

MOTD

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The International Newsletter of the OS-9 Users Group **MAY/JUNE 1988****OS-9****President's Column***by Dave Kaleita*

I don't really have any pressing new business or important announcements to make this month, so I'm just going to fill this space with my ramblings about a number of unrelated tidbits of interest.

Chicago RainbowFest a Success!

Once again this year, The OS-9 Users Group had a booth at the Chicago RainbowFest in late May. And like last year, because the UG did not pay the travel, meal or accommodation expenses of the people who manned the booth, membership dues collected far surpassed the expenses connected with having the booth (namely, the cost of tee shirts sold and the cost of the booth itself). Specifically, we signed up 37 new members, renewed 11 current members, reinstated 5 prior members, and sold nearly 50 tee shirts. Making a quick estimate of the expenses of myself and Carl Kreider at the RainbowFest indicates that, if the UG were paying to send us, it would have been a loser. For this reason, it appears that it would by far be in the best interest of the UG to recruit volunteer members who plan on attending these shows anyway to operate the UG booth for us. The only real perks for doing so would be free admission and a place to sit during the show, but judging by the large number of people who came over to the UG booth volunteering to help out, I don't expect any problems finding volunteers in the future. The next show we are considering having a booth at is the Princeton RainbowFest later this year. If anyone knows of any other shows or conventions which are attended by large numbers of OS-9 users, please let us know!

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EXTENDED LIBRARY CATALOG**THIS ISSUE!**

Dave Kaleita is changing employers. & His new CIS PIN is: 72657,2275

MW seems to think that we are not interested in windows, (InVision), for the ST. If you are, write or call them!

Bank changeover remains a problem, we have temporarily suspended acceptance of MC and VISA. Sorry- please bear with us.

From The Editor

Things are quite busy here. New OS-9 software and hardware is forthcoming at a fantastic rate, so fast that I can't keep up. There are no less than five new OS-9 software vendors, and many new hardware products from both old and new vendors. I still need help in reviewing software products. Many of you who wrote to me in the past did not include a complete software list or telephone number. I need to know both in order to prevent sending you a piece of software or hardware that you already have. I need a phone number because it takes too long via the mail to find out if you are willing to review a particular piece. If you have already written, please don't hesitate to do so a second time.

I've talked to Chris Fox, (Foxware), and he is sending his CCENV for review, as well as his function libraries. (see OS9Boots).

Another OS9Boot is Glen Clark, (Easy Street Data Systems), who is sending us the Focus Applications Hub along with some business applications including 'Correspondence Module' and 'General Ledger'. Glen has a rather unique philosophy of including source code with this already attractively priced software.

Gil Shattuck (Granite Computer Systems in New Hampshire.. where else with that name), has also joined the ranks of the boots with his MS-DOS transfer programs. He is sending both CoCo and Gimix-020/ OSK versions for us to review. (sdisk required). He also has a Multi-View version in the works.

You may notice that this issue is somewhat late in arriving. Not to worry, because we are about to go on summer break. The next issue will be Sept/Oct and will be available in time for the Princeton 'Fest.

Continued Page 8**Continued Page 3**

LETTERS

19-JUN-1988 09:43:29

NEWMAIL

From: BOS1B::INET14

To: OS9UGED

Subj: MOTD submission

Hi, Bill Brady,

Congrats on Mar/Apr MOTD. It creates the excitement of the early Rainbows. Here's some northern input for MOTD, the headings make some suggestions for use, but that's your prerogative.

NEW PRODUCTS:

CadCam exhibit June 17-Toronto. I witnessed an impressive, very impressive, Atari Mega Cad demonstration, the software package was DynaCADD by Ditek International, release date is June 27. This was 2D and true 3D Cad with very friendly GEM interface. Just too many capabilities to list here, but the Toronto Atari Dealer is offering an Atari Package mega2, Laser Printer, Roland plotter, 20meg Harddisk, digitizer and DynaCADD for 5000 to 7000 Cdn. The DynaCADD people offer open architecture, and are developing compatible surface and solid modelling modules.

I was surprised that the Microware software catalogue contained no CAD packages at all, for any machine! Maybe the OS9UG could obtain additional revenues by publishing their own source book, with listings being suggested by members, such as above.

STUPID QUESTIONS:

Yes, I think MOTD should have such a column, sometimes the knowledge of the experts, puts all of us to shame, and perhaps makes some, reluctant to air their problems. Well I can be as dumb as the next person, so here goes
Is WindInt supposed to replace GrfInt even if you do not intend to use Multivue?

As interesting as your and Dave's articles on the Atari were. Much was said about program transfer. Could you not simply upload to a local BBs and then download to the new machine?

BOOTORDERS:

We need the MOTD to publish SUCCESSFULL Bootlists based on SPECIFIC hardware setups, BECAUSE I'M GOING CRAZY!

How many of us are wasting vast amounts of time on this problem? Is Microware looking for a solution?

Here's my setup. COCO3 temphill 512k, upgraded by Tandy Multipak. Disto LII controller. Burke & Burke harddisk c/w clock with Seagate 20meg and WD controller. 80track Mitsubishi floppy position 1 used as 80trk f0 and 80trk f2, 40track Sanyo floppy position 2 used as 40trk f1 and 40trk f3. The harddisk has identical descriptors h0,d0,dd. I use an Epson Mx80 with the coco serial port. I also have a hires mouse attached. I also utilize a software ramdisk (40 trk) (K.Darlings RAMMER) a great deal.OS9 Level II.

Heres the problem.

If a harddisk boot is used. Iniz r0. Format r0, The ram disk will not allow a backup from say f1, error 241 is reported and backup is aborted with error 248. Paths to the harddisk are lost and subsequent commands return error 232. I CAN CIRCUMVENT THE PROBLEM BY DSAVING f1 to r0, and thereafter there are no problems.

If a harddisk, is omitted from the boot, and floppies only are used then no problems occur at all. This is true whether Disto 1 or Disto 2 controllers are used. I have noticed that under both situations, after formatting r0, FREE will return DIFFERENT free sectors. 710 as opposed to 712, although both are 720 total in size.

I have also tried Microwares Ram with exactly the same effects. Heres what the experts have suggested.

Kevin Darling: My first and frequent choice for advice. Kevin says rearrange your bootlist. Get 'em all in same Block. Well I use all of Kev's utilities (Dirm etc. Thanks Kev), but there are only so many combinations possible. I've tried them all (I think) and it doesn't solve the problem.

Chris Burke: Gets my vote as supplier of the year for AFTER SALES SERVICE and product knowledge. I'm first in line for his new serial

board. Apart from the same suggestions Kevin gave, he also is stumped.

Ken Schunk: Advised kindly that there was a flaw in the Microware Ram, (not getting nuff blocks) and he would try and get a patch uploaded. Haven't seen that yet.

So, Folks! If you have my setup and don't have problems Please, Please send me your bootorder list.

HARDWARE:

Many have done it, why not share it. Kit and or step by step and purchase/source list to stuff my COCO3 and multipak, into a Clone case, with separate keyboard and integral numeric keypad, a la' IBM. Tandy is gonna lose me as a customer, if the outers of the new COCO4 don't catch up with the innards, we've all grown to love.

Until the next MOTD.
Regards

- Kevin J. Johnson ug#903

Editor OS-9 MOTD:

After reading LETTERS TO THE EDITOR, the letter by Robert Ver Duin about SOFTWARE SUPPORT, it was hard to resist writing my experience and what we found to be improvements in documentation.

After buying quite a few magazines on the new micro computer and trying to figure out operating systems and hardware chips we subscribed to 68 Micro Journal. OS9 seemed to be the best operating system after reading many OS9 User Notes by Peter Dibble. Then we seen a Package #1 for a 2 Mhz 6809 CPU board complete with OS9 level 1, Edit, Asm and Debugger. All we would need was a power supply, cabinet, terminal and two disk drives. Wowee! We receive the SS50 board, cabinet, power supply and all the software in mid February 1985 but it took some time until rest of equipment arrived. The system was up and running on the first week of April.

Meanwhile that 90 day support was rapidly ticking away toward the deadline. We wrote asking for exten-

sion but never received a reply. But we did get one good sized question in and received a very good reply with documentation not contained in instruction manuals, then the notice came in mail "end." No more support unless I could come up with \$250. I took about 6 more months to go thru the manuals and writing letters regularly to the CPU supplier to really realize that the manuals were good, but more like dictionaries. One of the worst to me was OS9gen and another was using Startup to bring up the system to program, wordprocessor or accumulate/process data. After about one and half years we acquired a Sardin SBC which uses CoCo OS9 level one as a base. These instruction manuals were better in many respects, things were getting better.

Then we saw a copy of Rainbow's Guide to OS9 and the rest suddenly became easy thanks to two members of OS9 Users Group. Thanks!! It seems that there are too few examples for each command that truly illustrate the many ways they can be used and the defaults that lurk in the background. The many commands that can use multiple datasets like DEL Test1 Test2 Test3 Test4, etc. Or SETIME will work with 2359 for time!!

It seems that for a fast start for any new operating system 3 things are needed. The command dictionary manual (each possible alternative use illustrated), getting started narrative - from startup system thru the most used commands (like CoCo starts you out) and detailed specialized boots (how to make, use and create). These would at least in the first couple of weeks get you where you could ask intelligent questions for the rest of the software support period, based in part on hardware technical manual. Initial narrative besides covering most used commands should cover basic edit commands (not fancy), compile supplied test program ASM with separate steps to be able see what is happening. Low cost source for separate descriptors and drivers should be available. At least one illustration of debugger use to find address, change name, verify and add to boot. How to save space by creating specialized boots with minimum commands and cataloging datasets thru /D0/SYS.

-Phil Chadwick

From the Editor, cont from page 1.

Microware has become very quiet lately. In fact, they are not returning my phone calls. This usually indicates that they are up to something... a new product? We are looking forward to the OS-9/68000 windows for the Atari ST. Could this be it? Response was good to the MSC news section in the last MOTD, I hope to repeat this column as a regular feature.

All OS-9 users will be interested to know that we now have an OS-9/68000 section in the Atari ST forum on GENie. Why is this good news? Well, there has been much hoopla about IDRIS, a Multi-Tasking, Multi-User O.S. becoming available for the ST. Well, we are there NOW, right in the official Atari Inc. SIG, and folks can see what we already have! You Atari OSKers and CoCo Folks both can pitch in... upload! upload! upload! Lets show GENie that OS-9 deserves its own SIG, rather than just a section in the Tandy and Atari areas.

"Today there is more 'good stuff' in the Public Domain than ever before."

Since I mentioned GENie, I shouldn't slight CIS and Delphi. The libraries there are growing by leaps and bounds! The OS9SIG on CIS is still the old standard, and hackers heaven, but Delphi is beginning to build a mostly user orientated data base. Since I frequent all three services, I can now make the pleasant announcement that all three libraries are unique.. you will find things on CIS that are not on Delphi, things that are on GENie only, etc. The winner is the user. Today there is more 'good stuff' in the Public Domain than ever before.

The Users Group problems persist. Dave and George are up to their eyeballs in unfinished business from previous epochs. The main problem centers on our 'main' checking account which stubbornly remains in the throes of changeover. Fortunately, we have the satellite MOTD account to operate from, but it cannot absorb Visa and Master Charge slips. Therefore Dave has asked me to announce a temporary cessation of acceptance of Credit Card orders. Please bear with them, those guys are really going through the wringer, and we all ben-

efit from their hard work.

We are beginning to see a rapid increase in the number of OS-9 POWER USERS. Multi-View is gaining acceptance day-by-day, and users now know they don't need to use pipes and greps to make OS-9 fly. It is now the time for us 'old timers' to step aside and let this 'young blood' run with the ball. The new guys have to recognize that the old 'bleeding deacons' still know OS-9 better than anyone, and will need some coddling to keep them from 'going recluse'. All-in-all things are looking good, especially since this is the summer 'slack period'. I hope you enjoy this issue of the MOTD. All I have to say is: thank God for giving me Jane!

Switch Selectable COCO1/2 and COCO3 Multi-Pak Interface By Bruce Isted

Required Materials: - satellite board upgraded Multi-Pak Interface (model #26-3124) - SPDT (Single Pole Double Throw) switch - 3 short (about 8" should be plenty) lengths of wire (24 to 32 AWG) - Philips screwdriver - soldering equipment and materials

NOTE 1: Opening the MPI's case voids its warranty.

NOTE 2: It's a good idea to ground yourself, the MPI, and your soldering equipment while working on the MPI to protect it from static electricity.

NOTE 3: It's also a good idea to turn the power off of the MPI and COCO when you switch the MPI between COCO1/2 and COCO3 modes.

