting the symbols together, the **LINE** menu gives you several choices. Normal solid lines, dotted lines, a box function, and a vertical/horizontal lock function that keeps the lines nice and straight. You are also given a **LINK** function which will make your lines hook up to the symbol's ports. Each symbol has at least one input and one output port. They can have several of each. The line will link to the closest port.

Once your drawing is complete, the **FILES** menu gives you plenty of selections. From here you can save your file, load a new one, clear out your drawing buffer, set the printer's baud rate, print your file, or generate a nodelist from your drawing. The print selection will send your file to a standard Epson or DMP printer. You have several options here as well. You can select normal printing, high resolution printing, etc.

From the **FILES** menu, you have one more selection, **OPTIONS.** This menu will allow you to edit your symbol library, setup your Postscript fonts, and output a postscript compatible file to disk. If you have one handy, you can send the file straight to your Postscript printer too.

There are two things I really like about this program. First, it supports standard printers out of the box. It doesn't need extra support software or high priced printers to provide you with readable schematics. The second thing I like is the nodelist generator. A nodelist is a numeric representation of a schematic. It is used by electronics simulation software, to give you an idea of how your design will actually operate when you get around to building it. These days, projects can become so large, that many companies spend 80% of their research and development time running simulations alone. That's before a single dime has been spent on hardware of any sort. Perhaps we will soon be seeing some software that can use the nodelist that this program gives you. Right now, there is nothing that I am aware of that can use the nodelist.

The one thing I didn't like was the documentation. It contains almost everything you need to know to use the program, but it felt like the programmer himself wrote it. While reading, I got the feeling that whole chapters had been skipped over. The section on the nodelist

generator was almost useless. It glossed over what a nodelist was, didn't tell you how to answer the prompts, and didn't explain why the user should even bother with a nodelist in the first place. Programmers should never write their own documentation. They are to close to the problem. Things that may seem obvious to them can be a mystery to the rest of us.

On a scale of 1 to 10, I'd rate this an 8. It would be a 10, except for the documentation. This program is very usable, and fairly robust. I haven't used DECB on a regular basis in 5 years, but still couldn't get it to trash my drawing. Considering that this program is actually nine individual programs using shared data, I think the programmers should get a big round of applause. *Colour Schematic Designer* is available from **Radical Electronics Inc.**, P.O. Box 1350, Saskatoon, SK, Canada, S7K 3N9, 306-664-8724.

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PowerBoost vs. NitrOS9 (Round 1)

Comparing the two Hitachi 6309 upgrades

by Alan DeKok

Alan DeKok, 24, is active on the Internet and FIDO echoes, and in OS-9 programming. He is currently working on a Masters of Science degree in particle physics. Best known for his "CC3DEMO.BIN" program, Alan is also working on an OS-9 game using a sprite library he has written. When not programming, Alan enjoys hacking the OS-9 kernal, bicycling, driving a tractor, and lazing about the house.

In the spring of 1992 some people were discussing the 6809 in one of the newsgroups on the Internet computer network. A 6809 clone by Hitachi was mentioned, and it was noted that this chip responded differently than the 6809 to illegal instructions. Hirotsugu Kakagawa posted a message from Japan with information from an old issue of a Japanese magazine called *Oh!FM*. This message turned out to be the first definitive 6309 reference that many North American people had seen. It detailed the many new features of the 6309, including new instructions, registers, and addressing modes. It also included descriptions of a **native mode,** where many instructions took less time to execute than in normal 6809 **emulation mode.**

The native mode, however, could not be accessed simply from OS-9, as it modified the positions of registers in the stack frame after an interrupt. Since all OS-9 system calls are through interrupts, the system had to be patched in order for the native mode to be usable. This article is the first of a series that will review and describe patches to OS-9 to allow it to use the new features of the 6309.

The first 6309 specific product on the market was the **PowerBoost** package from *Burke & Burke*, and soon after *Gale Force Enterprises* announced **NitrOS9.** With the release of **PowerBoost** version two, both products allowed OS-9 to run in native mode at unprecedented speeds. Switching to native mode allows OS-9 to run 10 to 20 percent faster. By rewriting old 6809 code to use the faster 6309 equivalents, OS-9 can be sped up even more.

PowerBoost and **NitrOS9** employ very different methods to get OS-9 to run in native mode. **PowerBoost** patches the kernel minimally to hide the changed stack from programs, and uses new instructions in time critical areas to speed up the system. **NitrOS9** on the other hand, is an attempt to rewrite every OS-9 system module to directly use the native mode stack frame, and to enhance as many as possible with the new instructions.

The two products have resulted in the CoCo community being divided into camps supporting one product or the other, resulted in sometimes bitter arguments about the two. This article and the ones following it are an attempt to clear up some misconceptions about **PowerBoost** and **NitrOS9,** by providing in depth comparisons of them. The tests performed will provide an objective set of measurements to compare the two products to each other, along with 'stock', or Tandy OS-9.

