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MOTD

The International Newsletter of the OS-9 Users Group March/April 1988

We're on a roll! by David L. Kaleita

What's this? A second issue of the MOTD in THE SAME YEAR?? Yes, as incredible as it may seem, this is the first time the UG has printed more than one issue of the newsletter in the same year since 1986. Although it isn't something to be particularly proud of, it is at least an indication that members and advertisers are not quite ready to write the UG off. Since the last issue of MOTD was mailed earlier this year, we have had over 50 new and another 50 renewal memberships come in. Accordingly, we have been able to pay a couple of bills and finance this latest issue of the newsletter. Now if EVERYONE who was due to renew their membership at this time did so, we might just be able to get a few more issues out yet this year. Take a good look at the great stuff we've put together for you in this issue and see if you don't agree with me that the UG is definitely a worthwhile investment! If you want to help keep this ball rolling, please send your new or renewal membership dues in now!

ELECTION RESULTS ARE IN

As announced in the last issue of the MOTD, the OS-9 Users Group officer elections were held by mail earlier this year. And guess what. All candidates won by UNANIMOUS VOTE! Don't get too excited, though, as everyone running was doing so unopposed. The only new officer we have to announce at this time is George Dorner, who is returning to the office of Treasurer he held in the UG's early years. Welcome back, George! We missed you!

I'm not going to be my usual long-winded self in this column this month, as I have already done that in my article on the Atari ST elsewhere in this issue. Although I really think this is the best issue of the MOTD yet, we have a lot more stuff ready to go for upcoming issues. This is getting pretty exciting, ain't it! Stay tuned.

"I'm not going to be my usual long-winded self in this column..."

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From The Editor

By Golly, it's starting to happen! Not only is the UG starting to get it together, but OS-9 is humming! People are finally becoming aware of real multi-tasking, multi-user capabilities, and the jig is up for the "simulators" like Multi-Finder, and "Windows". Demonstrations like the Color Computer running Flight Sim II in one window while running Wiz, DynaStar in other windows is beginning to get attention. But the killer is when the OS9'er spontaneously flips to yet another window, and runs yet another program! Then, we fire up a terminal and logon..... and run DynaStar yet again! (and the 'terminal' is a Macintosh no less. phew!).

BYPASSING. An interesting thing happens as we grow and learn in the world of using computers. I call it 'bypassing'. It's not always good, nor always bad. For example, we first learn to use line editors, then graduate to full screen, but text only types. (like DynaStar). Next we discover WYSIWYG, and things like mice & trackballs. Today, the biggie is the page layout program. A page layout program lets you draw "blocks" of text or graphics on a "page", and then place, paste, or load chunks of text into the blocks. Now the funny thing about it is that what works best for supplying the 'chunks' is not the WYSIWYG fancy pants word processor... nope, you guessed it, it's the old plain text line or screen editor! So now you can 'bypass' wishing for that WYSIWYG program, just go right to the page layout program. Keep your old editor for making text. (Page layout programs *ARE* WYSIWYG).

Now for another example: **user interfaces.** Here we are on the Color Computer struggling to get the ball rolling with our Multi-Vue graphics interface, while, over in the Mac and Atari worlds, they are struggling to get a shell! Many Mac users now use programs like OASIS that allow you to design your own menu of buttons which when 'pushed' take you straight to the application, complete with filename parameter. The whole thing "bypasses" Finder altogether. (BTW, we already have our own 'OASIS', see OS-9boots...)

Articles Wanted! We need short pieces such as "How to make flight sim run from hard disk" on page 7. You don't have to be a technical expert to write these, just share with us the steps that YOU took.

FLASH! If your membership expired you missed out on $100's in potential savings, see Page 3

Letters to The Editor

Caveat Emptor (or let the buyer beware)
by Robert Ver Duin

Occasionally you meet someone who has the knack for telling a good story. I have a friend with just such an ability so it was no accident that I listened carefully the other day as he proceeded to tell about a recent experience with his small son. It seems that his son had gone shopping with mother that day, making the rounds of a number of garage and yard sales that seem so popular these days. When Dad came home that night he was greeted with great enthusiasm as the small boy showed him what seemed to be the buy of a lifetime, an original authentic scale model of a Harley Davidson motorcycle, complete with numerous accessories and decals. Still excited about his purchase the small boy, who had never assembled a model before, asked if Dad could help. Well, we all know that even if the yard needs work and the garage door sticks and needs repairs and the new program you've been waiting for has just arrived, the bright-eyed enthusiasm of a small boy about a new found treasure can not be ignored.

So, after dinner, father and son went into the den, pushed back the manuals, books , instructions, notes, and even the computer to clear a spot for this special project. Fortunately, Mother had the foresight to purchase a tube of model glue. (What would we do without mothers!) As the box was opened for the first time it was hard to tell who was more excited, father or son. After the parts were spread out on the work area, Dad asked for the directions. "What directions?" inquired the boy. "The directions that come with all model kits" the father explained. The moment of truth had arrived as Dad quickly realized why the model had sold at the sale for only 10 cents. My friend went on to explain that they worked well into the evening assembling parts and had, by trial and error, assembled what could, with a little imagination, be called a model motorcycle.

My friend explains that what was really needed that evening was the collective wisdom of a number of accomplished model makers to have created the real thing without instructions. And so, with several extra parts and hands full of glue, the project was at least finished.

"Have you gone shopping for models lately?" my friend asked. "You know that they get from between $4.00 and $5.00 for a model like the one my son bought for 10 cents". He went into detail explaining that he had concluded that the total value of all the parts in any model kit must be worth exactly what they had paid, 10 cents. It is the directions that are worth $4.90.

As he told the story, I couldn't help but draw some interesting parallels between his recent experience and the purchasing of some software I have acquired in the last several years. I have been convinced for some time now that the vast majority of documentation sent with software has received little or no attention, or has been written by the programmer who is so familiar with his product that he skipped over some of the more important information that a new user must have to get the full use out of the product. Last year I invested in a program that costs in the neighborhood of $500.00, the single most expensive program that I had purchased to that date. When it arrived, I was impressed with the potential the software offered, but was very disappointed in the less than professional documentation that accompanied it. Several months later I was offered an update with a new manual and paid another $370.00, plus shipping and handling. Although the software had some valuable enhancements, it was the manual that was the major improvement. In fact, I am inclined to believe that the documentation received with the update is what I paid for the first time around. Can you imagine my surprise when I found out that the software support hotline was on the other side of the Atlantic.

And then there's those famous 30, 60, and 90 day free software support service offers which cannot be used as "a substitute for proper study". By the time you have installed the software and worked your way through the documentation to become familiar with your new purchase and you really need the "free" support, the time limit has conveniently expired. In addition, the Hot Line phone is always busy to the extent that an automatic dialing attachment to your phone system becomes a necessity just to get through. In all fairness to the software developer, they do offer an extension to the 90 days, for a fee. Having never taken advantage of such a generous offer I can only assume that the same conditions mentioned above, including the busy line, apply as before.

Then let this be an open letter to software developers and vendors and a warning to buyers; that it is time for the industry to get its act together and produce documentation that fully supports those super programs that are advertised in such glowing terms in multi-colored glossy brochures. It is somewhat disappointing to find that, unlike the glossy brochure, the manual looks like something produced on a second-hand copier and does not even include an index. But it isn't even the quality of printing, but the content that I am concerned about. Although I am not a beginner, I am not accomplished to the extent that I can read between the lines. On more than one occassion, after spending hours trying to produce results with "User Friendly" software, I was convinced that I would never be a user and if I met the writer of the manual I would find it difficult to be friendly.

At this point there is a strong temptation to try to put together a description of what the perfect documentation package would include. Although I have a number of ideas based on some very bad experiences, I am inclined to end here with a challenge to the members of the OS9 Users Group to send their suggestions to MOTD. With the combined talents of all our members, it is conceivable that we just might be able to create the guidelines for software documentation that could become the standard for the industry.

18 February 1988

W. L. Brady
1583-I Flanders Lane
Harwood, MD 20776

Editor OS-9 MOTD:

Its about time we started using the low cost way of publishing the MOTD. Very good looking edition for January 1988.

I would like to make a suggestion for all members that are 9 months or less left in their membership to renew in the next month or so This way the OS-9 UG Officers will have a balance to operate from it would also be a vote of confidence for the officers who stuck it out and now have us back on the track.