Step 1: Solder the 3 wires to the 3 poles of the SPDT switch (one wire per pole).

Cont Page 6

SUBMISSIONS

Articles, letters and advertisements will be accepted in the following formats:

VEF, GIF, MACPAINT, MACDRAW, CANVAS, TIFF, PICT, ThunderScan, MS WORD-WORKS, MACDRAFT, READY SET GO!, or Plain text files, ON ANY OF THE FOLLOWING: 5.25" ALL FORMATS EXCEPT 96TPI, 3.5" COCO-ATARI, 3.5" MAC 400K OR 800K, OR VIA E-MAIL TO THE EDITOR ON GENIE OR DELPHI.

You can upload to my mainframe, if it is on line, between 8am and 6pm EST Sept-May: User:Guest Password: CIVIL. 300/2400/1200 baud. Call voice after 6pm. The number is 301 952-1761.

NO PAGEMAKER, Post Script, or 5.25" HD disks please.

Please include complete address, user #, and phone number on all submissions. Also tell me what you want us to do with whatever you are sending. Article, Ad, or Letter to the Editor, etc.

ADs

You too can advertise in the OS-9 Users Group Newsletter! The newsletter will be printed periodically in either an 8.5" x 11" (letter size) format, or a 11" x 14.5" (tabloid size) format. The ad cost is the same regardless of publishing format, with the exception that two color ads will only be available in the issues published in the larger format. Contact a UG officer before publication deadline for information about which format the next issue will be in.

Send your camera-ready, or electronic ad copy and a check for payment to the OS-9 Users Group so that it is received no later than the 15th of the month prior to publication month.

Advertising rates are as follows (as of February, 1988):

	regular		back cover	
	1-color	2-color	1-color	2-color
full page	\$400	\$500	\$500	\$600
half page	\$225	\$275	\$275	\$325
quarter page	\$125	\$150	\$150	\$175
eighth page	\$50	\$60		

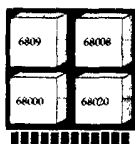
See "submissions" for acceptable formats.

Each member is entitled to place reasonable classified ads free.

Due to positive response, the half price special on electronically submitted ADs will be continued until Dec 15th 1988

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SUPPORTERS

The following persons or companies have furnished support, either time, money, materials, or just plain encouragement to the UG during this period. These are our friends.

Bruce Isted Jerry Murphy
Bert Schiedner Dan Robbins Charles Adams
Tandy Corp Keven Pittsinger
Frank Hogg Jane Larivee
Wayne Day Chris Burke Don Williams
Phil Chadwick Kevin Johnson Darlah Hudson
Lonnie Falk Marsha Darling DELPHI
Bob Sturnfield Mr Ridgeley
Fran Maghee
Mary and Louise at MSC
David Wiens Heitzo

As we all know, support for an enterprise such as the MOTD is needed on a never ending basis. Those whose names continue to appear here are the real friends of OS-9 and its users!

MOTD

Librarians Corner**CBug: a Review***by Carl Krieder*

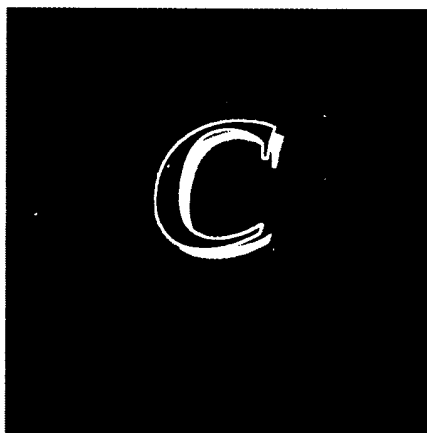
Microware has a nice debugger for assembly language that lets you work at a symbolic level. You can set breakpoints and display variables by name instead of by address. It really takes much of the pain out of debugging assembler code.

"Now I wish that I had srcdbg years ago."

The disadvantage of assembly language programming is that most errors tend to be typographical or detail, like using the wrong register, forgetting to save a register, or getting the stack mis-aligned. Using a higher level language like C preserves most of the nice features of assembler but eliminates the messy detail handling. Even so, typographical errors (like putting a semicolon at the end of a for statement) are hard to find. The problem is that we haven't had a convenient way to debug C programs. If I can't find an error by staring at a listing or inserting print statements, I run a listing of the assembler source generated by the compiler, grit my teeth, and sit down for a long, difficult session with debug.

Help has arrived in the form of srcdbg, the new source level debugger from Microware. I don't intend to make you an expert at source level debugging, but I would like to give you an idea of the power and ease of use of this nice tool. Actually, calling srcdbg a source level debugger seems a bit of a misnomer. Srcdbg does not interpret the source code. Instead, the compiler and linker save enough information in the ".dbg" and ".stb" files to correlate the source to the generated object. Srcdbg can then provide stepping and breakpoints relative to the C source listing. You merely compile the program in question using the "-g" option and type "srcdbg program" to invoke the debugger. Srcdbg will load "program", read the associated symbol file, and execute "program" up to the start of main. It will stop with the execution pointer at main and wait for a command. At this point, you can single step your program with the "step" command.

If you know that the trouble is in a certain area of your program, you can set a breakpoint at the appropriate line number using the "break" command and the "go" command. This will execute the program until the desired line of the source file is encountered. Srcdbg will then print its prompt and wait for another command. Breakpoints can also be set by function name or even block number within a function. From a breakpoint, you can execute one or more C statements with the "step" command. The "next" command is like "step" except that if a function call is encountered, that function is executed rather than stepped. The "return" command continues execution until the current function returns to its caller. I particularly like this command. I seem to always step one too many times and end up in a subroutine stepping a seemingly endless loop. Another useful command is "watch". Asking srcdbg to "watch" a variable will cause it to print the new contents of the variable when it changes. Breakpoints are removed with the "kill" command. Should it be



necessary, the "fork" command will restart the program from within srcdbg.

There are also many commands for manipulation of data. The "list" command displays a range of (or all) lines from source files. The "info" command by itself returns information about the program and the current location. When a function name is used as an argument, a declaration of the function data type is printed. If a struct tag is specified, the full declaration of the structure is displayed. The "frame" command displays the stack frames, showing the call order and arguments.

The "dump" command displays the contents of a variable in the normal hex

and ascii format. The "print" command is quite powerful. The command "print argv[0]" prints the program name, as you would expect. However, "print main" prints the address of main and "print main()" executes main and prints the returned value!

"I think srcdbg would be particularly useful to the novice C programmer."

Any debugger needs a way to assign new values to a variable. The "assign" command does just that. There are also commands for changing directories, escaping to a shell, and quitting a debug session. The interesting command in this group is the "help" command. The online help provided is just right. It is not too voluminous to be useful and not so brief to be frustrating. I have never seen Turbo C or Codeview, so I can't compare srcdbg to them. I can say that I used to be a non-believer. My opinion was that a "real programmer" didn't need a source level debugger. Maybe it was professional jealousy, I don't know. Now I wish that I had srcdbg years ago. I have not had enough time with srcdbg to find any bugs or to develop the inevitable wish list.

I don't understand Microware's pricing though. Not many people will be willing to spend more for a debugger than they did for the operating system and C. So a very important question is whether srcdbg is worth the money. Microware claims that srcdbg will increase productivity by four times. Like all such numbers, that one doesn't have much meaning without a lot of context. It is my experience that the amount of time spent debugging decreases with experience in writing C, and the nature of the bugs sought changes. Some of the bugs I chase require special hardware (a state analyzer) to catch, and srcdbg can't help there. But I can think of several times on the last project I did where srcdbg would have saved an hour or two. I don't think srcdbg can help a novice learn C in the sense of teaching him (or her) the language or good programming habits. But it will certainly ease the frustration of learning C. I think srcdbg would be particularly useful to the novice C programmer.

Si!

**Alpha Software
Technologies' OS9
Toolkit; Part 2
A Review
By Jerry Murphy**

It struck me as odd that nowhere in the instruction manuals sent by Keith Alphonso with his OS9 Toolkit is there mention of his name or company. Perhaps it's humility on his part. Or maybe a printing error. I'm here to tell you that this package of utilities contains a mix of ingredients just as satisfying as the Jambalaya I've enjoyed so often in his Cajun area of Chalmette, LA. I'm just wild about the wild card utilities he has provided! And THAT is no error!

Taken by themselves, some of the ingredients of Jambalaya are hard on the palate; a few parts of this utility package are similarly less than satisfying, as I've written here in a previous article. But the wild card parts more than make up for the limitations, and make this a worthwhile package that I would strongly recommend to all, especially the "power-users".

Most users of OS9 are familiar with the meta-characters ? and * which can substitute in a pathname for either a single character or a group of characters. For example, foo? can be used in place of food, foo3, foot, or any other 4-character word. Foo* can be used in place of those as well as longer words, such as foobar, the "*" representing 1 or many characters, including numbers. These meta-characters are recognized and exploited in the utilities WMATCH, WATTR, WCOPY, and WDEL.

Like so many others, I guess, I have a number of discs marked "MISC". It's wrong, I know, but convenient. From time to time, I might need to find a particular file with the hlp or doc extension, and I'm not sure which disc it is on. It's a simple matter now to pop the disc in question into drive 1 and issue the command WMATCH /d1/*hlp, and list only those files with the hlp extension, or whatever matched the filename with the meta-character. On a

small or uncluttered disc, this might not seem so important; on my 80-trackers, it's a time saver, believe me. On some of my larger directories in the hard drive, it's impressive. WATTR is another utility that can be a time saver. Say you have just burst an archive with several filenames that are similar. Now you wish to change the attributes, perhaps to "e". WATTR will handle it all with one command line. Supported are the positives and negatives of: r, w, e, pr, pw, pe, s and d. The only caveat, and we are reminded in the manual, is that ATTR must be in the current execution directory.

I particularly like the WCOPY and WDEL utilities. On my hard drive are two directories that get a lot of action. One is RUF, the other is WX. In the first, I auto-save (with The WIZ, of course) the incoming radio-teletype broadcasts of fleet weather bulletins. After editing out the excessive line feeds and trivia, I save the files to the weather archive directory, where they are stored for reference for a few weeks. Later, I'll save the older ones to floppies, and clean up the hard drive by deleting them. This is where I found the true value of these two utilities. It's also where I found an un-documented feature of the wildcard utilities. The window in which you do your wild card work should NOT have tmode pause enabled; your work might stop short, waiting for the customary permission to proceed after a screenful of work. For the novices, issue the command tmode -pause before doing your wildcarding. Of course, COPY and DEL must be in the current execution directory.

If the destination diskette doesn't have enough room for the entire list of files, it will WCOPY what it can to the other disc, and pause with an advisory to insert a fresh diskette and press any key. I tried this feature out, and found the filename on which it paused was NOT mentioned in the previous diskette's directory, a nice feature I wish I had in some of my Model 4 copy utilities. I was easily able to WCOPY a few dozen files from the WX directory in the hard drive to my /d1 floppy, then use the newer repeat-key features of Shell 1.2+, change WCOPY to WDEL, and kiss goodbye the old files no longer needed on the hard drive, which now lived on the floppy. I also kissed goodbye the drudgery this

backing up used to entail. I know, I could have used dsave, or one of the pipe routines written up by Keven Pittsinger, in these procedures. Or I might have developed a script routine to simplify things. But I'm basically lazy, and have enough to try to remember already. These wildcard utilities have eased my burden somewhat. They are certainly worth the \$19.95 price tag. Look for the ad in The Rainbow.

Still to come are the remainder of the utilities in this package: Pause, Goto, Upcase, Locase, Dislex, ASCII, Convert, Devname and Calendar.

*Jerry Murphy, K8YUW, CFN
<aa300>, GEnie <HAMRADIO>*

MPI Switch Mod cont from page 3

Step 2: Open the MPI by removing the four Philips screws from the bottom of the case.

Step 3: De-solder the satellite board wire attached to pin 19 of the 74LS245 (IC1).

Step 4: Solder the wire attached to the centre pole of the SPDT switch to pin 19 of the 74LS245 (IC1).

Step 5: Solder one of the remaining SPDT switch wires to the wire you de-soldered from pin 19 of the 74LS245 (IC1). Use electrical tape or shrink-wrap to insulate the solder joint.

Step 6: Solder the last SPDT switch-wire to pin 13 of the 74LS10 (IC10) on the MPI upgrade satellite board.

Step 7: Mount the switch where it's easily accessible when the MPI is plugged into the COCO.