Tandy	PowerBoost	NitrOS9	Screen Type
41	36	28	80 x 24 text
96	75	52	80 x 24 2-color graphics
258	205	169	80 x 24 16-color graphics

Table 1
Timing test results for the three systems

The systems used for these tests were a floppy system, with 3.5 inch drives, an RS232 pak on a y-cable, and an Eliminator system with a 20 meg hard drive. All of the times given are in seconds.

The first test that was performed was a LIST of a 23.5k text file off of an internal ramdisk to screens of various types. On average, **PowerBoost** was 20% faster than a stock system, and **NitrOS9** 37% faster. The speed difference between the two indicates the fact that **NitrOS9** optimizes GRFDRV extensively. So simply switching to native mode results in an immediate twenty percent speed increase! No wonder everyone has been talking about the 6309!

Next month we'll look at the two systems in depth, and give the results of many more tests. See you next month!

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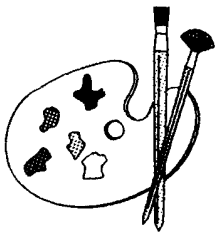
The Art of Programming

Part II

Design Flowcharting

by Shaun Marolf

Shaun Marolf, 30, is a member of the US Navy stationed at Naval Air Station San Diego where he is currently working on his degree in Computer Sciences. He first learned programming in 1979 on an Apple II Plus and is also schooled in electronics and digital circuits. Shaun runs the "Eight Bit Heaven" BBS (619-447-2111) and owns several computers, including an original grey case CoCo 1.



(Editor's note: Part I of this series was erroneously attributed to "Art" Marolf. Our sincere apologies to Shaun for this mistake.)

In part one we discussed the factors of designing the program, the give and take of factors in the program design. Once we have determined those items we wish to enhance upon and those we are willing to sacrifice, we are ready for the next step: flowcharting the program operations. This is not flowcharting as you may have been taught before.

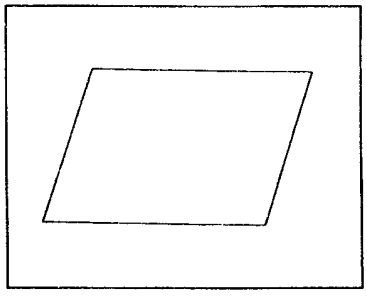
Design flowcharting is, simply put, designing what the end user will see and use within the operation of the program. Why do you want to flowchart this? Simply to keep us on track of how we want the finished product to look or operate. By having a ready reference, we actually find that it will be easier to flowchart the operations. We will also want to have diagrams for the screen. This shows us what the screen will look like. Please note that text screens and graphic screens are very much different in their applications, and you will have to use the appropriate screen map. A text map uses character positions for the screen size and shows the location points of the standard character generator.

Graphic maps work in pixels (or points). Each pixel is a small dot on the screen. The more pixels, the higher the resolution of the monitor. Characters generated on a graphic screen are drawn onto the screen and not placed. Because of this, we need to use a graphic screen map whenever we use a graphic screen. Today, most software applications are done on graphic screens and require more memory. However, they have advantages over text screens, which is not to say that text screens do not have an advantage over graphic screens. You, the programmer, must decide which is best for your program.

After we have determined the screen type and drawn our diagrams, we are ready to begin flowcharting the design. In the design we can set up our error traps and operator options and what will happen at each response or prompt. This shows where the program will go with each response. What we're actually doing is mapping out the program operations, though not the functions. Knowing where the program is going and what it should do gives us a fair advantage in keeping track of what the program is actually doing and will help us in debugging it later.

As you may have guessed, this flowchart will not look like the program flowchart. In this flowchart we are concerned with Input Output (I/O) and logic of program flow. If this is met then ... In other words, we concern ourselves with what the operator sees and does and what happens when he does it. With that in mind we're ready to begin.

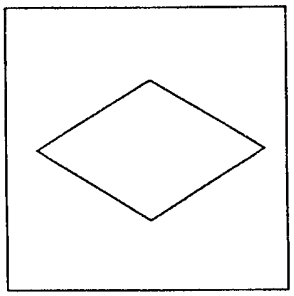
There are four symbols we need to become familiar with; the **I/O symbol, Decision symbol, Connector symbol,** and the **Off Page Connector symbol.** Okay, description time. This is where I push getting a flowchart template. A template will actually help in doing the flowchart as it will give the correctly preportioned symbology sizes and speed up your drafting of the flowchart.