Please put this letter in the next MOTD

Regards, Phil

Phil Chadwick 02158

Editors Note: Phil how is this for "puting it in"? Your sentiments reflect those of a great number of the letters received since the January/February MOTD was mailed. I look foward to hearing from you again, but I have a tip for you: a little WD-40 sprayed on that ribbon will make it nearly as good as new!

Frank Hogg Laboratory, Inc.
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Syracuse New York 13203
315/474-7856

To: All OS-9 User Group Members

Subject: SALE to reduce the OS-9 User Group Debt!

As many of you know the UG is in debt. The UG needs our help.

The best way to help is for you to join or renew your membership in the UG. Nothing is better than dues paying members. Remember that without the UG none of that fantastic FREE software would be available. For that matter, where else but in the MOTD can you get unbiased information about OS-9 products. The UG is important to us all and we all need to support it.

As the largest supplier of OS-9 based products, we at FHL felt that we needed to help in whatever way we could to get the UG back on it's feet. We are going to donate the profit from the sale of these selected products to the UG. They are listed below. To further encourage you to join/renew the UG, we are only going to offer these items to paid members of the UG.

So here's your chance to get a good deal and help the UG at the same time. But remember you have to be a current member.

Thank You
Frank Hogg
President FHL

Sculptor for 6809 OS-9 (CoCo)	List $450	**Sale $149**	UG gets **$30**
Sculptor for MS-DOS	List $595	**Sale $149**	UG gets **$30**
Sculptor for OS-9/68K	List $995	**Sale $295**	UG gets **$60**
DynaStar for CoCo/6809 OS-9	List $150	**Sale $100**	UG gets **$20**
DynaStar for OS-9/68K	List $400	**Sale $200**	UG gets **$40**
The Wiz for CoCo OS-9	List $79.95	**Sale $70**	UG gets **$15**
Inside OS-9 Level II book	List $39.95	**Sale $25**	UG gets **$5**
QT 00x 68000 computer w/30 Meg HD	List $2995	**Sale $2900**	UG gets **$100**
QT 20x 68020 computer w/30 Meg HD	List $3695	**Sale $3500**	UG gets **$200**

The fine print: The sale is limited to current members of the OS-9 Users Group. The sale ends May 31, 1988. **To order:** Include your name and UG member number. Payment may be made via VISA M/C or check etc. Price does not include shipping or any taxes. You may order by phone. The sale is limited to the above items. You pay the sale price, we send the UG the profit. Everybody wins!

I ran OS-9 on a Mega ST and lived to tell about it! by David Kaleita

As you may or may not know, I am not a TRS-80 Color Computer owner. In fact, I never have been and probably never will be. Now don't get me wrong, I really LIKE the CoCo3. It's just that the CoCo won't run my favorite operating system: OS-9/68000.

OS-9/68000 is quite different from OS-9/6809, such as the version sold by Tandy for the Color Computers. In particular, OS-9/68000 takes the concept of a powerful multi-user multi-tasking programming environment introduced in OS-9/6809 to the maximum. OS-9/68000 is quite simply one of most complex, powerful, fast, memory efficient, flexible, expandable and adaptable operating systems available for any computer system anywhere. Although the core of its operation is very similar to OS-9/6809, every individual element is considerably more powerful and flexible than its equivalent 6809 counterpart (except, unfortunately, for the windows and graphics stuff). This includes all of the drivers, file managers, and utilities (including the shell).

"... OS-9/68000 takes the concept of a powerful multi-user multi-tasking programming environment introduced in OS-9/6809 to the maximum"

Now, OS-9/68000 is not for everyone. If you are heavily into graphics or music applications and don't want to completely write your own custom software, OS-9/68000 has not yet arrived for you. And if you are heavily reliant on windows and mice, OS-9/68000 is definitely not for you, at least not yet (more on this later). OS-9/68000 is for the serious systems programmer who wants to build a complex bullet-proof multi-tasking (and/or multi-user) programming environment capable of supporting a large number of simultaneous speed and memory hungry applications. It is an alternative to small and medium size mainframe systems, and most all of the newer multi-tasking personal computers in the IBM world. In fact, if it wasn't for the fact OS/2 will have an incredible amount of good application software available for it, a computer running OS-9/68000 would actually be a much better choice for a small office than, say, an IBM model 80 running OS/2. In fact, if you plan to write all your own applications software, an OS-9/68000 system is a MUCH better choice than an OS/2 one hands down. If all you plan to do is buy applications software and run it unmodified, on your system, then you should pick the software FIRST, and then choose the machine which will run it; depending on your specific uses, you will probably end up buying an IBM (or clone thereof) or an Apple MacIntosh. Or will you...?

Enter the ST

Guess what. With the appropriate (and available) hardware and/or software addons, the Atari ST computers can run IBM PC software, Apple MacIntosh software or OS-9/68000! In my mind, this should make the Atari ST the computer of choice for those who can't decide which one to buy. And luckily, the OS-9/68000 implementation available for it is a good one. For an OS-9 environment, however, the 520ST and 1040ST computers have some serious deficiencies. These include the fact that there is only one serial port, and no read/write expansion bus available. In addition, OS-9/68000 doesn't really begin to shine until you have AT LEAST a megabyte of RAM available (the 520ST only contains 512K RAM and the 1040ST contains 1024K). It was for those reasons that until a few weeks ago, I used Hazelwood UniQuad (the computer board inside most of FHL's "QT" products) and Helix computer systems exclusively.

Enter the Mega ST

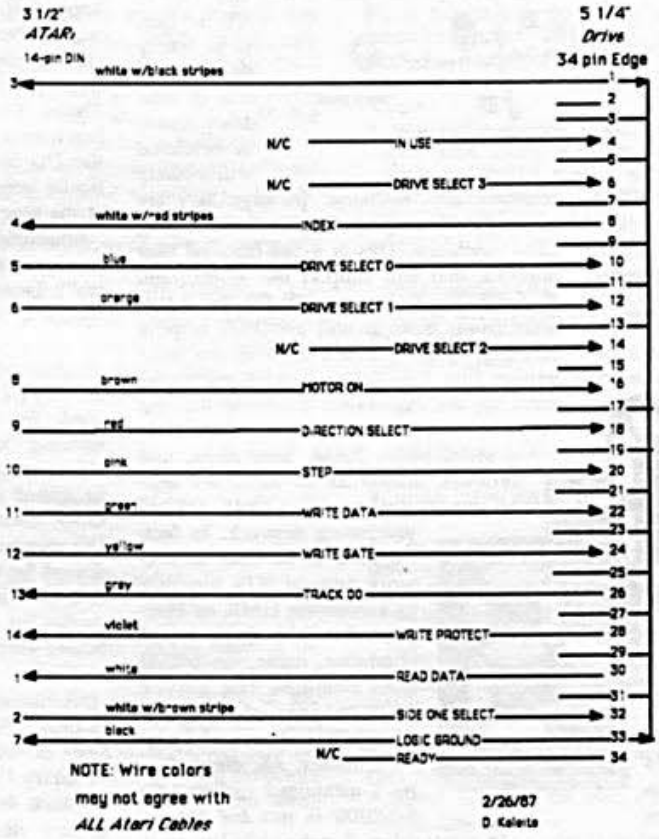
Atari's new "Mega" series ST computers are very similar to the smaller (and less expensive) 520ST and 1040ST. The new system is presently available in two configurations: the Mega ST2 and the Mega ST4, the only difference being the amount of included RAM is 2MB and 4MB respectively. The primary differences between the smaller STs and the new Mega STs (besides the amount of RAM) are that the Megas have 1) a detached keyboard with a MUCH improved feel over the 520 and 1040, 2) the Mega has an internal battery-backed clock/calendar, 3) the Mega has a (very quiet) built-in cooling fan, and 4) the Mega has a full blown expansion bus connector that will allow the future addition of virtually any type of hardware that developers care to imagine. So although the Mega still comes with only one serial port, it is now possible to hang on a (yet unavailable) expansion bus and add as many ports as you desire. In fact, this expansion port adds the future possibility of implementing a true local area network between machines.