Step 8: Close the MPI's case and try it out. The MPI will be either COCO1/2 or COCO3 compatible depending on which way the switch is set. Figuring out which is which is up to you! <grin>

TID BITS

by Bert Schneider

Many of you have spent a great deal of time and money for your computer systems (I say systems because you need more than a computer to effectively do anything). After you have taken a quick look at the balance in your checkbook, you suddenly realize you must either 1) hold a garage sale, 2) mortgage your home, 3) sell off your new computer system, or 4) get a grip of yourself and your household budget.

For the purpose of discussion, I will choose to explain how you can accomplish number four. After all, you have a computer, why not use it for something functional like keeping a home budget?

Before we begin to set up Dynacalc for the purpose of budgeting our home finances, I'll go into a little background on spreadsheets. A spreadsheet program is nothing more than a routine to handle rows and columns of numbers and text. Almost any mathematic formula can be used to manipulate the numbers and text located in the different cells. A cell is a location within a spreadsheet, sort of like an address that is denoted by both a row and a column. For instance, the location B20 is found by moving over to the "B" column and going down 20 rows. The cell can be blank, have text information in it (a label), a numerical value, or a formula.

But the single most powerful reason of using a spreadsheet versus using a program is that the spreadsheet can be used to solve a multitude of problems. Whereas a program usually is written for one specific function.

You "program" a spreadsheet by using the formulas in appropriate cells. In the case of a home budget, you are mainly concerned with addition and subtraction and perhaps a percentage of some total.

The spreadsheet I am about to describe to you is by no means the only way to set up a home budget. It is however a very good tool for tracking expenditures and income on a monthly basis. However, like anything worthwhile, you must be disciplined in two ways. First, you must set a realistic budget for yourself

based on your monthly income or else there is no point in doing a budget. Second, you must be disciplined in recording your daily expenditures.

This can be accomplished by either using a ledger book, a check book, or any other means. I use our checkbook and a cash ledger book to record our expenditures. Then, a few times a month, I enter the data into the spreadsheet. Be sure to write in your checkbook what the expenditure was for, or else you will not know what category to place the amount under.

To start, I have first made a directory

[	A	]	[	B	]	[	C	]	.....	[	AF	]	[	AI	]	[	AJ	]	[	AK	]	[	AL	]	[	AM]
1-Income			1			2			.....		31								Totals			Budgeted			Variance		% Income
2-Base Pay																		0.00								0.00
3-BAQ																		0.00								0.00
4-Rations																		0.00								0.00
5-VBA																		0.00								0.00
6-Interest																		0.00								0.00
7-Other																		0.00								0.00
8-----																											
9-Total Income						0.00			0.00		.....		0.00						0.00								0.00
10-																											
11-----OutGo-----																											
12-Allotments																		0.00								0.00
13-Auto																		0.00								0.00
14-Camera/Film																		0.00								0.00
15-Child Care																		0.00								0.00
16-Clothing																		0.00								0.00
17-Contributions																		0.00								0.00
18-Education																		0.00								0.00
19-Electricity																		0.00								0.00
20-Entertainment																		0.00								0.00
21-FICA																		0.00								0.00
22-FITW																		0.00								0.00
23-Food																		0.00								0.00
.		
.		
40-Personal Care															0.00								0.00
41-Savings															0.00								0.00
42-Sewage															0.00								0.00
43-Telephone															0.00								0.00
44-Toys															0.00								0.00
45-Trash															0.00								0.00
46-Water															0.00								0.00
47-----																											
48-Total OutGo						0.00			0.00		.....								0.00								0.00

Figure 1.

called FINANCE that will have several directories in it, each one for each calendar year. In addition to the "dynacalc.trm" file, I have created a blank spreadsheet called "budget.cal". Then when I need to create a new month, all I have to do is copy the "budget.cal" file to the date such as "june.cal". Each file is one month. Otherwise, I would enter information into the spreadsheet and it would take forever to clear out the old data for a new month.

Enough about overall structure, now with the mechanics of the

spreadsheet itself. I would like to now direct your attention to Figure 1. This is a partial spreadsheet from Dynacalc. Column "A" is used for the labels. This is where you list all of your income sources and your expenditure categories such as Food, Clothing, Rent, Auto, etc. The other labels are at the end of the spreadsheet. They are Totals, Budgeted, Variance, and Percent of Income. The entire spreadsheet is formatted for dollars (\$). Each numerical day of the month is located in each sequential column in row one. By using the Titles feature of Dynacalc, you can keep both the day and the categories on the

screen at all times while you enter data into the spreadsheet.

Columns AG and AH are not included in Figure 1. for sake of simplicity. Column AG is blank, and column AH is just an exact copy of column A. Then when you want a printout of your monthly expenditures, you may include column AH for labels, it makes it easier to print out. For example, to print out just specify a print range of AG1...AM48 (you may have more or less expenditure/income categories than I did). That will give you a left margin and the categories on the left

hand side of the page. You only need the budgeted amounts, actual amounts, variance, and percent of income. All of this information will fit nicely on one page.

The Budgeted column is obviously where you place a fixed numerical value of how much you are willing to spend (or not so willing to cough up). You should do this prior to the approaching month. You should at least try to limit all expenditures (including savings) to no more than your monthly income. It also helps if you turn off the automatic recalculation attribute of your spreadsheet while you are entering in data. This will speed things up a bit. Then when you are done, don't forget to press the exclamation point for recalculation and then save your spreadsheet.

The formulas are quit simple to use. There are only three types of formulas used, summation, subtraction, and division. The first formula is used for each daily income total and should be replicated (using relative cell addresses) in row 9 from B9 to AF9: @SUM(B2...B7). Each daily expenditure total is found at the bottom of the spreadsheet from B48 to AF48: @SUM(B12...B46). Again, you only have to enter the formula once and then use the replicate command to copy the formula to all of the other cells. For example, C48 would have the formula: @SUM(C12...C46) in it. Now the last few columns have the final information in them. The Totals column for both income and expenditures are located in column AJ: @SUM(B4...AF4). The Variance column, AL4 is the difference between the actual amounts and what you budgeted for: @SUM(AJ4-AK4). And finally, the Percent of Income column contains the percent of income the actual totals amount to: (AJ4/AJ9).

I have used Dynacalc extensively for other tasks as well. It has come in handy for keeping track of grades (I teach Digital Electronics part time at a local Community College), and Peg uses it to keep track of her Mary Kay inventory. I have integrated everything onto a 20 Megabyte hard drive so that moving from one directory to another is a breeze, especially with MultiVue. Although I still prefer the old Shell, my wife prefers the mouse/icon interface. If any of you have any unusual techniques or uses of

Dynacalc or any other spreadsheet, let me know and we'll print it. You can reach me on Delphi as OS9BERT.

Well, I hope you can get a grip on yourself and get your finances in order so you can purchase that 500 Megabyte Compact Disk-Interactive system you've always wanted!

Presidents Column cont

Summer Consumer Electronics Show

Less than two weeks after coming home from the RainbowFest, I was back in Chicago for the 1988 Summer Consumer Electronics Show. The CES is a show intended for consumer electronics dealers and distributors and is closed to the general public. The summer show is the place where manufacturers show and take orders for things to be sold during the following Christmas buying season. Although I am the ultimate gadget and toy fanatic and generally jump at any chance to see new high tech stuff wherever I can find it, I went to this show looking for two things in particular: DAT (Digital Audio Tape recorders) and CD-I (Compact Disc Interactive).

Well, DAT was being SHOWN by virtually every major consumer electronics manufacturer represented at the show, but was being SOLD by none, indicating that there is a very good possibility that we're not going to be able to obtain this product (at least not at a reasonable price) anytime during 1988. The status of CD-I was even worse: it was nowhere to be seen.

For those of you who are unfamiliar with CD-I, it could in all probability end up comprising the best OS-9 computer system of all time. CD-I machines, developed by Sony and Philips, are multi-media Compact Disc players sporting "better than broadcast quality" video, ultra-high fidelity audio, and a fully interactive user interface. Each CD-I (read only) disc may contain any combination of digital audio, digital video, and executable computer code (OS-9/68000 by definition). The best part is that the CD-I standard allows for a keyboard and mass storage (i.e., disk drive) de-

vices to be added to a basic player, turning it into what may be the ultimate in home computer systems (at least as far as graphics and sound go). Users of CD-I/OS-9 computers will have full access to the CD-quality 16 bit D/A converters and video drivers in real time for their creative pleasure.

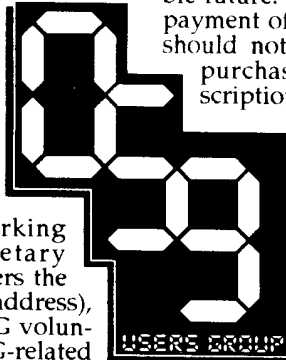
Sony and Philips had shown a working CD-I unit earlier this year at a CD-ROM conference and had announced that the first production CD-I units should be available later this year, along with a large number of software titles which are currently under development. Because both Sony and Philips were represented at the SCES and CD-I is supposed to be a "consumer product", I fully expected to see a demonstration of this exciting technology at the show. Unfortunately, the Sony people I talked to at the show didn't even know what CD-I was, and the Philips booth was only open to those important enough to get a written invitation in advance—so I didn't get in. Judging from the lack of CD-I press releases at the show, I doubt that Philips was showing CD-I there either. So where is CD-I? If it wasn't being shown at the Summer CES, then it looks as if it is going to be very hard to find in the stores by the 1988 Christmas buying season. I know Microware, Sony, Philips, American Interactive Media, and many others have been working their rear ends off and spending LOTS of money developing CD-I for three or four years now. Somebody please tell me where I can play with one!

A Message to UG Members

As you hopefully have noticed by now, the OS-9 Users Group has been making positive advances in getting the MOTD newsletter back on a regular publication schedule. The large number of letters we received during the MOTD's publication absence indicates that UG members feel that the newsletter is one of the most valuable assets of their membership in the Group. The content of these letters, however, indicate that an alarmingly large number of UG members do not really realize that the OS-9 Users Group is NOT a magazine publisher, but a CLUB. The MOTD is the club's newsletter which is published as volunteers' time and available funds per-

mit. In the past, we have made every attempt to send each member as many issues of the newsletter as possible during their membership terms- sometimes even extending the duration of the membership term when collected funds exceeded expenses and another MOTD mailing could be justified (we are, after all, a non-profit organization). The fact remains, however, that we cannot promise that any member will receive any minimum number of newsletters during their 1-year memberships. When you join the UG, your membership dues are pooled together with all other members'; these funds are then used to support OS-9 related educational and operational projects as specified by the elected officers of the group. Newsletter publication is only ONE of the uses of UG funds. Paying off past debts is another one. Others include payment of wages of Kathy Turner, the UG's hard-working Correspondence Secretary (she's the one who answers the mail at the UG's Florida address), and reimbursing OS-9 UG volunteers and officers for UG-related out-of-pocket expenses such as postage, telephone charges, operating supplies, etc. Another important UG project is the Software Library- where people who donate software to the library are sent a free disk of software for each new public domain program that they donate.

I want to make it clear that it remains the intent to spend membership dues back on the general membership and OS-9 community in the form of services, products and support of educational and promotional projects as directed by the elected UG officers. What we CANNOT do, however, is make commitments that rely on the performance of unpaid volunteers (including the aforementioned officers). The UG must rely on these volunteers to continually promote the group, encouraging non-members to join and old members to renew so that a continuous supply of operating funds can be relied upon. But because volunteers must eat too, they often run out of time to spend on UG projects so that they may make a living at their REAL jobs. And when the volunteers stop working for the UG, the money stops coming in.



Receiving the MOTD Newsletter is presently one of the benefits of being a member of the OS-9 Users Group. I wish to stress for the reasons outlined above, however, that the UG cannot promise how many issues of the newsletter you will receive during your one-year membership. In fact, it is fully within the authority of the UG officers to suspend MOTD publication altogether, if need dictates accordingly (remember, the UG didn't even HAVE a newsletter during its first two years of existence- and dues were \$25 back then too)! Fortunately, we have no intention of suspending MOTD publication in the foreseeable future. But I want to stress that payment of your membership dues should not be considered to be a purchase of a magazine subscription. When you join the OS-9 Users Group, you become part of the body of members that decide what their money will be used for. If you do not feel that the OS-9 community is benefiting appropriately from the pool of funds, you are invited to get involved and try

and help us work out the problems. By far the best way to get involved is to RUN FOR OFFICE. Each year, UG officer elections choose the President, Vice President, Secretary and Treasurer to serve during the following year. The person elected as President has the responsibility to appoint the Director-at-large, Editor and Librarian from the available volunteers. NOW is the time to volunteer to run for an office in this year's elections. We need volunteers to run for every available position, including President, Vice President, Treasurer, Secretary, Editor and Librarian, as well as other volunteers to serve on committees such as the Software Exchange Committee, the Resolutions Committee, and others. PLEASE WRITE US AND LET US KNOW WHICH OF THE ABOVE YOU WOULD BE WILLING TO HELP OUT WITH!