The I/O Symbol

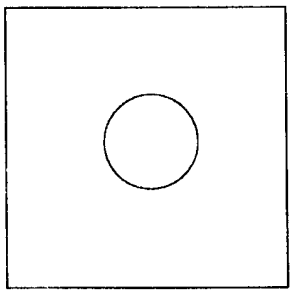
The I/O symbol annotates the input and output flow of the

computer to the outside world. We use this symbol to show what the computer sends to the user and what the user sends to the computer.



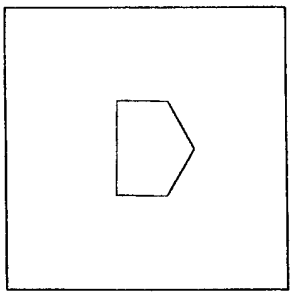
The Decision Symbol

The Decision symbol is used to annotate the matching of a condition. If the condition is matched, the symbol sends the flow to a particular area. If the condition is not matched, it goes to another.



The Connector Symbol

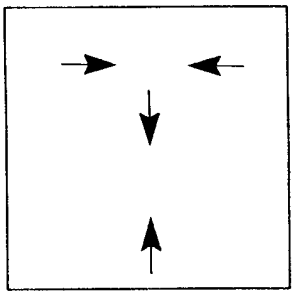
The Connector symbol is used to indicate flow paths to another part of the page and saves drawing lines all over the paper.



The Off Page Connector Symbol

The Off Page Connector symbol is used to indicate flow to another page.

There is another symbol we may or may not use called a flow indicator. In flowcharting top to bottom and left to right are standard flows. If at any time we send a flow up or to the left, we may want to use this symbol. It's simply a small arrow on the flow line indicating its direction.



Flow Arrows

We start by indicating the initial output of the computer. If you used the screen maps, label them and use the label markings in the symbol. Mark the symbol with PRINT or OUTPUT to indicate the function. Next, we'll need the user input to go on so mark the next I/O symbol as INPUT and then use whatever field type you're looking for, such as name or menu choice.

At this point the computer may or may not have to make a decision. For simplicity we'll say that it does. If you use a menu in your program, the user will have several choices to make, and the computer must match the user's choice with those listed. Since each choice leads to another option available to the user, look at each condition separately.

If the user has nine choices labeled A-I, look to see if the user has inputed any of the correct choices. We notate inside the symbol the following condition: "does user input=A"? If the answer is yes, go to the indicated option. If the answer is no, go to the next decision which would be: "does user input=B"?, and so on. We do this until there is a match in the condition or until all variables have been unsuccessfully matched, at which point we can send an output telling the user of the error or simply refresh the menu screen and start anew.

The Connector symbols are self explanitory. The only thing you need for them is to use a symbol, letter, or number to match the symbol that they go to. If you use an Off Page Connector and label "1," ensure that the Connector you are going to is also labeled "1." Note that in some cases the Connector may have more than one source of flow input. This is fine, so long as the indicator is marked with each one.

This is pretty much all you need to know to design flowcharting. Draft a simple program design for future use. Part three will go into in-depth flowcharting techniques. The next step is program flowcharting, where we'll learn how to flowchart the actual program operations so we can code (or write) the program with considerably less bugs.

Shaun Marolf's series will continue for the next few months. Once it is finished, we'll need something else to take its place. We at "The Noname" encourage anyone who has an article, or just an idea for an article, to contact us. Get yourself in print. Submit!

The 10 Commandments for Technicians

I — *Beware the lightning that lurketh in the undischarged capacitor, lest it cause thee to bounce upon thy buttocks in a most un-technicianlike manner.*

II — *Cause thou the switch that supplieth large quantities of juice to be opened and thus tagged, that thy days in this Earthly vale of tears be long.*

III — *Prove to thyself that all circuits that radiateth and upon which thou toil are grounded and thusly tagged lest they lift thee unto radio heaven.*

IV — *Tarry thou not amongst those fools that engageth in intentional shocks, for they a surely non-believers and are not long for this world.*

V — *Take care that thou useth the proper method when thou taketh the measure of a high voltage circuit, lest thou incinerate both thyself and thy meter.*

VI — *Take care thou tampereth not with interlocks and safety devices, for this incurreth the wrath of thy supervisor and bringeth the fury of the safety inspector upon thy head and about thy shoulders.*

VII — *Toil not thou on energized equipment, for if thou so doest, thy fellow workers will surely buy beers for thy widow and console her otherwise.*

VIII — *Service thou equipment not alone, for electrical cooking is a slothful process and thou might sizzle in thine own juices for hours upon a hot circuit before thy maker sees fit to end thy misery.*

IX — *Trifle thou not with radioactive tubes and substances lest thou commenceth to glow in the dark liketh a lightning bug and thy wife will hath no further use for thee except for thy wages.*

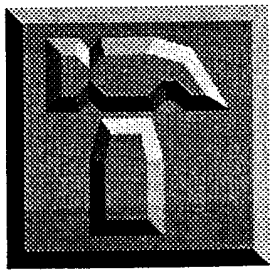
X — *Causeth thou to be tagged all modifications made by thee upon equipment lest thy successor teareth out his hair and goeth slowly mad in his attempt to decide what manner of creature madeth a nest in the wiring of such equipment.*

Hardware Hacking

Fixing A Flaky CoCo3

by Robert Gault

Robert Gault is a member of the Color Computer Owners Group of Detroit, Michigan.