So I bought an Atari Mega ST2 and OS-9/ST. In fact, this is the first "take it home, plug it in, turn it on and IT WORKS" computer I have ever owned. All of my previous computer systems had boards to insert, disk drives to mount, switches to configure, cables to make, terminals to connect and software to install before it would do anything meaningful. What a relief it was to see drives spinning and colors on the screen 3 minutes after pulling the Mega out of the box. The first thing I tried (of course) was to run OS-9. There are two versions of OS-9/ST available- "OS-9/ST Personal" and "OS-9/ST Professional". The "Personal" version ($150) leaves out a number of the less commonly used OS-9 utilities, but comes with Microware Basic (formerly known as Basic09/68000). The "Professional" version ($600) comes with a very complete set of utilities and drivers, but substitutes Microware's excellent C compiler/ assembler/ linker/ debugger package for Basic. According to Microware's master plan, to get EVERYTHING you'll have to get OS-9/ST Professional and buy Microware Basic separately for another $200. In case you didn't notice, this makes absolutely zero sense as OS-9/ST Personal, INCLUDING Microware Basic, costs $50 less than buying Microware Basic alone!. Therefore, as dumb as it may sound, if you want to add Microware Basic to your OS-9/ST Professional system, buy a copy of OS-9/ST Personal as well. It's cheaper. In fact, if you can figure out a way to read 3.5" disks, it would make more sense to buy OS-9/ST Personal than Microware Basic separately for ANY OS-9/68000 system! Oh, and make sure you buy your OS-9/ST Personal package just as your initial 90 day software support service expires- that way

you'll get an extra 90 days support on the entire operating system for free! I have pointed this pricing inconsistency out to Microware, and have made the suggestion that OS-9/ST Professional really ought to contain BOTH Microware Basic AND the C compiler. Let's see how long it takes them to figure out that this really would make more sense.

Booting OS-9/ST is simplicity itself. Just insert the "OS-9 Start Disk" and power up the computer. You are then instructed by an on-screen message to "insert the OS-9 Boot Disk" and strike a key. That's it- you are greeted by a welcome message and you're running OS-9/ 68000. The supplied startup file was obviously written with the older 520ST and 1040ST machines in mind, as it asks you to enter the time and date. Editing the startup file (using the supplied "edt" line editor or the umacs full screen editor) to change the line which reads "setime </ term" to "setime -s" eliminated this annoyance- the Mega's built in clock calendar is now automatically read during startup and sets OS-9's time and date accordingly.

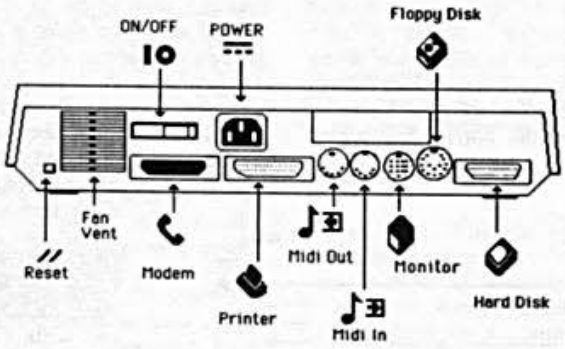
One of the first things I decided I was going to have to do was to hook a 5.25" disk drive to the ST so that I could transfer all of my existing OS-9 software onto 3.5" disks. I began by buying a standard Atari disk drive cable and cutting off one of the two 14 pin DIN connectors on one end. I then carefully soldered each wire on the exposed end to a standard 34 pin edge connector according to the diagram in figure A. I dug out a double half-height disk drive cabinet/power supply I bought for $5.00 at a RainbowFest and proceeded to play with various disk drives I had lying around. Then the fun began. I quickly realized that not just any 5.25" disk drive would work when connected to the floppy disk port on the back of the ST. In fact, of all the drives I tried (including Shugart, Mitsubishi and Tandon), only a Teac model 55 FV/FR (720k, 80 track, 96tpi, ds dd- $119 at California Digital) would work. And even then, it wasn't very reliable until I replaced a 330 ohm pull-up resistor on the drive select line (small 1/8 watt resistor near the terminating resistor pack) with a 1.2K ohm resistor, and completely removed the terminating resistor pack. Now I was in business- or so I thought. I proceeded to insert one of my standard Microware format 5.25" disks into the drive and do a "dir -e". The screen proceeded to list the correct file names that I knew existed on the disk, but the sizes, dates and locations (i.e., all numeric data) were obviously messed up. The system also would not let me read or execute anything on the disk. Just then it occurred to me that Microware's OS-9/ST disk format might not have track #0 in single density. A quick check of the correct byte in the /d1 device descriptor module verified this. So I proceeded to follow the rather complicated procedure outlined in the Microware manual on how to create new device descriptors. While I was at it, I also enabled the floppy disk cache feature outlined in the manual (very neat feature!) and slowed down the step rate to a more reasonable 6ms on a 5.25" drive.



When I was all done, I tried reading my disk once again. It still didn't work! A call to Atari customer support confirmed my fears: the Atari disk controller CANNOT read or write single density AT ALL. Luckily, the trusty Hazelwood computer system I have access to at work was able to read and write disks in BOTH standard Microware format AND one which was compatible with the 5.25" on the ST. I just used Hazelwood's command "dmode / d1 stdd" to change the format of /d1 to the OS-9/ST format and proceeded to copy all my software over to disks formatted in the new format one by one. There's GOOD NEWS FOR COCO OS-9 USERS, though: the Atari DOES correctly read and write CoCo OS-9 format disks by simply making an appropriate device descriptor module. This is because, like on the Atari, CoCo disks are double density on all tracks. If I had been converting from a CoCo OS-9 system instead of one that used the standard Microware OS-9 format disks, I would not have had a problem. As an aside, I have learned that Microware may be seriously considering a change in what they consider to be their "standard" disk format. Whatever they choose, I believe it will be some format which is double density on ALL tracks, like the formats used for Tandy, Atari and Mizar computer systems.

After having a couple of weeks to play with OS-9 on the Mega ST, I only have a couple of complaints. First of all, the select character and background color features do not work. It sort of hurts to know you have a color system but can only coax black and white out of OS-9. Next, I am dissappointed at how difficult it is to customize a device descriptor. This is especially annoying because the floppy disk descriptors, as supplied by Microware, do not have disk cacheing enabled. I can't imagine why anyone would not want to use this feature as it tremendously speeds up disk-intensive tasks. So virtually 100% of everyone who buys OS-9/ST is going to have to build new descriptors and a boot file, unless they are willing to give up

this very powerful feature. Luckily, there is some commercially available software for tremendously simplifying the procedure (such as Aurora Products' full screen "bedt" binary disk/memory editor). But it would have been nice if Microware had supplied a more automated way to do this common task. Lastly, but most annoyingly, Microware supplies no way to read data on Atari TOS format disks into the OS-9 Environment, nor vice versa. In other words, there is no way to get your Atari files (such as those made in word processors, etc.) onto an OS-9 disk or your OS-9 files onto an Atari format disk. I have been told that Hazelwood sells a piece of software for OS-9/68000 that allows users to transfer files (and in fact, entire directory tree structures) between IBM PC format and OS-9 format disks- perhaps this same software will work for interchange with Atari disks, as Atari uses IBM format on their floppies. I definitely plan to try the Hazelwood software out on the Uni-Quad at work.



All in all, I found OS-9/ST on the Mega to be relatively bug free. In fact, the only potentially dangerous problem I discovered is that you are allowed to "deiniz" the RAM disk device / r0 even if it contains data. The effect of doing this is to instantly empty the device, although /r0 still remains in memory (I'm not sure why it hangs around after this- perhaps because it was originally loaded by the OS9Boot file). It sort of works like an "instant format" of /r0. This really shouldn't be a problem, however, because you are ASKING to get rid of /r0 if you try to deiniz it anyway. There ARE a few other bugs in OS-9/ST but, as far as I can determine, these are common to ALL versions of OS-9/68000, release version 2.1; most of these problems have been reportedly corrected in a new release of version 2.2 (which I have not yet received).

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Future OS-9/ST Plans

According to Microware, popular demand is prompting them to eventually release a "windows" package for the ST which would bring the best features of OS-9/6809 Level 2 on the CoCo3 to the OS-9/ST. In fact, it is likely that the version of windows actually released will closely resemble the "InVision" package they are currently developing for the forthcoming CD-I machines. This is a full-featured user interface that will support the mouse, and probably joysticks as well. On the hardware front, there is still no OS-9 activity that I can find. I would hope to see companies like GMX Corp. or Hazelwood working on expansion cabinets for the Mega ST to allow the addition of additional serial ports, RAM, hard disks, and network interfaces to tie OS-9 machines together in a true multi-processing network. In fact, I'd love to be able to network several STs together to a common GMX or Hazelwood 68020 single board computer, using the 68020 as a common file server (i.e., "keeper of the mass storage") and central number cruncher. Ah, dreams!