Call for Volunteers

In addition to filling the positions of office mentioned above, the UG also needs volunteers to help out on a number of specific UG projects. Some of the most important of these

are related to the Software Library. In particular, Carl Kreider would like to reactivate the Software Exchange Committee, with members handling library disk duplication and doing general Library updating and file maintenance. The disk duplication task would involve a volunteer seeking out a bargain price on blank floppy disks and buying a batch (to be reimbursed out of UG funds). The volunteer(s) would then make backup copies of individual UG Library volumes as orders come in and mail them accordingly. All out of pocket expenses (postage, packing material, blank disks) would of course be reimbursed by the UG upon receipt of a copy of the receipts and/or an expense report. As an incentive to take on this task, we would send those who are selected to do the job a complete set of UG Library disks. If we get enough volunteers to help out with this project, each person might only be responsible for ten or so volumes.

The next project would be to help do a complete overhaul of the UG Library. That is, we need to identify and either fix, or get rid of some of the older software that no longer runs properly under the current releases of OS-9. There are available newer versions of much of the software that exists in the UG library presently. We need people to help identify the problems and individually update each volume which can be improved. People who volunteer for this task would be assigned an individual volume number and asked to completely reconstruct that volume, using the latest and best versions of the represented software. Additionally, older volumes of marginal utility would be eliminated altogether and replaced with something generally more useful. Once again, people who do these jobs would be given a free copy of the complete library. This is a big job, but somebody's got to do it. I've already started taking a look at a new version of Volume #0 for new members. I may get it done someday.

Coming Soon...

We have big plans for the UG and the MOTD in the future. If everything goes well, you may see an electronic construction article or two, and lots of neat new public domain software. Keep your eyes on this spot.



OS9boots...

This section is reserved for a special group, new sellers of products of interest to OS-9 Users, especially the "little guys". It is here because the Users Group is always looking for ways to increase the use of OS-9, and although untested by time, these people and companies deserve your consideration. We suggest you give them a try by placing an order or two! Advertisers here are allowed to place an appropriate size ad FREE for one issue, and may repeat the exact same ad for three issues at 1/2 the current best rate. We will do our best to help in

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PCDIRdirectory of PC disk	RSDIRdirectory of RSDOS disk
PCDUMPdisplay PC disk sector	RSDUMPdisplay RSDOS disk sector
PCREAD .....read file from PC disk	RSREAD .....read file from RSDOS disk
PCWRITE .....write file to PC disk	RSWRITE .....write file to RSDOS disk
PCRENAME .....rename PC file	
FLEXDIR .....directory of FLEX disk	PCDELETE .....delete PC file
FLEXDUMP .....display FLEX disk sector	PCFORMAT .....format PC disk
FLEXREAD .....read file from FLEX disk	FLEXWRITE .....write file to FLEX disk

Extensive options: Single, double sided disks, 40 or 80 track floppy drives, 8 or 9 sectors. First level sub-directories - PC (MSDOS) FLEX transfers binary files also. Use pipes for direct transfer between PC - FLEX, PC - RSDOS, etc.

Requires: For COCO OS-9 (Level 2 for MultiVue version), 2 drives (one can be hard or ramdisk), MultiVue for MultiVue version, SDISK (SDISK3 for MultiVue) - contact D. P. Johnson for SDISK. For GMX Micro-20 (680x0) - OS-9 v2.0 or later.

GCS File Transfer Utilities for CoCo - MultiVue version \$54.95
- Standard version \$44.95
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any way we can to insure that these "starter" ADs are attractive. If any user wants to start his own business, by all means contact the editor. Or if you know of a new OS-9 dealer, ask him to contact us. Tell him about OS-9Boots! Readers are reminded that the UG is not responsible for the content of any AD in the MOTD, including the "boots".



Files Edit Run Compile Options

**OS9
Programming Tools**

To Assembly .a
To Object .r
To Execute
Cancel

• CCENV PROGRAMMING ENVIRONMENT

CCENV is a mouse-and-menu driver for all OS9 compilers and assemblers. CCENV is interactive and easy to use. A single mouse-click can take a C program from source code to executable module and then run the program in a window. Colorful pull-down menus, popup menus and dialog boxes set all compiler, assembler, and linker options. Temporary files are automatically written on the RAMdisk if available, reducing compile-time. Go from edit mode to compile and back to edit with mouse-clicks. Error messages are saved and can be scrolled in a window during your next editing session.

CCENV maintains configuration files so all options can be rechosen automatically. A PROJECT option implements the MAKE utility, allowing large projects to be split into separate modules until linking. Coupled with CCENV, any OS9 compiler becomes interactive and brisk. You can throw away "CC1." Move over, Turbo C! This is the way programming should be!

CCENV OS9 COMPILER/ASSEMBLER ENVIRONMENT.....	\$49.95
with source code.....	\$99.95
<small>Requires OS9 Level II, mouse, and any compiler or assembler Preset for the MicroWare C Compiler</small>	

• FUNCTION LIBRARIES

C GRAPHICS LIBRARY: The complete CGFX graphics library in C source code and relocatable modules.....	\$19.95
C MATH LIBRARY: Basic09 FORMAT.....	\$9.95 Both.....\$24.95

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STANDABLE directions for using mice and menus in OS9. \$14.95

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Special Announcement

A group of folks are exploring the idea of holding a convention for OS-9 users sometime in the February or March time frame, this winter. The convention, which would be held in the Dallas-Fort Worth metroplex at a site to be determined, would combine an exhibitor's show area with special attention to inexpensive booths where budding entrepreneurs can display their wares, lectures on both OS-9 and OS-9/68000, as well as the fellowship of meeting your fellow OS-9 Users Group members, if the U-G can be convinced to participate in the convention, officially.

"So far, the reactions from both the user community and from industry folks has been positive."

So, now, the search for a suitable site for the convention is beginning. Once a suitable site has been selected, the dates for the convention, tentatively scheduled for a Saturday (all day) and Sunday (morning and early afternoon) will be known. From that point, the costs can be determined, etc. If you would be interested in attending the convention, either as a participant or as an exhibitor or lecturer, please drop a note or postcard to:

Wayne Day Golden Triangle Corporation 6029-A Plum Street
Watauga, TX 76148, and let him know.

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Level II Tools: Includes all of the above plus: Bcolor, Fcolor, Border, Mmap, Wconfig, Palette, Browse, Window, and Wend.
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OS9 USERS GROUP LIBRARY

#0 New Member Introduction

ATTR—CHG "Group-change" of all files in a specified directory. Allows optional verification of changes before they are made. *BASIC09.68009*

BOOTSPLIT Splits merged object files (such as "OS9boot") into separate modules. *BASIC09.68009*

DDIR Lists active system devices, their path, descriptor address, physical address, system buffer, device driver & file manager *ASM.68009*

DLIST Disk dump utility. Works like "Dump /d0@", except you can start at any sector on the disk. *BASIC09.68009*

DOCGEN3 Generates the necessary data and documentation files to accompany all submissions to the OS-9 users group software library *BASIC09.68000*

DOCGEN4 Generates OS-9 users group software submission files. *C—MW.68009*

HCOPY Prompting "Copy" utility *BASIC09.68009*

HDEL Similar to "Deldir", but prompting for delete of every file. *BASIC09.68009*

HDIR.B Executes a hierarchical directory listing for an entire directory. *BASIC09.68009*

HELP.A Prints user information on the specified filename. *ASM.68009*

INSTALL Makes bootable disk by "linking" a named file. *ASM.68009*

LISTN Prompting file listing program. Outputs to standard output path to allow redirection by shell. *BASIC09.68009*

LLOAD Uploads a text file, one line at a time, to a full-duplex bulletin board system. *BASIC09.68009*

MODLIST Prompting "Ident" utility *BASIC09.68009*

QDIR Prompting version of new MW "D" command (minus the options). Outputs a vertical directory listing to standard output. *BASIC09.68009*

REHOOK Moves a file from one directory to another (on the same device) without "Copy/delete". *BASIC09.68009*

REMOTE "Links" user to a specified remote terminal path for communication. *ASM.68009*

RMLOCATE Calculates a rms record number for a given key field. *BASIC09.68009*

RMSNEW Basic09 callable equivalent to Washington Computer Services' "Rmsnew" utility. Used to generate a blank data file for rms. *BASIC09.68009*

#1 Spelling Checker

DICTIONARY Dictionary look-up. Finds words in dictionary, or, if not found, attempts to correct the spelling. *C—MW.68000*

SPELL Spelling checker. Lists words in document not found in dictionary. *C—MW.68000*

UNWORDS Produces a coded (compressed) dictionary as used by the programs "Words", "Spell", and "Dict". *C—MW.68000*

WORDS.C Prints un-coded words from the file "dd/misc/dictionary", as created by the utility "Unwords". *C—MW.68000*

#2 Spelling Dictionary

SPELLING DICTIONARY This volume does not have a separate title - it is considered to be a companion to volume #1.

#3 Word Processing Utils

PRINT.B File printing utility- adapted from K&P's "Software tools" *BASIC09.68009*

SPLIT.09 Lists two specified text files, side by-side on an 80 column screen. Allows visual comparison of first 38 chars of each file. *C—INTROL.68009*

SQSH "Squashes" text files by replacing every carriage return character with a "/" and every string of more than 1 space with 1 space. *ASM.68009*

TAB.09 Converts spaces in a text file into tabs (ascii 9) and spaces; tabs replace groups of 8 spaces. For file size reduction. *C—INTROL.68009*

TC Does line by line compare of text files & prints lines that differ. *C—MW.68009*

TEXCOM Compare two text files a line at a time. *BASIC09.68009*

TRANSLIT Transliteration- as described in sections 2.7 thru 2.9 of the book "Software tools" by Kernighan and Plauger *BASIC09.68009*

UNTAB Replaces tab (ascii 9) chars in the specified input file with " " (eight spaces). For undoing the "Tab" filter. *C—INTROL.68009*

WORDS.A Parses input into words and outputs each word on a separate line. (note that "Adj w1" and "Split" also perform this function). *ASM.68009*

#4 Programming Utilities

BINCOM Performs a byte-for-byte compare of two specified files *BASIC09.68009*

DCOPY.09 Full directory copy utility *BASIC09.68009*

GRAFT Copies a subtree of a directory structure. Works similar to "Dsave", except an intermediate procedure file is not created. *C—INTROL.68009*

LATEST Scans named directory and all directories below it, printing the path name of files whose last modified date is later than date. *C—INTROL.68009*

MODBUILD Prompting file "Merge" utility *BASIC09.68009*

MODULE Removes the named modules from the specified file and sends result to standard output. Works like "Ident" if no names are given. *C—INTROL.68009*

MV.09 Moves files from one subdirectory to another by manipulating directory references (no data is actually moved... Very fast!) *C—INTROL.68009*

PWD More powerful version of MW's "Pwd" command *ASM.68009*

#5 File Processing Utils

EQUFIX Strips comments, blank lines, and pseudo ops from equate files *BASIC09.68009*

EXTRACT Filters a single C function definition from a C source text file. The specified function appears on standard output. *C—INTROL.68009*

HX Converts standard input data to readable hex dump format output. *ASM.68009*

INTRUDER Prints a formatted hex and ascii "Dump" of the specified sector of the named input file (including directory files). *C—INTROL.68009*

NEWSTRIP Filter to strip all control characters except crs out of standard input path. *BASIC09.68009*

PAD Improves readability of disassemblies by inserting blank lines after control transfer statements etc. *BASIC09.68009*

PATCH Changes selected bytes of any file. *C—INTROL.68009*

SORT Sorts lines of text appearing at standard input and sends sorted version to standard output. *C—INTROL.68009*

STRIPNUM Strips a specified number of characters from the beginning of each line in a text file; a new file is created as the output. *BASIC09.68009*

STRIPREM Strips all "Rem" statements out of the specified input file (which is not modified); a new "Procedure" is created as output. *BASIC09.68009*

STRIPZ Copies xxxxx labels from disassembly to separate file for creation of substitution file with editor. *BASIC09.68009*

#6 Adventure Game source

ADVENT This is the source package for the famous Crothers & Woods adventure game. *C—MW.68009*

#7 Adventure Game object

ADVENT Ready to run Adventure game. Uses 1 or 2 words commands. Includes game save feature. *Object.68009*

#8 General Interest

CHECKBOOK Simple program to help user balance a checkbook. *BASIC09.68009*

FINANCE Menu driven program that makes a number of financial calculations. *BASIC09.68009*