Now that there is no longer a source for new CoCo units and perhaps even CoCo repair, it will be very important for CoCo users to be able to fix their own computers whenever possible. This means, if you love your CoCo, you had better learn how to read circuit diagrams, use simple test equipment, and solder. It will also be very important that CoCoists report to the CoCo community examples of perplexing problems and the solutions; one of mine follows.

A CoCo3 system consisting of a Multi-pak Interface, Disto SCII controller, Kenton hard drive controller, and RS-232 pak became increasingly unrealiable. The symptoms, which were never constant, included freeze up during modem use, hard drive I/O errors (unit not ready), intermittent floppy drive motor non-response to commands, loss of disk ROM on cold start reboot (Extended Basic message), and periodic loss of everything after seeing the terrible trio graphic.

My initial thought was that some of my mods to the SCII had bad connections (I had added wire-wrap connected switches), but this proved not to be the case. Removal, independantly, of the hard drive controller or RS-232 pak from the MPI changed symptoms but did not remove all problems. Removal of the MPI seemed to prevent the appearance of problems but did not always correct them if they had already developed.

If you have never done trouble shooting of any equipment or software, let me assure you that the above is the technician's worst nightmare, an intermittent. The problem condition does not remain in effect long enough to find a source with test equipment.

The first clue to the answer was found while I was using EDTASM in the ZEBUG mode. All of the hard drive I/O bytes read $FF during drive malfunction. Since I had more or less (but not rigorously) eliminated the Kenton controller from consideration, I started thinking that the MPI slot selection (or at least access) was failing.

I had no information on the MPI circuit so I called the nearest CoCo BBS and asked for help. Within a few days I had info on the functions of the MPI integrated circuits, history of some common repair problems, and a suggestion to check for failure of the power supply electrolytic capacitors.

The last suggestion, while not the answer, proved to be the key to the problem. Before testing the capacitors, I put a scope on the 5 volt supply line and turned the system on. At first the 5v supply was great; 5.03 volts DC with about .02v AC. Just as I was thinking, "There can't be anything wrong with the power!?", the supply dropped to 2.3v.

Now I knew what was happening; the MPI 5v supply was intermittent. Every time the voltage dropped, all devices plugged into the MPI went nuts! However, was the CoCo3 supply involved or was it only the MPI?

I unplugged the MPI, installed all three paks, and turned it on. After several minutes the 5v supply began dropping out, but now it was dropping to 0v DC not 2.3v.

It seems that the CoCo and MPI 5v supplies are not isolated from each other. When the MPI failed, the CoCo tried to pick up the slack. Eventually the CoCo went into either thernal or current overload and shut down. This was the condition that caused total failure immediately after the terrible trio graphic. The random flakey conditions occured after MPI shutdown but before CoCo shutdown.

Well, how to fix it? The MPI power supply active components are a 723 voltage regulator, a

2N6594 PNP power pass transistor, and an MPSW01 driver transistor. The supply is rated at 5.0v 1.3 amp DC.

The voltage regulator IC is common but the transistors no longer are. Should I try a repair or scrap the parts for a 7805 5v 1.5 amp three terminal regulator?

In cases like this, I try to be sure a part is bad before going to much effort for an identical or equivalent part. Inspection of the MPI circuit board showed no bad soldering or traces, no burn marks, no visual indication of any kind for failure. I did notice that tapping the power transistor with a screw driver handle seemed sometimes to initiate power loss.

The power transistor is mounted on the board on top a heat sink with two large screws, lock washers, and nuts. To test the transistor I intended to remove it from the board, so removed the nut/lock washer assemblies. Here was where experience and inspiration took over with, if not a blinding flash, at least an, Aha!

One of the three leads of the power transistor is actually the case. The surface of the case beneath the lock washers did not look quite normal for either color or luster. Could all the above trouble have been caused just by an oxidized connection?!

De-ox solution was swabbed over the case/screw/nut parts, the nuts retightened, and the voltage monitored. Now there was stable voltage; could it be this easy?! After several weeks of use, there has not been any reoccurance of the above problems.

Those readers still using (or trying to use) a CoCo1 should note that your unit has an almost identical power supply to the MPI. A little de-ox compound and socket wrench might be in order. And please don't forget your local CoCo BBS. It can be a great source of help.

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