As I mentioned earlier, OS-9/68000 is not for everyone. In particular, I acknowledge that those of you who have been using OS-9/6809 Level 2 on a TRS-80 Color Computer 3 are not likely to be willing to give up all those incredible windowing and memory management features that you have grown to love just for the promise of what could be coming around the bend. But for those of you who share my opinion that the 680XX is the microprocessor family of the future and are willing to temporarily bypass color, graphics and windows while Microware puts the finishing touches on its next generation software, The Atari Mega ST with OS-9/ST is definitely worth its weight in microchips.

Ed note: see "NEWS" section for expansions available for the Mega". *And see page 23!*

FREE MEMBERSHIP

RENEWALS

UG "Funny Money" by David L. Kaleita

Members who send in their membership renewal dues or donate a piece of software to the UG Library will soon be seeing something new in their mailboxes. It is a 4"x6" post card that is worth one UG "donation credit". A "donation credit" is really just a fancy way of letting you know that we owe you a free disk of software. Previously, all members who sent in membership renewal dues or donated a single piece of software to the OS-9 Users Group public domain software library were sent one of the 56+ disks in the UG library free of charge; if a particular volume number was not specified at the time of renewal, the member was automatically sent a copy of the latest version of disk #0 ("New Member Intro"). From now on, members will have a choice of what they would like to receive.

If you get one of these cards in the mail, DO NOT LOSE IT! It is redeemable like cash for UG products and services, including software library disks, UG T-shirts, etc. To redeem, the cards must be signed and dated by an officer of the OS-9 Users Group and endorsed by the UG member it is addressed to. Once endorsed by the addressee, the cards may be redeemed by any OS-9 UG member. A partial list of items for which donation credits may be redeemed is as follows:

Individual volumes of the OS-9 Users Group Library: 1 credit each "Archive Set" of entire OS-9 Users Group Software Library on multiple-disk set of 5.25" 80 track ds dd (96 tpi) STANDARD OS-9 format disks (not available in Color Computer format): 10 credits/set

Official OS-9 Users Group T-Shirt: 2 credits each

1 year membership dues (renewal): 5 credits

One last note: cards with serial numbers #1 through #978 were printed up with our OLD return address. We will attempt to fix this on any cards we send from now on, but some may slip through. If you receive a "donation credit" post card with our old Des Moines address on it, be sure to change it to our new address in Florida; cards to be redeemed that are sent to our old address may never find us!

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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 13 (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.

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 "submisssions" for acceptable formats.
Each member is entitled to place reasonable classified ads free.

How to make Flight Sim II run from a hard disk:

```
* First, get the s/w onto the hard disk:
chd /dd
makdir GAMES
chd games
makdir FSIM
* Put Flight Sim disk in /d0
arc -am /d0 /dd/games/fsim
* Now split the Fight Simulator Boot from
  the Flight Sim Disk
chd fsim
makdir MODS
chd mods
bootsplit
file to break up - ../os9boot
module name: Init
module name: FT
module name: FTDD
<cr>
* Now make a new bootlist including FT FTDD
  and the INIT module from The Flight Sim Disk...
  or you could use a previously patched INIT
chd /dd/mods
edit your bootlist
s/INIT/
d
 /dd/games/fsim/mods/init
* find the printer descriptor
s/p.dd/
* go one past
<cr>
* we'll put them here
 /dd/games/fsim/mods/ft
 /dd/games/fsim/mods/ftdd
q
* quit the editor

* format a new disk
dmode /d0 sid=1 cyl=23
format /d0 r "boot"
* make the new boot
os9gen #36k /d0 <bootlist
* don't forget we need grfdrv
makdir /d0/cmds
copy /h0/cmds/grfdrv /d0/cmds/grfdrv

* assuming that you have shell+
chd /dd/cmds
* make a proc to run Flight Sim
build fsm
?echo Starting Flight Sim II in Window 14
?xmode /w14 type=1; display c>/w14
?chd /dd/games/fsim
?chx /dd/games/fsim/cmds
?(fs <>>>/w14 ; xmode /w14 type=80)&
?<cr>
attr fsm e

* Now boot using your new disk and type "fsm" any
time   to run Flight Sim.
* Don't forget to clear key to w14.. & give Flight
Sim a   few seconds to start. CNTRL-ALT-LEFT ARROW
exits back   to the window where you typed "fsm".
```

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. 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 Larivee- PHEW!

OS9boots... New Vendors!

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 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, as 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".

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```
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```

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TID BITS by Bert Schneider

It has been a great deal of CPU time since I last tickled the old keyboard keys for MOTD (over a year perhaps). Oh well, all good things come to those who wait, and I have waited long enough and I am sure you have too.

I haven't been just sitting around and waiting since the last time you read any of my reviews or articles. Since last June I have been building and another computer empire in the corner of our family room. That is right, I got rid of my old monster CoCo I that served its master for seven long years. Instead of a funeral, my CoCo donated its vital parts for the continuing saga of bigger and better things for the CoCo world.

I now have a 512k Color Computer 3 encased in a PC cabinet (oh no! I said that dirty two letter word), a 40 track DSDD and an 80 track DSQD set of floppy disk drives along with a 10 Meg hard drive. I only have to debug my real time clock and get my serial ports built (hopefully this weekend). The icing on top of the icing was to purchase Multi-Vue and have it run on my hard drive under OS-9 Level Two. Boy, what an impressive system!

But like most things in life, you have to work at it in order to get something out of it. Unfortunately, the Multi-Vue documentation comes up a little short when the Application Information Files are discussed. It also does not provide you with any capability to create or edit icons. Never fear, J. B. Jannsen has uploaded a fantastic icon editor to Delphi making use of the graphics interface shell, GSHELL.

I have created several icons since I acquired this gem of a program. Here are three dumps of icons that I use for my word processing system: Stylograph, its spelling checker, and mail merge program.

STYLO ICON pathname: /H0/CMDS/ICONS/stylo.icn

```
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F 0 2 4 6 8 A C E
-------------------------------------------------
0000 0000 AAAA AAAA 0002 0000 0008 0008 1455 ..****.........U
0010 1420 0020 0000 0080 0081 5511 4200 0080 . . ......U.B...
0020 0000 0200 0085 5155 1200 0080 0000 0200 ......QU........
0030 0085 1514 5200 0080 0000 0200 0085 5545 ....R.........UE
0040 4200 0080 0000 0200 0084 4554 5200 0080 B.........ETR...
0050 0000 0200 0085 4515 5200 0080 0000 0200 ......E.R.......
0060 0085 1554 4200 0080 0000 0200 0085 5114 ...TB.........Q.
0070 5200 0080 0000 0200 0204 4514 0800 0841 R.........E....A
0080 1040 2000 2000 0000 8000 AAAA AAAA 0000 .@ . .....****..
```

SPELL ICON pathname: /H0/CMDS/ICONS/spell.icn

```
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F 0 2 4 6 8 A C E
-------------------------------------------------
0000 0055 5555 5500 01FF FEAB FD00 06AA AFFE .UUUU....+}..*/.
0010 A900 1ABF 5AAF F900 6BEA F55A B900 56BD )..?Z/y.kjuZ9.V=
0020 AF55 B900 416B DAF5 B900 4016 BDAF B900 /U9.AkZu9.@.=/9.
0030 4501 6BDA B900 4444 16BE B900 4440 016A E.kZ9.DD.>9.D@.j
0040 B900 4444 0016 B900 4504 0001 B900 4004 9.DD..9.E...9.@.
0050 5041 B800 4000 4141 B800 4000 5051 B000 PA8.@.AA8.@.PQ0.
0060 5400 0041 B000 0140 0041 8000 0014 0001 T..A0..@.A......
0070 8000 0001 4001 8000 0000 1401 0000 0000 ....@...........
0080 0141 0000 0000 0015 0000 0000 0000 0000 .A..............
```

MAIL MERGE ICON pathname: /H0/CMDS/ICONS/mail.icn

```
Addr 0 1 2 3 4 5 6 7 8 9 A B C D E F 0 2 4 6 8 A C E
-------------------------------------------------
0000 000A AAAA AA80 0020 0000 0200 0081 5111 ..***.. ......Q.
0010 0800 0080 0000 0800 0081 1515 0800 0080 ................
0020 0000 0800 0020 4455 4200 0020 0000 0200 ..... DUB.. ....
0030 0020 5145 4200 0020 0000 0200 0081 1145 . QEB.. .......E
0040 0955 0080 0000 0805 0155 5555 5511 0400 .U.......UUUU...
0050 0000 0441 1000 0000 1111 4000 0000 4451 ...A......@...DQ
0060 4000 0000 5051 5555 5555 4044 4000 0000 @...PQUUUUED@...
0070 4010 4000 02FC 4040 4000 02A8 4100 4000 @.@...@@@..(A.@.
0080 0000 4400 4000 0000 5000 5555 5555 4000 ..D.@...P.UUUU@.
```

There is one bad feature of the Application Information Files (AIFs) that run under GSHELL. If your application requires that you pass a different parameter to it every time you invoke it, you won't be able to set up an AIF for your application.