JERRYBENCH 10 x 10 matrix multiply benchmark *BASIC09.68009*

MAKDIR.A09 Intrnl C subroutine to perform "Mkdir" function without calling shell. *ASM.68009*

OTHELLO OS-9 version of traditional board game *C—INTROL.68009*

SIEVE Self-timing benchmark *BASIC09.68009*

#9 C Programmer's Toolkit

CB Converts poorly structured C programs to K&R style. *C—MW.68009*

FINDFUNC Generates a list of functions from C source, including the file and line *C—MW.68009*

LIB Splits the MW C library back into modules for modification or addition - generates a file of the module names *C—MW.68009*

PPC Titles, dates, paginates C listings. *C—MW.68009*

XC Cross reference generator for C programs *C—MW.68009*

#10 Math & Electronics

AVERAGE—STDEV Calculates means, standard deviations cross products and sums of squares for two arrays of numbers. *BASIC09.68009*

FAST—FOURIER Performs the complex fast fourier transform of arrays up to 2048 entries. Also inverse transform. *BASIC09.68009*

LINEFIT Finds least square fit lines thru a set of data points x y as well as their means std dev and correlation coeff. *BASIC09.68009*

NETWORK Electronic circuit network design/analysis *BASIC09.68009*

NORMAL Normal calls rnd—smpl repeatedly to demonstrate this rnd function which returns random variates from a normal distribution *BASIC09.68009*

RC Generates data illustrating behavior of simple resistor-capacitor circuit. *BASIC09.68009*

RESRATIOHC Prints all 1% resistor combinations that fit the specified resistor ratio and error (tolerance) limits. *BASIC09.68009*

UNIVARIATE Computes all standard statistics for a set of single variable observations. *BASIC09.68009*

#11 Word Processing Utils

COL Columnates standard input to standard output *PASCAL—OMG.68009*

FINDS Finds specified strings in a file. *C—MW.68009*

PF Formatted print program. Accounts for line feed in long lines in Basic09 list files. Allows arbitrary header. *C—MW.68009*

PRINT.C Yet another file printing program *C—MW.68009*

UPLOW Converts text to all upper or all lower case *C—MW.68009*

WC Counts words chars and lines in a text file. *C—MW.68009*

#12 Programming Utilities

ASCIIIFY Converts file into hex/ascii form *PASCAL—OMG.68009*

DEASCII Opposite function of asciiify. Converts files from hex/ascii form to original. *PASCAL—OMG.68009*

LISA Lists bunched up assembly language sources in a tabbed assembler format to standard output. *ASM.68009*

SHOREGS Shows the 6809 registers on the stderr path. Used in debugging assembly language programs. *ASM.68009*

SHOWC Lists file showing non printable characters *C—MW.68009*

SYSTEST Facilitates testing the effects of OS9 system calls from a "Stable" environment. *BASIC09.68009*

TCMP Text file compare, with re-synchronization, that shows differences between files *C—MW.68009*

#13 File Processing Utils

GREP The unix pattern finding utility. *C—MW.68009*

SPINT Grep like utility to match text patterns and print lines with (or without) the pattern. *C—MW.68009*

TR The K&P tools translit utility. *C—MW.68009*

UNIQ The unix uniq utility. *C—MW.68009*

#14 File Maintenance

ARC Archiving file structures by date *C—MW.68009*

DELW Wild card delete *C—MW.68009*

DIRW Wild card dir program *C—MW.68009*

TREE Prints tree structure of dir, optionally reporting space used *C—MW.68009*

#15 Communication

ACIA.MAPIN Filter to change control strings from a terminal into corresponding ansi strings. *ASM.68009*

ACIA.MAPOUT Appendage for the acia driver; gets control of init, read, and write and passes them thru acia to the physical device. *ASM.68009*

DNLOAD Copies input from specified device to stdout. Echoes received characters back to host as signal to send more. *ASM.68009*

FM Creates a file of message originators when fed downloaded CIS messages - see insert & ninsert. *BASIC09.68009*

INSERT Reads the file created by "Fm" and inserts new users into the "Users" file. *BASIC09.68009*

KILL13 Strips all "HEX13" (x-off) characters from a file. *BASIC09.68009*

MODEM Copies characters to/from specified device. This is a revised version of the original program by D. Maclean. *ASM.68009*

NINSERT Generates a file (users) sorted by CIS number from the file "Users". *BASIC09.68009*

TUBE Copies characters to/from device. Has 1200/300 baud speed change capability. C—*INTR01.6809*

UPLOAD Copies stdin to specified device. Waits for chars to be echoed back. *ASM.6809*

#16 Hardware Customizations

ANSI.GOTOXY Video terminal data module for ansi-standard term; for use with "Dynastar" screen editor. *ASM.6809*

CCGOTOXY Gotoxy module for normal dynastar and either o-pak or wordpak. Completely remapped color computer keyboard. *ASM.6809*

CLOCK Clock driver module for computerware 6800 c14 calclock/timer board *ASM.6809*

PRSET Sets the programmable parameters of the GE (genicom) 3404 line printer *PASCAL—OMG.6809*

PRSET—10X Sets some of the programmable parameters of the gemini 10x line printer *PASCAL—OMG.6809*

P1 Parallel printer driver for TRS-80 color computer *ASM.6809*

SERIAL Interrupt driven device driver to replace the CoCo rs-232 driver. Allows operation up to 19.2 kbaud. *ASM.6809*

#17 Basic09 Programmer's Toolkit

BLANKO Blanks a complex data structure to nulls *BASIC09.6809*

CHAR—TO—INT—TO—CHAR Two procedures to convert Basic09 strings to integers and vice-versa. *BASIC09.6809*

CHECK—FILE Determines file status of specified input file. *BASIC09.6809*

DATE—CVT Converts date between two formats: mm/dd/yy to/ from yddd (where "ddd" is the julian day of year form 1-365). *BASIC09.6809*

DOLLAR—PRINT Converts "Real" amount (" -999.99) to "String" "Dollar" format. *BASIC09.6809*

ERREPORT Prints message on line 2 of terminal, waits for cntl-f acknowledgement. *BASIC09.6809*

GETNUMB More powerful version of the Basic09 "Val" function. *BASIC09.6809*

INKEY Determines if a key has been typed on the given path, and if so, returns the next input character as the string variable. *ASM.6809*

INKEY—HAL Read individual key depressions *ASM.6809*

ISAM Primitive ISAM package *BASIC09.6809*

LOWUP A subroutine for Basic09 for converting up to 252 string variables to all upper case ascii characters. *ASM.6809*

MODLINKB Used to link to a data module so that data may be passed thru the data module to/from all other processes that have linked to it. *ASM.6809*

POPEN Creates a pipe by dupeing one of the std paths & using the path as the pipe that will go to or from the forked pipeline process. *BASIC09.6809*

PWD—NAME Does a "Pwd" and returns the result (output) as a Basic09 readable string variable. *BASIC09.6809*

SYSCALL Universal system call subroutine—microware version. *ASM.6809*

SYSCALL—HAL Execute an OS-9 system call from Basic09. This is a smaller, but un-rommable version of the microware routine "Syscall". *ASM.6809*

TERM—CTL Performs special terminal control sequences. *BASIC09.6809*

#18 System Utilities

ALIAS Creates an alternate name for an OS-9 command. C—*MW.6809*

DDISPLAY Same as "Display" utility, except characters to be displayed are specified in decimal, rather than hex. *ASM.6809*

EMD Extended memory dump for LII C—*MW.6809*

ERROR Prints an english error message that corresponds to the error code (number) passed to it. Completely self contained. *ASM.6809*

ILEAV Prints disk interleave tables *BASIC09.6809*

MRENAME Changes name of module in memory and corrects crc *ASM.6809*

NEW—HEX—DUMP Filter that outputs a hex dump of standard input path. Works well in a pipeline. *BASIC09.6809*

PURGE.A Purge will unlink a module until it's gone. Great for those left behind by Basic09 during debugging. *ASM.6809*

RIDSECT Read disk id sector and decode and display the information. *BASIC09.6809*

TODAY List date and time in a legible format. Can be used as a base for other date related programs. C—*MW.6809*

#19 Languages 1: XLisp source

XLISP Source for Lisp-like language with object oriented functions C—*MW.6809*

#20 Languages 1: XLisp object

XLISP Object for Lisp like language with object-oriented functions

#21 File Maintenance

APPEND Appends one or more infiles (which may include stdin) to output file (which may be stdout). *ASM.6809*

D Lists current directory one entry per line with wild card matching. C—*MW.6809*

DEL.P Identical to MW's del except it returns its own error messages (ideal for level II) and does not stop deleting files on errors *PASCAL—OMG.6809*

DIR "Dir" command for 64 column format screens *ASM.6809*

DIRLISTER To print-out a hierarchical directory listing. *BASIC09.6809*

DL Delete utility with option to read list of file names from stdin instead of as parameters. *ASM.6809*

FCOPY Reads a file of files and generates a shell script to copy those files *BASIC09.6809*

OWNER Changes owners of files and directories C—*MW.6809*

POST Utility to merge "—rms" data files - useful for posting smaller files into the master data base. *BASIC09.6809*

#22 Programming Utilities

BIN2BCD Convert binary to bcd and bcd to char *ASM.6809*

FLEXBIN.A Expands flex format binary files into full image (full size, position-dependent) binary files, ready to "Rom". *ASM.6809*

FLEXEX Converts flex format binary files to Motorola s-record format. *ASM.6809*

FORMS2.GNX 100% replacement for micro focus forms2 package update template. Includes the files forms2.Gn1 and forms2.Gn2. *COBOL—MW.6809*

GO 1k job control language which uses either current working directory or a macro library for macro input *ASM.6809*

#23 File Processing Utils

COMPRESS Data compression filter C—*MW.6809*

CRYPT.A Encodes and decodes files using a personal keyword *ASM.6809*

CRYPT.C Four-rotor enigma machine encryption/decryption filter C—*MW.6809*

FIELD Select fields or columns from standard input and send to standard output. C—*MW.6809*

STRIP.C Optionally strips any combination of control characters, carriage returns, and/or line feeds from a text file. C—*MW.6809*

#24 General Interest

CHKNG General checkbook - allows users to enter & edit check info, mark cleared transactions, & obtain cleared & actual balances C—*INTR01.6809*

MORTGAGE The best mortgage program ever. *BASIC09.6809*

MUSIC Audio recording cataloging system *BASIC09.6809*

#25 Word Processing Utils

ADJ Limits maximum line length in a text file without splitting words. Can also be used to parse a file to one word per line. *ASM.6809*

BUILD Buffered version of build which writes to the disk less often and terminates at eof *ASM.6809*

CAT.09 Concatenates files to standard output C—*MW.6809*

CHECK Compares bin/ascii files & prints differences. Looks for matches, insertions, deletions, (fairly smart & a little slow) *BASIC09.6809*

ONLINE De-format an article for submission to publisher with automatic text formatting programs C—*MW.6809*

SPACES Strips all trailing spaces from each line in a text file. Can also reduce all strings of spaces in a file to a specified length. *ASM.6809*

STRIP.A Used to optionally strip, add, or process any combination of the following: crs, lfs, backspaces, parity, control characters. *ASM.6809*

#26 C Language Math Library

TRANS—LIB.A Replacement for clib.l that includes transcendental functions. C—*MW.6809*

#28 68k Utilities

CHOWN Utility to allow the changing of the group user-id of any file or directory. C—*MW.68000*

DCOPY Multiple file disk copy utility C—*MW.68000*

DEDT Binary editor for disk files. Edits files directly on the disk. *BASIC09.68000*

DMP Disk dump and patch utility. C—*MW.68000*

FTLL Determines file size C—*MW.68000*

LS List directory (sorted) unix style. C—*MW.68000*

MV Unix style file or directory move without copying the file. C—*MW.68000*

#29 File Maintenance

AP An append utility to append to a file or to append several files into one. *ASM.6809*

CHOWN.09 Changes the ownership of a non-directory file C—*MW.6809*

DEL.A Similar to microware "Del", except does not abort on error until all filenames passed are processed *ASM.6809*

ERASE Erases file from rbf media to protect sensitive information. This makes it totally unrecoverable. *ASM.6809*

FCAT Concatenate files to std out, either from a list on the command line or from a list on std in C—*MW.6809*

HDIR.A A multi-level, hierarchical directory *ASM.6809*

PURGE.B Permanently erases unused portions of rbf media to protect sensitive info. *BASIC09.6809*

RM Deletes files, as specified on the command line or on std in. C—*MW.6809*

SCAN Scan attempts to read each sector of a file/device; any errors encountered on the way are displayed. *BASIC09.6809*

SORTDIR Sorts directory entries in increasing ascii order. *BASIC09.6809*

#30 File Processing Utils

ASC Converts file to upper or lower case ascii. C—*MW.6809*

COM Filter which clears the most significant bit of every byte in a text file *ASM.6809*

NROFF Text processor based on "Software tools" C—*DYNA.6809*

PAGE Breaks text files into 58 line pages, separated by form feed characters. *ASM.6809*

PAGPRT Paginates a file- list obeying settings for top, bottom, & left margins, page length, spacing, and starting point in file. *BASIC09.6809*

ROF Text formatter; reads standard text file with command codes, generates formatted, printable output *ASM.6809*

STRIPARITY Clears the parity bit on all characters in a file, (see "Strp.A" if you want to do this and remove all control characters). *BASIC09.6809*

UPPER Equiv to the unix counterpart...Converts a file to upper-case ascii. *ASM.6809*

UPPERCASE Converts a text file to upper case. *BASIC09.6809*

WCL Counts the characters, words, and lines in a file using 32 bit numbers C—*MW.6809*

#31 Hardware Customizations

COCO—CONFIGURATIONS Configuration information needed to run rms dynacalc and dynastar (standard versions) on color computer with pbj wordpak or flh *MISC.6809*

KIMTRON Set of files to aid in the use of the Kimtron ABM85 terminal with OS-9. Startup file will auto program func keys; ds gotoxy mc. *MISC.6809*

#32 Hardware Customizations

NEWID Newid displays and allows change to the disk identification parameters on lsn-0. It is menu driven and can access drives 0-3. *BASIC09.6809*

TVI970—CONFIGURATIONS Configuration and programming programs for the video 970 for running dynastar and dynacalc *MISC.6809*

#33 System Utilities

CHVOLNAM Change the name of a volume (disk). *BASIC09.6809*

DATES Keeps track of dates appointments birthdays etc. Warns if they are coming up soon. C—*MW.6809*

DISKLOCK Makes an OS-9 disk inaccessible to normal system commands. *BASIC09.6809*

DUMPMEM Level II memory dump by full extended address representation. *BASIC09.6809*

LOADMEM Level II memory load with full extended address representation. *BASIC09.6809*

MAPMEM Maps level 2 extended memory to Basic09 space. *ASM.6809*

MODMEM Level II memory modify with full extended address representation. *BASIC 09.6809*

SAVEMEM Save portion of level 2 (full extended address) ram. *BASIC 09.6809*

SETMEM Wipes out memory. Useful for deleting sensitive info from battery ram. *BASIC 09.6809*

#34 Hardware Customizations

BASUTIL Used from Basic to set a user id or return a terminal name. *ASM 6809*

CHANGETERM Dynamically modify your terminal configuration. *BASIC 09.6809*

SETERM Configures the terminal from configuration files. *BASIC 09.6809*

SETPARAM Modify the terminal configuration files. *BASIC 09.6809*

TERM—UTILS Utilities for screen formatting and data entry. *BASIC 09.6809*

#35 System Utilities

CHANGEPASSWORD Allows users to change their password. *BASIC 09.6809*

DISASM.A OS 9/6809 disassembler. Adapted from program in Byte magazine, Feb 1982. Includes OS 9 system calls. *ASM 6809*

DISKID Will allow the user to rewrite the disk name and date on Isn0 after the backup command has overwritten it. *BASIC 09.6809*

LISTPASSWORDS Provides the superuser with a list of the users and their passwords. *BASIC 09.6809*

LISTUSERS Allows the user to get a list of the users of the system. *BASIC 09.6809*

MAKETOPICS Will build a list (file) of all help files available with header and footer and date stamp. *MISC 6809*

#36 General Interest

AMORT Amort will print to your printer a complete amortized schedule of a monthly payment type loan and give yearly totals. *BASIC 09.6809*

EPS Allows one to set up an Epson printer using English commands. *C—DYN 6809*

HANGMAN Revised version of Jim Grovac's hangman game, downloaded from the OS 9 forum on compuserve. *BASIC 09.6809*

KALAH Plays two versions of the interactive strategy board game. *C—MW 6809*

OKI Allows one to setup Okidata 82/92 printer using English language commands. *C—DYN 6809*

#37 Kermit

KERMIT Serial line file transfer with error correction. *C—MW 68000*

#38 Programming Utilities

REPLACE Replaces strings in text files. *C—MW 6809*

SIFLEX Converts Motorola s1 format to flex binary format. *C—MW 6809*

SIINTEL Converts Motorola s1 format to Intel format. *C—MW 6809*

SILOAD Converts Motorola s1 format to OS9 binary format. *C—MW 6809*

SIUNFLEX Converts flex binary format to Motorola s1 format. *C—MW 6809*

SIUNLOAD Converts OS-9 binary format to Motorola s1 format. *C—MW 6809*

SIXREF Prints sorted x-reference from a Motorola s1 format file. *C—MW 6809*

#39 Xcom9

BREAK Sends a break on a 6850 acia port by directly accessing the chip csr. Has some tutorial value for level 2 users. *ASM 6809*

XCOM9 Modem pgm with xmodem support, non xmodem capture and upload modes, expandable capture buffer and much more. *ASM 6809*

#40 System Utilities

HELP.C Upgrade of asm version; list help files on the help directory. *C—MW 6809*

MAKE Make a file based on dependency files. *ASM 6809*

SETIME.NEW User friendly version of OS9 setime program. *ASM 6809*

SST Shows system block size; total system ram; block allocation map for system state & system state free memory. *C—MW 6809*

#41 Programming Utilities

BDUMP Displays memory in hex and characters. Allows for input of from/to.inc. Inc permits readable displays for blocked tables, etc. *BASIC 09.6809*

DATES.B Six procedures for inputting dates, converting them from one format to another and printing them. *BASIC 09.6809*

DISASM.B Takes a beginning and ending address, then outputs a disassembly to output file of your choice. *BASIC 09.6809*

FILLFILE Builds disk files filled with a specified character. Used for padding object code before copying to a rom. *BASIC 09.6809*

HEXIFY Dumps a file in hex with one hex byte per line—good for finding ctrl chars, etc. *C—MW 6809*

HEXSTRINGS Two procedures: (1) convert hexadecimal string to a real number and (2) convert a real number to a hex string. *BASIC 09.6809*

MAKARG Splits a string into an array of words. Returns word count and word array. Used to extract arguments from a command line. *BASIC 09.6809*

PEEK Displays the memory map and register stack for a given process id. *C—MW 6809*

PRINTCOL Formats a text string into a column specified by the user and outputs it to a specified path. *BASIC 09.6809*

RANDOMIZE The program randomizes the random number generator in Basic09 by time of day clock. *BASIC 09.6809*

SHOMEM Does a hex and ascii dump of a region of memory to stderr. Designed to be used in debugging ml programs. *ASM 6809*

VERMOD This program will compare a memory module, device descriptor, etc. to a saved disk file. *ASM 6809*

#42 CoCo Graphics

GFXDUMP2 Dumps the CoCo graphics display to a line printer VII or compatible. *BASIC 09.6809*

RATMAZE Uses the CoCo graphics to simulate a rat's-eye view of a maze. *C—DYN 6809*

THREE—D—GRAPHICS This program generates 3 dimensional graphics using the CoCo hires screen. It also has routines for disk and printer. *BASIC 09.6809*

#43 System Utilities

DISKEDIT Revised version of diskedit.B09. It allows the examination and modification of disk sectors. (See also dedt) *BASIC 09.6809*

DISPLAYHELP Prepares manual of help files with sorted index. Allows 150 file names. Names are lowercase before sorting. *BASIC 09.6809*

ERRCMD Converts an OS-9 error number into the corresponding English description of the error. *ASM 6809*

ERROR.A Looks up error messages in /d0/sys/errmsgs on demand. *ASM 6809*

ERROR.C Looks up error messages in /d0/sys/errmsgs on demand. *C—MW 6809*

INIZ Attaches a device to the system. Usually placed in "Startup" file to initialize hardware. *ASM 6809*

LINK Similar to microwave "Link" command, except does not abort on error until an attempt is made to link all passed path names. *ASM 6809*

LOAD Similar to microwave "Load" command, except does not abort on error until an attempt is made to load all passed path names. *ASM 6809*

PUTDOS Makes ss or ds disk bootable with RS Disk Basic 1.0 or 1.1. *BASIC 09.6809*

UNLINK Similar to microwave "Unlink" command, except does not abort on error until an attempt is made to unlink all passed path names. *ASM 6809*

#44 Communication (Smod8)

COMM—BAS A smart terminal program that also allows you to send files. *BASIC 09.6809*

SETPARAM—COCO Easy change of deluxe rs232 parameters. *BASIC 09.6809*

SMOD8 Modem program with CIS B protocol support. *C—MW 6809*

#45 CoCo Graphics

MXV Multi file multimachine x y pen plotter driver applications package. *BASIC 09.6809*

#46 Sled

SLED Sled, a screen editor, and the included utilities form a good program editing system. *C—MW 6809*

#47 68k Runoff

RF Nroff style text formatter. *C—MW 68000*

#49 Microemacs

MICROEMACS Text editor. *C—MW 68000*

#50 68k Utilities

BCMP Text or binary file compare program. Simple version. *C—MW 68000*

CAT Unix style file concatenate filter. *C—MW 68000*

CXREF C cross reference and list program. *C—MW 68000*

FSIZE File size display for individual files or files in a directory. *C—MW 68000*

GREG Example of a routine to convert julian date format back to gregorian date format for 68000 OS 9. *C—MW 68000*

ITOA Integer to ascii conversion routine for C on 68000. *ASM 68000*

MAX Return the maximum value for two integers i.e. $I = \max(a, b)$. *ASM 68000*

MIN C function to return the minimum of two integers $I = \min(a, b)$. *ASM 68000*

MORE File list filter for page mode display capability. *C—MW 68000*

MORE1 File list filter for the vt100/vt200 type terminals that provides page mode output. *C—MW 68000*

TIME Time the execution of a command. *C—MW 68000*

#51 68k Utilities

DEFS.C This is a directory of C function library files for use when compiling any of Dave Partington's c-mw. 68000 software. *C—MW 68000*

SECURITY User login and password programs using des encryption technique. *C—MW 68000*

WHO Unix style who and whoami which display users by name from the process directory. *C—MW 68000*

#52 Math & Electronics

ANTENNA Designs amateur radio vhf long wave antennas. *BASIC 09.6809*

BESSEL Calculates the Bessel function of integer order using a new method suited to small computers. High accuracy for large orders. *BASIC 09.6809*

LEQB05 Solves linear, least squares, eigenvalue and non-linear problems by the sing. value decomp method. Very stable numerical meth. *BASIC 09.6809*

MATRIXLIB—1 5 routines for matrices. Input printout add subtract mult and transpose. Matrices are 2 d any size up to 2500 elements. *BASIC 09.6809*

#53 68k Utilities

DATAI0 Remote control interface for a DataI0 program. *C—MW 68000*

HEAD List the contents at the head of a file. *C—MW 68000*

MEM—SAVE Program to save a selected area of memory to a file. *C—MW 68000*

PAGE—SIZE Function for C which returns the page length of an sct path i.e. $\text{page—size}(\text{path—number})$. *C—MW 68000*

PPR Unix style pr command for formatted printing of text files. *C—MW 68000*

RBMODE Xmode utility for rbt type descriptors. *C—MW 68000*

SND—SIG Send a signal to a process. *C—MW 68000*

SPLIT Program to split merged object file into separate module i.e. OS9boot for 68000. *C—MW 68000*

TAB Detab a text file. *C—MW 68000*

TAIL Display the tail of a text file. *C—MW 68000*

#54 File Maintenance

HCOVER Creates a disk cover (jacket) in YGS 2 pocket style, with hierarchal disk info and file position right on hand. *BASIC 09.6809*

HDIR.C Provides a hierarchal display of directories. Options: full path, file details, no subdirectories, exec path and directory files only. *C—INTRCH 6809*

HEAD.09 Lists a specified number of lines from the front of a file(s) which can be on the command line or std in. *C—MW 6809*

NDSAVE Simple hand-holding dsave. *MISC 6809*

SHDIR A filter for the mdir c command. *ASM 6809*

TAIL.09 Lists a specified number of lines from the end of a file(s), from a list on the command line or std in. *C—MW 6809*

ULDIR Uppercase all directory names and lowercase all non directory names. *BASIC 09.6809*

#55 QED

FLEXBIN.B Converts "Flex-format" (compressed) binary files into full image (full size, position dependent) binary files, ready to "Rom". *BASIC 09.6809*

QED Line editor that is compatible with the Unix line editor. *C—MW 6809*

#56 SDB

SDB Small data base manager. *C—MW 6809*

OS-9 USERS GROUP DISK ORDER FORM (Members of the OS-9 Users Group ONLY)

PLEASE ALLOW 6 WEEKS BEFORE INQUIRING
ABOUT YOUR ORDER

FROM Member Number: _____

Name:
Address:
City:
State, Zip:
Telephone Number(s):

		FORMAT	PRICE	
Qty	Volume #	Type Code**	Each**	Total

ARCHIVE SET (format A6 only):

	ARCHIVE	A	6	\$100	
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TOTAL

Note: the Archive Set is not Color Computer Compatible

** Note: Information indicated by a "*" above should be taken from the current UG Library Volumes listing, as reproduced in the

MOTD

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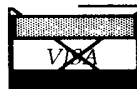
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Mail To The OS9 Users Group with



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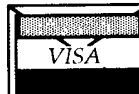
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Murphy's Law - Pipes for the Needy

While over at Jerry's one afternoon, I took a look at his CMDS directory on the hard drive, "Newest Critter", which Jerry was about to run DSORT on.