Now for the uninformed or for those of you who don't have Multi- Vue yet, I will summarize what Kevin Darling wrote on AIF files in his review of Multi-Vue in the Jan/Feb 88 MOTD edition. The AIF files include the program name, parameters, pathname to the icon file, memory requirements, and window description. Using AIFs allow you to execute a favorite application with out having to remember its syntax or go to the CMDS directory (in the case of Multi-Vue) to execute it. Here are examples of the Application Information Files I use for Stylo, Spell, and Mail:

stylo -t=1 ICONS/stylo.icn 0 2 80 24 1 5

spellcheck

ICONS/spell.icn 0 2 80 24 1 0

mailmerge

ICONS/mail.icn 0 2 40 10 1 0

Now if your program expects you to include the parameters in the command line you must either put those parameters in the AIF or execute the program from the old SHELL interface. A simple solution to this problem is to create another program that gets the parameters from the standard input and then executes the program you wanted to run in the first place. This process is called chaining.

I wrote some simple programs in Basic09 to do just that. First, the program asks you for the parameters (in this case, the filename of the text file you want the spelling checked or printed out using Mail Merge. The program then frees up memory it took and executes the main program. Since both will reside in the CMDS directory, they have to have different names. Therefore, I called my new spelling checker chain program "Spellcheck" and the mail merge chain program "Mailmerge". Stylo comes up in a menu format and does not require a chain type program to invoke it.

The following two programs are the chain programs that get the filename and execute spell and mail respectively:

```
Procedure SpellCheck
Dim filename,answer,parameter:string
Print CHR$(12)
Print "Spelling Checker"
Print
Input "What text file do you want the spelling
checked? ";filename
parameter := "spell " + filename
Chain parameter
BYE
end
```

```
Procedure MailMerge
Dim filename,answer,parameter:string
Print CHR$(12)
Print "Mail Merge"
Print
Input "What text file do you want Mail Merged?
";filename
Input "Do you want this file sent to the printer
(Y/N)? ";answer
IF answer = "Y" or answer = "y" then
  parameter := "mail " + filename + " >/p"
  else
  parameter := "mail " + filename
Endif
Chain parameter
BYE
end
```

These procedures can easily be adapted for any routine and perhaps even a generic chain type program can be written for all programs to eliminate having to have to routines for every program in the CMDS directory. Another approach would be to code these routines in C and make use of the windowing capability of Multi-Vue.

There now, wasn't that fun. Can you say "Multi-tasking"? Sure, I knew you could. Next time here at the Lab of Make Believe, we will talk about using Dynacalc for Home Budget Management.

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 User:Guest Password: CIVIL. 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.

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

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.

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News... News... News... News...

UG Business

MOTD A satellite checking account has been established at the Farmers Bank of Maryland. Both the Editor and the Treasurer have signatory authorization on this account. This reflects the high emphasis that the officers place on publishing MOTD. We no longer will suffer the long delays in transferring funds for things like postage and printing costs.

OFFICERS Remember, all of the UG officers are volunteers, & the UG, although incorporated, is not a business. The group is widely scattered, please be patient with us.

EXECUTIVE MEETINGS Currently all UG officers meet in executive session sunday nights at 9 PM in the Delphi OS9 conference area. These meetings are private, held for the purpose of "Taking care of business". We wish to thank members and the Delphi staff for not interrupting these sessions.

NATIONAL MEETINGS A proposal has been put forward that we hold monthly national meetings for all members. The plan would be to rotate these between the three major services, (or the ones that cooperate). Users may want to voice their opinion on this subject, please do. One open question is: shall we admit non-members, or should we take the roll at the door? (the Editor prefers the latter).

NEW OS9 UG LIBRARY SOFTWARE Carl has been authorized to "horsetrade" for source with another major users group. We may see some major new works soon. Carl may need some conversion help, you can volunteer by writing the Tampa address, attn: LIBRARIAN. Hint: "C" background required.

POLL We need a users poll. A strong volunteer is needed here. The plan is to publish the poll in MOTD, but all completed forms would go to the volunteer, who would enter the results in an OS-9 data base. A concise analysis would also be appreciated. Contact the Editor.

YOU CAN GET INVOLVED RIGHT NOW! Check your local advertisements for dealers that have recently started selling OS-9 products. (not just selling, but advertising). Tell them about our OS9Boots program. Or if you have a piece of OS-9 software or hardware that you'd like to sell, consider starting your own business, then call me and get into OS-9Boots yourself. In particular, look for small independent Atari dealers, many of whom are fighting a valiant struggle to "come aboard", but think that they are alone. (Microware has been advertising in the Atari Mags, & the dealers see OS-9's power, and are beginning to stock it, but they need US, and we need them!).

UG INFORMATION. We are currently working with Falsoft, (Rainbow), Don Williams, (68 Micro), and MSC to place membership information in their publications. Several vendors including Frank Hogg have volunteered to "stuff" outgoing orders with the same type of information.

UG LIBRARY Users are reminded that current versions of most UG software can only be had directly from the UG. (naturally). There is room for new software here too, especially in the CoCo and OSK-ST areas, so get your "credit slips" now... submit!

Jerome Slappy has been busy down under in Australia. He is sending one of his CoCo four port serial boards for the Color Computer, as well as an 8 port version for the Mega! We'll let you know how they look.

Owl-Ware is humming shipping the new CoCo IBM keyboard interface adapters.

Burke & Burke are shipping the version 2.1 drivers for their IBM hard disk adapter, the CoCo-XT. Chris also tells me that he is working on a new board that will allow connection of IBM COM1, COM2, LPT1, Hard Disk, Floppy Disk, or MIDI boards.

A new Page Layout program a 'la **Pagemaker or Ready Set Go**, is said to be available in Canada. This program runs on the Atari ST under OS-9/68000. We have a lot of questions on this one, info is on the way to us.

Piracy is the stated reason that several third party software developers have given as the reason to drop support for the Atari ST. I needn't remind users that piracy is a problem in the OS-9 world as well. Forget the lectures, but there is some interesting news here: a third party s/w house has won monetary damages IN EVERY CASE IT HAS TAKEN TO COURT! People have lost considerable property, and in at least one case, it was the Parent of a 14 year old. This s/w house may go public with it's results, but until they do, I'll respect their desire to carry on this campaign quietly. Advice: don't do it! You may end up as the skull and bones.

1988 – The Year of the Hard Disk!

The **CoCo XT** hard disk interface from **Burke & Burke** lets you connect up to 2 low cost, PC compatible 5-120 Megabyte capacity hard drives to your CoCo. You buy the drive, Western Digital WD1002-WX1 or WD1002-27X (RLL) controller, and a case from the PC dealer of your choice. Just plug them into the CoCo XT, plug the CoCo XT into your Multi-PAK, and you have a 20 Meg OS9 hard disk system for ***under $450!!***