He was getting ready to rename a bunch of files so that the ICONS directory would be first in the directory, followed by the rest of the programs in alphabetical order. To save him some time, I ran a quick line past him and renamed the files in question in one pass, easy enough to do when they all begin with the same letter. When I did that, Jerry remarked that he'd seen me do similar lines, but when he'd try them, they wouldn't work so great. It sounded like the gist of another article to me. Time now for a couple of laws that I tend to live by:

Pittsinger's First Law: Use what you've got. Why bother to waste the time to re-engineer the wheel?

Pittsinger's Second Law: Don't be afraid to experiment, it might teach you something that will keep you from having to re-engineer the wheel.

With the First Law in mind, I typed in the following command line. I'll explain the mechanics in a minute:

```
ls w*! lower! call rename $ $! shell t
```

LS is a formatted directory command found just about anywhere you'd think of looking. I sometimes think everybody writes a version of their own, just to keep their hand in. What it does is access the directory, then list all the names out, one per line. The command can be specific, as the "w*" shows. What I told LS to do is list out, one line at a time, any file names that start with "w" or "W", since LS isn't too particular about capitalized or lowercase letters. Since the filenames in question all started with a W, why waste time renaming every file in the directory?

The list, known as the output of LS, is as below:

```
wc
wcreate
wiz
wmode
```

```
Wizpro
Wizutils
Wizconfig
Wizauto
Wizclipper
Wpxmod
Wizfhl
Wizdraw
Wizquit
Wizsend
Wizequates
Wizhelp
```

From there, we take this listing and PIPE it to the next command, LOWER. Lower is another one of those utilities that just about everybody and his brother writes a version of, sooner or later. What it does is change every uppercase letter to a lower case letter. I wanted to do this so that the files would sort out correctly, following the guideline that only directories should be capitalized.

From there, we use a program named CALL, which is a real time-saver. What call does is repeatedly run what ever program you specify after it, in this case, RENAME. You pass the parameters the normal way. Since the file to be renamed changes each time CALL takes another line of input from LOWER, you use the metacharacter "\$" to stand in for the name on the command line. Call takes this metacharacter and substitutes the name of the file to be renamed, then passes it to rename, which gets set to do the work.

Notice we piped the output of rename to SHELL. When using CALL you have to either pipe it to a shell, or else direct it to a file name, depending on whether you want it done now, or are saving the file to be used as a procedure or script in the future. Since I didn't need a script file, I told call to just do it and be done with it. In order to keep track of what was going on, I specified the "t" option of shell, which tells shell to "t"ell us what it's up to.

You can use just about ANY command that takes its input from stdin as a filter (OS9speak for a program that uses another program's output as its input), up to the limits of your memory, or the length of

your command line, whichever fills up first. Before we had the DSORT utility, we had to do things the hard way:

```
mkdir $
```

```
chd cmds
```

```
ls !sort! mv -l.../s
```

```
deldir cmds;rename s CMD$
```

Rather straightforward, but a waste of time, actually, and there was no real way to sort out the root directory.

Other examples of Pipes for the Needy are lines like the following:

This one will make you a new boot file the easy way. You can change the "chd" to a regular disc drive or directory to save the modules permanently. Likewise, change the "/dd" to whatever drive you're pulling the old bootfile off:

```
chd /r0;modbuster /dd/os9boot
```

*now do whatever you need to do to the listing, such as add more modules, *delete old ones and recopy new ones in their place `ls !os9gen /d0` If you just want to copy a similar-sized bootfile AND are using Shell+ on your CoCo 3, you might be interested in this one AFTER you kill off the old OS9Boot on /D0:

```
ls ! call "merge $ >+/d0/os9boot" ! shell t
```

Since OS9GEN or COBBLER place the kernel on the disc, and put OS9Boot in the root directory, it should boot, assuming that you have a minimum of SHELL and GRFDRV in a CMD\$ directory on that disc. Remember, DEL frees up the space on the disc for re-assignment on a first-come, first-served basis, and when you MERGE a new bootfile back onto the disc, it will just replace the one you deleted. The kernel already points to the sectors that OS9boot lives in.

This is a quick and dirty way of adding VDGInt and Windint to your Level 2 boot, saving you 8K if you want to use a window as a VDG device. You won't need GRFInt if you

Murphy's Law Revisited, or, Happiness Is an XT-ROM

use WindInt, by the way, as GRFInt is a subset of WindInt.

Modbuster is from D.P. Johnson's Sdisk package that I got when I was getting into Level 1. Works fine under Level 2.

Or:

ls ! call "attr \$e" ! shell t

This one will set the "Executable" attribute of every file in the directory.

One that we use a LOT is in the original Rainbow Guide to OS9, page 160:

dsave -s56 /d0 ! (chd /d1)

As you can see, pipes can do a LOT of useful things. There's one for just about every need, for all of us who are "needy" of them.

Keven R. Pittsinger

Happiness Is....

When we last left you, we had just finished installing a Burke and Burke XT-RTC Hard Drive Interface and 20 megabyte hard drive. Murphy's Law had had it in for us (see MOTD March/April '88, pg 20 "Murphy's Law"), but seemed about to go on vacation. Jerry was wondering what to do now, since he was now down to less than 50,000 free sectors on the hard drive.

Since we hadn't planned on getting an XT-ROM, we loaded the hard drive kind of willy-nilly. We set up something like 20 directories in the root, like CMD5, SYS, USR, MISC, along with a couple special ones like GENIE, CFN (the UNIX system that hosts our Tandy Special Interest Group), EXPER (for Keven's experimental stuff), and WX (for Jerry's ham radio weather reports). We kept dumping commands into CMD5 until there were over 300 programs

in that directory.

One of the biggest mistakes we made when setting it up originally was having the SAS (sector allocation size) set for \$20! This meant that any time OS9 started a new file on the hard disc, it automagically reserved a whole track for it. While this is okay for a massive directory like CMD5, 32 sectors for a startup file is a bit ridiculous. In the current (and we hope, saner) revision of the hard drive, the SAS is set for 5. This holds down disc fragmentation, and lets OS9 use those 78K+ sectors more efficiently. A hint we got from Bill Brady was to format the drive using the SAS of 5, then when we were ready to start a CMD5 directory, use Kevin Darling's DMODE utility to set the SAS to \$20. With over 300 utilities in CMD5, the drive could read the directory without having to go all over the disc. Another idea is to have Pete Lyall's MKDIR utility on a floppy somewhere, load it, and create all your directories at one shot, since this utility allows you to set the limits on the number of files that directory will hold. We as yet haven't recieved MKDIR, so we did it the hard way with DMODE.

This article started when Jerry went to the Chicago Rainbowfest this year. We were still playing around with various things such as more windows (created using dEd, Keven's favorite disc editor), optimised hard drive descriptors and drivers, and a ton of miscellaneous programs we've received in the mail recently. Keven was experimenting with new bootfiles, and having a rough go of it. He kept getting "Boot Failed" on just about every disc he tried cobbling, OS9genning, or merging and BOOTLINKing. More on that in a minute...

Jerry picked up the latest revision of the XT-RTC software along with an XT-ROM. The package included version 2.2 of the ROM, the 2.2 software utilities to use it, a resistor, and a manual (Version 1.0, unfortunately). The current revision has the capability to have a pair of kernels on the hard drive in case you want to boot up in, say Level 1 Version 2.00.00 OS9 to use TSWord or some of the software that just won't work well

under Level 2.

Our WD-1002-WX1 controller had the BIOS ROM soldered in, so the first thing we did when Jerry brought the package home was to desolder it, pull it out, and solder in a 28 pin socket. This is NOT recommended unless you have PLENTY of experience with printed circuit boards AND the proper set of tools. We in no way will bear responsibility for any errors made in this procedure. We reassembled the hardware and gave it a "smoke test". We didn't lose any smoke in the upgrade.

Using the TagTrack utility included with the XT-ROM package, we discovered that there were a couple of text files and a binary file or two written where the new kernel was supposed to go, on Track 128 of the hard drive. While the included utilities would have allowed us to move the files off Track 128, Jerry decided to save every directory off onto floppies and then reformatted the hard drive. He followed the directions in the XT-ROM manual and placed the kernel onto the hard drive at the proper place. He then started copying the directories back off the floppies and tried rebooting. It didn't quite work.

At this point I must mention that Jerry had been awake for over 35 hours.

Keven came over after he got off work, and immediately called up dEd to look at the new kernel. It was the wrong one. He called up the patch routines to patch the kernel, and cobbled a new disc like the manual said to do. He then tried BootPort, the B&B program that would transfer the kernel over to the hard drive. Bootport notified him that a kernel was already in place, and refused to copy the new one over. Keven said a few deleted expletives, and reformatted the hard drive. Since it had already been physically formatted and verified, he only did a logical format. Bootport worked okay this time, copying over both the kernel and the latest bootfile.

Upon further reading of the manu-

al, Keven found out that he could have used TagTrack to mark off the kernel so that it coul^d be overwritten using the following commands:

```
tagtrack /h0 128
del /h0/tag000
```

TagTrack rearranges the allocation map of the disc (hard OR soft) so that the track number you specify will seemingly be in use, just like a normal file, and it gives this phantom file the name of "tag000". When you delete tag000 using del, it frees those sectors for reuse, updating the allocation map as it does that, just as if it were a normal file.

Keven then put a minimum CMDS directory on it, placing SHELL and GRFDRV in it, and powered down. Following directions, he set the Multipak to Slot 3, and powered back up. The Burke and Burke XT-ROM logo came on, the machine did a 512k memory test, then booted. However, it still accessed Drive 0. Out came dEd again, and a quick phone call to Chris Burke confirmed what Keven was suspecting.

It seems that the INIT module is hard coded to look at /D0/CMDS for both Shell and Grfdrv when booting Level 2. This is the ONLY place it's hardcoded. You can patch it at offset \$20 and \$21 for /H0, or do what Keven did-- change the call from /D0 to /DD so it will work on anything. Since /DD was set to look like the hard drive, this was the way to go. Besides, it followed the rules a bit better. If you're using dEd, the byte to change is \$21 in INIT. Change it from \$B0 to \$C4, write it back to the disc, and verify it. Or use the following Modpatch script:

```
modpatch -s
l init
c 21 b0 c4
v
```

Follow with the following command lines to make a working bootfile on a blank disc on /D0, then copy it over to the hard drive:

```
cobbler /d0
del /h0/os9boot
copy #56k /d0/os9boot os9boot
bootlink os9boot
```

This was the problem that Keven was having getting those new bootfiles to work. He assumed that OS9

called Shell and Grfdrv off /H0 instead of /D0. When we put those minimum CMDS directories on the "unusable" bootfiles, they worked fine. At the end of booting, INIT switches the default directories to /H0 and /H0/CMDS, and then goes into startup.

We LIKE our new XT-ROM, but are not too fond of the manual. The documentation is written for someone who has a good bit of experience with OS9. It is NOT recommended for a beginner. If you want a hard drive system, the Burke and Burke package is recommended. If you intend to EVER get the XT-ROM, hold off until you can get both the XT-RTC and the XT-ROM at the same time. And if you are not sure what you're doing, follow Pournelle's Law: "If you don't know what you're doing, deal with someone who DOES!"

We here have found happiness. It is spelled XT-ROM.

*Jerry Murphy (Genie HAMRADIO,
CFN aa300)*
Keven R. Pittsinger (CFN aa253)

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Subbattle Sim to Hard Disk

by Kevin Darling

You can put a shell script in your CMDS dir that is called by the AIF to start a VDG screen and the program, if you're using shell+.

Here's my hard disk layout:

```
dir /dd/games/sub:
CMDS                fonts.dat
missions.dat        substats.dat
status.dat          sub6
stitle.pic           radar.dat
mission.txt          shipmap2.dat
convoys.dat          sintbl.dat
hiscore.dat          diesel.dat
controll1.cmp        usamap.cmp
sub.dat              germap.cmp
```

```
dir /dd/games/sub/cmds:
sub                  sub1
sub2                 sub3
sub4                 sub5

list /dd/cmds/subbattle:
echo Starting Sub Battle in Win-
dow 15
xmode /w15 type=1;display c >/w15
chd /dd/games
chx /dd/games/sub/cmds;ex sub
<>>>/w15
```

Pete found out, don't even use stuff off side one.



Use sub off side 2, etc.

Kevin

Anyone for including 'clip art' in the MOTD? or should we be all business? Let us know! Pict above clipped from "Nagel 85", by special request!

Make Your Wishes Known

Please Fill in the following POLL, and mail to: 8009 Longwood St. Denham Springs LA 70726

OS9 USERS GROUP POLL**I. Personal Information**

Age ____ Sex ____ Years of OS-9 experience ____
 Years of computer experience ____
 Do you use computers at work? (y or n) ____ if yes,
 a. What type of computer do you use?
 (PC, Mini, Main Frame) _____
 b. What operating system does it use? _____
 Are you a computer professional? Yes ____ No ____
 How many computers do you own? ____
 How many run OS-9? ____
 Do you subscribe to a computer information service?
 -if yes, list in order of preference
 a. _____
 b. _____
 c. _____
 d. _____
 e. _____
 How long have you been a member of the OS-9 UG? ____ yrs

II. Computer Hardware owned**A. COMPUTER 1 :**

Make _____
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 Ram ____ k #Serial ports ____ #Parallel ports ____
 Real time clock (y or n) ____ # Terminals ____

FLOPPY DISKS
 /D0 size ____ inches # sides ____ # tracks ____
 /D1 size ____ inches # sides ____ # tracks ____
 /D2 size ____ inches # sides ____ # tracks ____
 /D3 size ____ inches # sides ____ # tracks ____

PRINTERS
 Make _____
 Model _____
 DMP ____ DWP ____ Laser ____ Ink Jet ____ Pen Plotter ____
 Carriage/Paper width ____ in. Speed ____ cps/wpm
 Interface (Ser or Para) ____ Ram ____ k Post Script ____
 Make _____
 Model _____
 DMP ____ DWP ____ Laser ____ Ink Jet ____ Pen Plotter ____
 Carriage/Paper width ____ in. Speed ____ cps/wpm
 Interface (Ser or Para) ____ Ram ____ k Post Script ____

MODEM Make _____
 Model _____ Baud _____

B. COMPUTER 2 :

Make _____
 Model _____
 OS9 Level I ____ OS9 Level II ____ OS9 68000 ____
 Ram ____ k #Serial ports ____ #Parallel ports ____
 Real time clock (y or n) ____ # Terminals ____

FLOPPY DISKS
 /D0 size ____ inches # sides ____ # tracks ____
 /D1 size ____ inches # sides ____ # tracks ____
 /D2 size ____ inches # sides ____ # tracks ____
 /D3 size ____ inches # sides ____ # tracks ____

PRINTERS
 Make _____
 Model _____
 DMP ____ DWP ____ Laser ____ Ink Jet ____ Pen Plotter ____
 Carriage/Paper width ____ in. Speed ____ cps/wpm
 Interface (Ser or Para) ____ Ram ____ k Post Script ____
 Make _____
 Model _____
 DMP ____ DWP ____ Laser ____ Ink Jet ____ Pen Plotter ____
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 Interface (Ser or Para) ____ Ram ____ k Post Script ____

MODEM Make _____
 Model _____ Baud _____

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 3. Evaluate: Good ___ Fair ___ Poor ___
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 evaluate: Good ___ Fair ___ Poor ___
 I. Do you own Color Computer Artist? (y or n) ___
 if yes, evaluate: Good ___ Fair ___ Poor ___
 J. Do you own Deskmate? (y or n) ___ if yes,
 evaluate: Good ___ Fair ___ Poor ___
 K. Do you own Home Publisher? (y or n) ___ if yes,
 evaluate: Good ___ Fair ___ Poor ___
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 O. What coco specific OS-9 software would you like
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_____	m ___ v ___ i ___ n ___
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MicroWorld.....	Excel ___ Good ___ Fair ___ Poor ___
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Second City Software.....	Excel ___ Good ___ Fair ___ Poor ___
Softworks Limited.....	Excel ___ Good ___ Fair ___ Poor ___
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Sorry that we still don't have that Home Publisher Review for you, we are waiting to get some examples that we can print.

Wiz Pro is in Alpha testing, and OS-9 folks are working on several extensions, including VT-100, Ymodem, and Delphi Auto-pilot.

The OS9 Users Group....

The OS-9 Users Group is an international non-profit organization of approximately 800 members (and growing) devoted to exchanging and distributing information about, and public domain software for, all available versions of the OS-9 Operating system. The OS-9 Users Group is the only independent group officially recognized by Microware (the developers of OS-9) as an official voice of its users.

The OS-9 Users Group periodically publishes a newsletter entitled "MOTD" which contains many useful articles, software listings, and other information helpful in keeping OS-9 computing enjoyable and rewarding. Other membership benefits include free technical help referrals (by mail or electronic BBS) and significant discounts on the purchase of individual volumes of the OS-9 Users Group Public Domain Software Library. One year memberships in the group cost \$25.00 for individuals and \$150 for companies (corporate membership) and includes a subscription to the MOTD newsletter, one free disk of public domain software (archive set of entire Library for corporate members), and the right to purchase additional disks of software at a very reasonable cost. The group's public domain software library currently has over 56 individual volumes of software comprised of almost 300 individual programs. The library is constantly growing due to the group's policy of sending one volume (disk) from the library free for each individual program donated by a member. (note, although UG software is available from other sources, only MEMBERS receive the latest, and librarian maintained versions).

To join the OS-9 Users Group, fill out the application form reproduced on page 15 (or facsimile thereof) and send to the UG Tampa address.

Visa and Master Card are accepted.

After you join, you will receive a copy of the current issue of the OS-9 Users Group newsletter ("MOTD"), and soon after that, the "starter" diskette, UG Library Volume #0, with software of the type useful in getting you started with both OS9 and the Users Group. Current members who renew their membership will receive a UG "donation credit" post card, which may be redeemed for most UG products and services at any time during your membership.

This issue of the MOTD was produced using RSG4 on a 2 meg Macintosh Plus. Mastering was done on a General Computers Personal Laser Printer. Original artwork done with CANVAS. (Jane did the Foxware ad from scratch). Scans done via ThunderScan, and touch up in CANVAS. Drawings were done in MacDraft, Cricket Draw, and CANVAS. Graphics placed from TIFF and PICT formats. All work done by Bill Brady & Jane Larivée- PHEW!

Preliminary Report The HCA/WD by Bill Brady

My critics will note that amongst my many faults is the seeming inability to follow my own advice. Well, I've done it again...sorta.

I usually recommend that users buy a pre-packaged Hard Disk Adapter/Interface/Disk/Case-P.S. with drivers. I did this a long time ago with the OwlWare/LR Tech package, and have never been sorry that I did.

Recently, however, I decided to give Mr. Isted's system a try. I called FHL and asked Frank to send me a copy of the 'kit', which includes Bruce's drivers, the HCA adapter, and a WD-1002-05G controller.

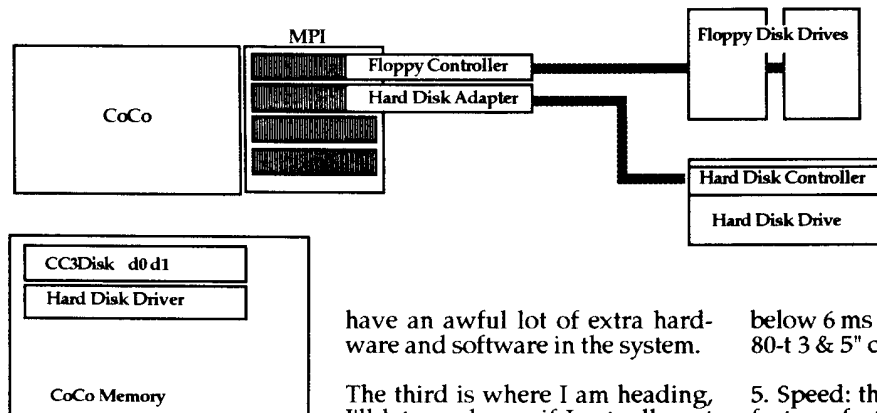
In this column, I won't yet tell the story any further, its not complete yet. What I will do is tell you what I have 'discovered' about Bruce's idea, and what it really means for users.

The HCA/WD package should not be thought of as a harddisk that one adds to the CoCo. No, it is far more; it is an 'I/O system' that takes a back seat to none other, on any computer! This is my discovery!

Included here are three drawings. The first could be considered a 'standard' configuration, and is about what I started with.

The second is kind of 'everything but the kitchen sink', and it works, but you

So should you? Well, here are the advantages so far:



have an awful lot of extra hardware and software in the system.

The third is where I am heading, I'll let you know if I actually get there, but note that you can end up with 2 hard disks, and 4 floppies, yet with less software in the system space,

1. Less hardware, you may even be able to get rid of the MPI.

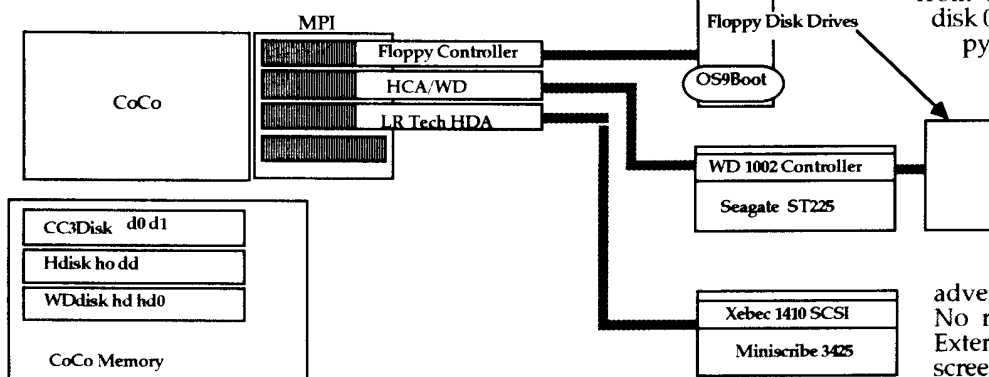
2. Less Software in precious system space. (WDdisk handles both Hard and Floppy disks.

3. Speed: No halt floppy operation.

4. Speed: Step floppies below 6 ms if they can go that fast. (most 80-t 3 & 5" can).

5. Speed: the HCA/WD is very fast, in fact, as fast as my Mega with the Supra/MiniScribe, or at least it would take a stopwatch to measure the diff.

6. Booting: you can boot from anywhere, hard disk 0 or 1, or any floppy.



Disadvantages:

1. The boot ROM don't advertise its presence. No reassuring "Disk Extended Color Basic" screen.

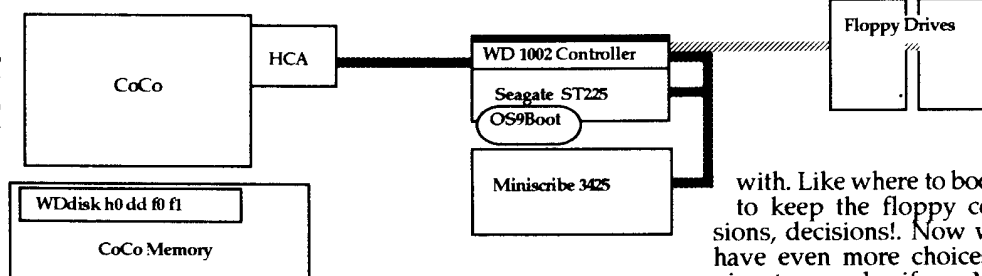
2. To use the full configuration, you must give up CoCo DOS. At least for now. (a real toughie??).

and less hardware all over your desk.

Note that you COULD have 7 floppies if you kept the Floppy controller and

3. You may have a hard time deciding what configuration you want to end up

with. Like where to boot from, whether to keep the floppy controller. decisions, decisions! Now we CoCo users have even more choices. I am beginning to wonder if my Mega will ever steal the 'main frame' role away from my CoCo! -Stay Tuned!



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MESSAGE OF THE DAY

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