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```
OS9: wild asm /d0/src/*.src o=/d1/obs/release/*.obs
OS9: mv /d1/obs/release /d1/release
```

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RAINBOW CERTIFICATION SEAL

OS-9 USERS GROUP LIBRARY - 12/03/87

VOL	TITLE	DISK	CODE
28	68K Utilities	(disk #1)	1
50	68K Utilities	(disk #2)	1
51	68K Utilities	(disk #3)	1
53	68K Utilities	(disk #4)	1
7	Adventure Game (object)		3
6	Adventure Game (source)		4
17	Basic09 Programmer's Tool Kit		1
26	C Language Math Library	(09 only)	3
9	C Programmer's Tool Kit		3
42	Coco Graphics	(disk #1)	1
45	Coco Graphics	(disk #2)	2
15	Communication	(disk #1)	1
37	Communication (09&00 Kermit)	(disk #2)	2
39	Communication (Freeware)	(disk #3)	4
44	Communication (Smod8)	(disk #4)	1
56	Data Base Management (SDB LII)		4
14	File Maintenance	(disk #1)	1
21	File maintenance	(disk #2)	1
29	File Maintenance	(disk #3)	1
54	File Maintenance	(disk #4)	1
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32	Hardware Customizations	(disk #3)	1
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20	Languages 1: XLisp (object)		1
19	Languages 1: XLisp (source)		4
10	Math & Electronics		1
52	Math & Electronics	(disk #2)	1
0	New Member Intro		3
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41	Programming Utilities	(disk #5)	1
1	Spelling Check (New Ver; 09 & 00)		4
2	Spelling Dictionary (102k words,09&00)		5
18	System Utilities	(disk #1)	1
33	System Utilities	(disk #2)	1
35	System Utilities	(disk #3)	1
40	System Utilities	(disk #4)	1
43	System Utilities	(disk #5)	1
46	Text Proccessing Utils (Sled)	(disk #1)	2
47	Text Proccessing Utils (68K Roff)	(disk #2)	4
49	Text ProcUtils (MicroEMACS)	(disk #3)	5
55	Text Proccessing Utils (QED for L2)	(disk #4)	4
3	Word Processing Utils	(disk #1)	1
11	Word Processing Utils	(disk #2)	1
25	Word Processing Utils	(disk #3)	1

NOTES:

1) A complete "format consists of a TYPE plus a CODE, for example, format B1 is CoCo 35t ss dd.

	Type "A" Std. OS-9 : (5.25")	Type "B" CoCo OS-9 : (5.25")	Type "C" Atari OS-9 : (3.5")
Code			
1	35 t ss sd	35 t ss dd	80 t ss dd
2	35 t ds sd	35 t ss dd	80 t ss dd
4	40 t ds sd	40 t ss dd	80 t ss dd
5	40 t ds dd	40 t ds dd	80 t ss dd
6	80 t ds dd	80 t ds dd	80 t ds dd

2) All of the above volumes are available in Microware standard, Atari ST 3.5", and TRS-80 Color Computer (dd, 18 sectors/track, etc.) formats. Specify "TYPE B" when ordering if running a Color Computer; specify "TYPE C" if running OS-9 on an Atari ST computer. Please remember that some volumes of the Library will not fit on all formats of disk. If you do not specify the format you desire, you will be shipped either Microware standard 5.25" OS-9 format (i.e., "TYPE "A"), or the format we have on file for you (as specified by you on your original membership/renewal application).

3) Send orders to the main UG address. Orders not marked on the exterior of the envelope"DISK ORDER" will be delayed an additional 4 to 6 weeks. DO NOT SEND ORDERS OR INQUIRES TO "LIBRARIAN".

4) The ENTIRE OS-9 UG Library is presently available in a special set of disks in UG format "A6" ONLY). Please note that this set contains all software that is presently contained in the UG Library EXCEPT the spelling dictionary, which is ONLY available on the individual Volume #2 library disk. This archive set is presently unavailable in Color Computer format.

To order any of the above individual volumes from the OS-9 Users Group , send $6 for each 5.25" disk and $8 for each 3.5" disk to the main address of the OS-9 Users Group.

Payment for disk orders may be made by check, Master Card or Visa ONLY. Please remember to include your complete mailing address, telephone number(s), a description of the disk format you want and, of course, your payment.

OS9 Users Group
Suite R-237
1715 East Fowler Ave.
Tampa FL 33612

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

ARCHIVE SET (format A6 only) :

	ARCHIVE	A	6	$100	

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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The expression interpreter also supports the new Microware C Compiler data types and operations (enumerators, bit fields, structure assignment, functions that return structures and structure parameters). This provides the programmer with total compatibility between the source level debugger and the C Compiler.

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ETHERNET SUPPORT

Microware's new Ethernet Support package utilizes the popular TCP/IP protocol to facilitate communications between OS-9/68000-based systems as well as other operating system environments. This initial release of the Ethernet protocol package is designed to support the Communication Machinery Corporation (CMC) ENP-10 Ethernet controller. Subsequent releases to support additional hardware, including the Motorola MVME 330-A-K controller, are under development. Microware's TCP/IP implementation conforms to the United States Department of Defense ArpaNet standards. This standard incorporates FTP (a popular file transfer protocol) and Telnet (a virtual terminal interface). FTP allows the user to transfer files and data between Ethernet nodes. Telnet allows the user to login on remote systems over the Ethernet-TCP/IP network.

Microware selected the Ethernet protocol because of its rapid growth in popularity as a networking standard. The Ethernet package allows the user to gateway from the OS-9 Operating System to UNIX, VMS and other operating system environments. This communications path provides connectivity for distributed program development and application systems. The Microware Ethernet support package includes a new OS-9 file manager that supports a BSD 4.2 type socket interface and a new CMC ENP-10 device driver.

HP Series 300 Work Station Resident Cross-Compilers.

We don't have full information on this product yet, but MSC has indicated that it is now possible to develop real-time applications for OS-9 based systems using resident cross complilers on the HP 300 series workstations.

This product will continue to maximize portability, while providing HP UNIX users with the ability to generate PIC, reentrant code from C or ASM sources.

Output options will include ASM source, linker input or executable object. Extensive libraries are supported including Berkley 4.20.

SUPRA HARD DISK PATCH

The OS9/Atari ST hard disk driver, as supplied by Microware, only supports Atari hard disks. The following patch to the driver module "sthd" allows Supra hard disk drives work for OS9, as well. This patch is for edition #13 of""sthd" only, and is unsupported by Microware Systems Corporation. Our thanks to Dick Stiles, who supplied this patch.

Using the debug utility, change the following it "sthd":

at offset	change this	to this
5fa	08	08
5fb	2e	b9
5fc	00	00
5fd	02	07
5fe	07	ff
5ff	c4	ff
600	66	fa
601	06	11
602	00	08
603	3c	ae
604	00	00
605	01	02
606	4e	07
607	75	c4
608	08	66
609	93	08
60a	00	4a
60b	07	2e
60c	08	07
60d	ae	c4
60e	00	67
60f	02	1a
610	07	60
611	c4	e2

The corrected code will look like this, starting at offset $5FA:

```
5FA 08B90007FFFFFA11    bclr #7,(0xFFFFFA11).l
602 06AE000207C4      bclr.b #2,1988(a6)
606 6606                    bne.b 0x612
60A 4A2E07C4              tst.b 1988(a6)
60E 671A                    beq.b 0x62A
610 60E2                    bra.b 0x5f4 (exists)
612 302A0008              move.w 8(a2),d0
```

Here is what is there now:

```
5FA 082E000207C4      btst.b #2,1988(a6)
600 6606                    bne.b 0x606
602 003C0001              ori.b #1,ccr
606 4E75                    rts
608 08930007              bclr.b #7,(a3)
60C 06AE000207C4      bclr.b #2,1988(a6)
612 302A0008              move.w 8(a2),d0
```

Ed Note; I am currently using this patch with a Supra 20 meg. I have occassionally experienced a hang with the disk drive light on. However, this occured with a program that is not fully operational, (still in debug phase)

Editors Note: Yes, you are reading right, MSC does have a C source level debugger! I do not believe that anyone else offers such an incredible tool! We are waiting for a copy of this too-good-to-be-true program, which we will evaluate for you ASAP. In the mean time, I can only speculate as to the significance to the OS-9 software arena, but I would say that transporting C to OS-9 is now easier than ever. In fact, I would now develop all my C on OSK , no matter what the target system!

Tandy FD-502 Double-Sided 40tk Secondary Drive Fix - Kevin Darling

03 Apr 88

PROBLEM:

As we all know, the CoCo normally turns on both drive motors, even though it selects only one drive for access at a time. This ensures that (for example) copies made between drives need not wait for each drive to spinup to 300rpm each time it switches from drive 0 to drive 1 (or vice versa). So normal operations (and all disk drivers for the CoCo) assume that all drives are ready to use (spun up) if the motor line is on. So far, this has been true.

However, the *second* disk drive used in two-disk-drive FD-502 cases has a jumper inadvertently misplaced by the manufacturer. These drives (as they come) *ignore* the motor line, and instead spin only when selected. This means, of course, that every time you see your drive 1 light go on, it takes it a good fraction of a second to get "to speed". When the light goes out, the drive stops again. This can make disk operations unreliable (and does!) with symptoms similar to drives with head-load delays.

WHO SHOULD FIX?

Probably everyone. There seem to be less problems with RSDOS, as it normally runs at only 1MHz speed, and has long delays. OS-9 operations with the standard CC3Disk at L-II speeds have occasional problems (especially when copying from /D0 to /D1). It seems to be at least partially disk controller dependent also. Those using third-party disk drivers should do the fix. It's also possible that some RSDOS applications that do their own disk accesses could fail.

It is a *must* fix if you wish to use the new Disto Super Controller II, with the OS-9 Level Two no-halt drivers. To properly wait each time /D1 is selected takes an unacceptable toll on disk access times. Even if you're using a regular disk controller and drivers, it costs extra time for the controller chip to recognize a given sector as drive 1 speeds up.

CHECKING THE DRIVE:

To see if your drive acts this way, loosen the four outside screws that hold on the case top. Now, while observing the top (D1) drive, try the following under RSDOS:

POKE &HFF40,2 - if the motor DOES come on with the light, you need the fix.

FINALLY, THE FIX:

* Remove the top drive. There are two screws on each side holding it in.
  I recommend unscrewing the two holding the fan, and laying it back.
  There is also a fan power connector you could undo, but be careful, the lines on the fan motor can break off (easy to resolder, tho).

* Pull off the black-yellow-red power cable, and the main 34-wire control cable. Now lift up or slide out the drive, being careful to hold up the drive so it doesn't fall on the bottom drive.

* Look at the top. Remove the two flat plastic head/sensor cables that connect to the circuit board visible at the left rear, by lifting up on the top of the plastic block that they go into. This releases the tension-lock on the cables, and they then will pull out easily. Remove also the 4-pin cable that goes forward to the index-hole and write-protect sensors.

* Flip the drive over. Remove the three screws holding down that circuit board, and remove the two cables attached to the motors.

* Now look at the top of the circuit board. At the back end (close to where the CoCo controller cable plugs in) you'll see two small bare-wire jumpers soldered in. One is over by pin 34: ignore that one.

* On the side nearest pin 2 of the 34-pin edgecard is the other. It is in one of two sets of holes marked "5". Remove or clip it, and install it or another wire in between the other marked set of holes. This requires soldering in the new jumper, so be careful. That's it.

* Put everything back together and try these pokes:

POKE &HFF40,2 - light should come on, no motor.
POKE &HFF40,8 - motor should come on, no light.
POKE &HFF40,10- motor and light should come on.
POKE &HFF40,0 - turns off everything.

Ed Note: See page 23

HARD DISKS - HARD TIMES By Bill Brady

I don't like negatives, in fact, if you want to criticize my style, it is that I use too many "not as bad"'s when better style would be "better"'s. It is time, however to raise a red flag concerning hardware, disk drives, and hard disk drives in particular.

Recently an associate was looking for a hard disk drive. He brought to me an AD, pointed to it and said"Bill, should I buy THIS one?". I looked and saw an ad for a hard disk package at a very low price. I said "well I think this is a kit, you may not be able to get it up". The reply was "call and ask", so I did. I was told that the package was completely integrated, formatted, and ready to go: "no, it is not a kit". I was also told that the interface contained a real-time clock. I was also told it was available for shipping within a few days. This was good enough for my frugal friend, and he ordered it.

Several weeks later, he calls: "well, the disk drive finally came in, you were right, it IS a kit, I've got it together, but I am afraid to turn it on". Reply: "bring it.."

What he showed up with was, well, a strange beast. He had a B&B adapter (NO clock), a WD controller, and a ST225 drive housed in the smallest HD case I've EVER seen. The cables barely cleared the MPI, and there were very few cooling slots. The very first thing I said was "if you can, put a fan in this thing!". We did, however, get it up and running, but the next day I received a phone call: "the HD died, I was using it, and did a dir /dd and crash!, it wouldn't re-boot," and "it was too hot to touch".

Putting together a hard drive from a kit is cheap, but a job for an experienced DISK technician. If you haven't done it before, do your self a favor, buy a package that is sold as a package. I bought an OWL-Ware myself (& I am a CET) over three years ago, which I just plugged it in and it has been running ever since. Frank Hogg also sells complete packages.

All Hard disks need a fan. And remember, integrating a disk package, if a problem comes up, is almost impossible if you don't have the proper test equipment, even for the best of computer mech-techs.

Getting SAS-sy With Your Disks

by Pete Lyall

Whether folks are finding hard disks to be more affordable, or mandatory for increased storage capabilities, some combination of the above is causing more of them to appear on Coco3 (and other) OS-9 systems. With all this space, power, and capability comes the the inevitable list of questions and confusing options. I won't attempt to deal with them all here, but I will try to clear the air on a couple of device and path descriptor options that seem to be giving some new hard disk owners a bit of a tough time - DD.BIT (number of sectors per cluster) and IT.SAS (minimum sector allocation size).

Since the DD.BIT is a bit easier to cover, let's do that first to get warmed up for the other stuff. Another good name for DD.BIT might well be 'clustersize'. In order to understand what clustersize is, we're going to have to dig a little bit into the layout of the disk. All disks, be they floppy or hard disks, have at least three things on them when they are initially formatted. These are:

o - Logical Sector Number Zero (LSN0)

o - Disk Bitmap

o - Root Directory

The LSN0 is essentially a sector containing all the information about the disk's personality. It contains information on how many tracks and sectors the disk has, and also how many sides (or heads, in the case of a hard disk) are available. Other information includes the time that this volume (disk) was created or formatted, who the owner is, where and how large the boofile is (if any), the disk name, and lastly the bitmap information. This bitmap information tells the system how many bytes are in the bitmap, and what the size is in sectors (clustersize) of the space that each bit in the map represents. More on this in a minute.

The bitmap is basically a map of the space available on a disk. Each bit of each byte in the bitmap represents a block of space on the disk. One analogy to the bitmap would be the seating chart you might see in a restaurant when you are in the reception area. Tables that are marked on the chart with an 'X', or possibly illuminated by an LED, indicate that the table is in use. Tables that are not explicitly marked are available to be used. Much is the case with the bitmap. If a bit is on (in the '1' state), it tells the system that the block of disk space that it represents is in use. What the space is used for is of no consequence to the bitmap. It could be part of a file, a directory, or even part of the bitmap itself. Conversely, an off bit ('0') indicates that the space is available for whatever needs it.

Notice that I have managed to avoid defining how big this space is. The reason? It is variable. Each bit in the bitmap represents one cluster. The size of this cluster is defined in DD.BIT in LSN0, which is read by the system before any other manipulation of the disk is done. A cluster may be from 1 to $FFFF (65535) sectors in length. Ready for a surprise? Almost everyone uses a cluster size of 1. So why bother with all this confusing talk of clusters and sectors? There was a time in OS-9 history when lower density floppies were the predominant storage device. I'm going to hazard a guess and say that early OS-9 programmers decided to limit the length of the bitmap to 1 sector, thinking they wouldn't need any more. After all, if we consider the case of clustersize = 1 sector, and a formula of (TRACKS * SECTORS/ BITS per BYTE) CLUSTERSIZE = BITMAP SIZE a single-sided 35 track, double density drive at 16 sectors per track (standard os9 format) only required 70 bytes of bitmap space (35*16/8)/1, and a single-sided 77 track 8 inch disk, at 26 sectors per track would fit into 251 bytes of bitmap space (77*26/8)/1. The problems came with drives of higher capacity. A conventional double sided 80 track drive would overflow the bitmap sector ((80*16*2/8)/1 = 320 bytes). You can easily imagine how a hard disk might affect this situation. Enter clustersize. If the clustersize is set to 2, each bit in the bitmap now represents 2 sectors of disk space. In the case of the 80 track floppy above, this alters the formula to ((80*16*2/8)/2 = 160 bytes). At a clustersize of 2 sectors, the bitmap can represent roughly 1 megabyte of space. Obviously this is not large enough for even the smallest hard disks. The cluster size would have to be raised to 10 sectors to represent a 5 megabyte drive in a one sector bitmap. For a 20 megabyte drive, each bit in the bitmap would have to represent 40 sectors, and it gets progressively worse with larger drives. This is where we can start to see the flaw in this design. Suppose you need to create a very short procedure file that were to contain the command:

```
echo This is a test >/t2
```

This file should require only about 25 bytes including the carriage return. Because the hardware prevents us from using anything smaller than a sector, our file size will be 25 bytes, but the disk space used should be 1 sector. Assuming that we had done this on the 20 megabyte drive described above, we would actually have used 40 sectors of disk space (10 kbytes) - a waste of 39 sectors. Why? Because the minimum chunk that we could mark as used or available in the bitmap was 40 sectors. When we marked the area as in-use, we also marked the rest of the cluster as in use. What a waste!

Fortunately, Microware felt the same way and altered the bitmap design. Now the bitmap may be more than one sector in length. In fact, it may be up to 65535 bytes long (8192 sectors). The number of bytes in the bitmap is also specified in LSN0 in DD.MAP. If clustersize were 1 sector, this bitmap would be large enough to service a 130 megabyte hard disk. For larger disks, the clustersize to be raised to accommodate the capacity. A clustersize of 8, for instance, could handle more than 1 gigabyte of storage. The current bitmap size and clustersize ceiling is capable of supporting a disk that contains 1,073,741,824 sectors, or approximately 256 gigabytes. I think it should last us for a while, eh?

That's probably all you'll ever wanted to know (or more) about clustersize. For almost all practical purposes, it should be left at a size of 1 sector per cluster. This is sufficient to support those of us with disks that are 130 megabytes or smaller.

The 'IT.SAS', or segment allocation size, is used to determine how much of the disk's real estate is given up each time a request for more disk space is made. This item is located in the device descriptor for each disk at byte offset $20. Why not just give the calling process (or processes) a sector at a time, as they need it? In a word - fragmentation. That is, your file could end up being severely scattered over the disk's surface. This means that it takes more time to read it, as several seeks to different locations on the disk may have to be made. Also, you could potentially run out of segment map space. Briefly, each file and directory has a sector set aside for it that describes its characteristics. This is known as the 'file descriptor sector', or FD sector for short. In the FD sector are data concerning the owner of the file, the dates of creation and

last modification, the permissions, filesize, and lastly, a map containing a list of what sectors the file occupies on the disk. This map has 48 locations available. Each map location reserves three bytes for the logical sector number of the segment (LSN), and two bytes for the number of sectors in that segment. If the disk were reasonably full and highly fragmented, it is conceivable that you could fill up a segment list with 48 entries of one sector each - a 12K file would cause an error 217 (Segment List Full). In order to avoid this, the RBF manager tries to reserve a certain amount of sectors for file expansion each time a file needs more room. The number of sectors to be added to the file is specified in IT.SAS. For most floppy disks, this number is 8. A good rule of thumb is to use some even multiple (or division) of the number of sectors available on a track. Standard OS9 floppies have 16 sectors per track, and I'm guessing that's why a default SAS for floppies is 8 sectors (one half of a track). I bet if they'd thought of it, they would have made the SAS value for Color Computer formatted disks 9, as that disk format has 18 sectors per track. Since most hard disks have 32 sectors per track (256 byte sectors), 16 and 32 are common values for IT.SAS in hard disk descriptors.

Allocating extra space to a file does not change the file's size. If the file is only occupying 35 bytes of the 8 sectors, its filesize will still show as 35 bytes. The rest of the 8 sectors is only standing by for use as expansion space for the file, but is not yet in use. It is however unavailable for use by any other file, and is marked as being busy in the disk's bitmap. By now you're probably thinking that this is a horribly wasteful approach. Here's the catch: when the file is closed, the system will recapture all that expansion space and return it to the free space pool if the file pointer was at the end of the file. That is, if we had written the 35 byte file above, our write pointer would have moved forward one byte with each character we wrote to the file. When we wrote the 35th character, and then closed the file, we were at the end of file. As a result, the bulk of the reserved expansion space (in the case of a floppy, 7 sectors) was given back to the system.

This is wonderful for files that will be written or updated infrequently like ASCII text files written with your editor. If you think about it, you are not changing existing files, but writing out a new file and deleting the old one each time you edit. This is not so wonderful for files that are continually altered or expanded, like database files. These are the files that really need protection from fragmentation. Fragmented database files (or directories) can make for extremely slow search or lookup operations. What can be done to effect this protection and hang onto the reserved expansion space? Simple - just move the file pointer to any place other than the end of file. This is normally done with a seek command, most commonly to location 0 in the file (also known as 'rewinding' a file). When the file is closed, whatever space had been allocated to it as expansion room is kept for future use, and not returned to the free space pool. This technique is used by the system in the creation of directories. Each time 'MAKDIR' is run, it allocates the number of sectors specified in IT.SAS for that disk to the directory you create. Even though the filesize may be 64 (room for the '.' and '..' entries), the allocated space will be several sectors. This will prevent your directories from being scattered in several tiny chunks over the surface of your disks. Could you imagine what the impact of having a 20 sector CMDS directory that was fragmented into 1 sector pieces? If you typed 'dire' instead of 'dir e', your heads would have to seek at least 20 times just to find out that there is no 'dire' command and issue an error 216.

There is a small disadvantage to this philosophy as well. If you are creating directories that you know in advance will only have a few files in them, that extra directory space will be permanently wasted. For this reason, I wrote a variation on the 'MAKDIR' command called 'mkdir' (Unix and MS-DOS users have one - why not us?). Mkdir allows you to specify either the number of directory entries you wish to make room for, or just how many sectors you wish to reserve. I'm also including source for a utility called 'fmap' (file mapper). This utility was written primarily to allow inspection of the FD sectors, but is also useful in looking at a file's allocated space vice actual filesize, and its degree of fragmentation. The sources to both of these programs are from early C programming efforts, and are consequently somewhat inelegant. If I let that stop me, I'd never publish post anything, so here they are! For those without access to a C compiler, the binaries are available for downloading from the OS9 Forum on CompuServe in the UTILITIES area (DL9).

I hope that I have managed to shed a little light on some of the less obvious areas of disk management, and possibly even demystified the disk bitmap and the nature of IT.SAS to some degree. I am always available in the OS9 Forum on CompuServe for questions and comments (as either 'Sysop' or 'Pete Lyall' - User Id: 76703,4230), and I check into the Delphi OS9 Forum at least weekly under the username 'OS9UGVP'. For those with access to USENET, I can be reached at {scgvax,ihnp4,jplgodo}!wlbr!pete or on the Internet at pete@wlbr.eaton.com.

Please feel free to contact me with any questions you may have. Until the next time, happy hacking, and remember to backup your disks before getting too creative!

Subj: listmkdir.c - listing 1

```
/* Mkdir - a tool to allow you to make directories at other
** default sizes than what 'IT.SAS' (in the device descriptor -
** minimum number of sectors to allocate) says you need. This avoids a
** lot of wasted disk space in the event you only need a few
** entries in the directory, or allows you to build a reserved area
** for a huge directory (such as CMDS or HELP or whatever) so
** the directory won't be fragmented, thus speeding searches.
** This ONLY pre-extends the directory - it doesn't fill it with
** wasteful and time consuming blank entries. The additional
** space is there when you need it.
**
** You may specify desired directory allocation in units of
** sectors or filenames. Filenames will be rounded up to the
** next integral sector.
**
** Additionally, you may specify creation attributes in
** hexidecimal that override the default (bf or d-ewrewr).
**
** By Pete Lyall
**
** 76703,4230
**
** 4/21/87 - Version 1.0
**
** 4/23/87 - Version 1.1
**
**      a) Uppercasing of directory names unless -l option is used
**      b) -e option automatically adds 2 for '.' and '..'.
**
** Note: this source relies heavily on Carl Kreider's replacement
** C library 'clib.l'.
*/

#include <stdio.h>
#include <os9.h>
#include <lowio.h>


#define GETOPBUG

#define DEVICE 0xF0
```

```
#define OBJECT 0x01

char *modlink();

extern char *optarg;
extern int optind, opterr;

main(argc, argv)

int argc;
char *argv[];

 {

 int soption,          /* Used for number of sectors to allocate */
   eoption,           /* Used for number of directory entries  */
   loption,           /* Used to allow lowercase directory name */
   result, attributes,  /* desired directory attributes        */
   oldsectors,        /* original RBF ll.sas count           */
   sectors;           /* actual number of sectors to request  */


  char option, *workptr, *workptr2, *descriptor, dirname[128],
    devname[32];


  /* Current 'getopt()' has inverse logic in Kreider's LIB */

#ifdef GETOPBUG
  opterr = 0;
#else
   opterr = - 1;              /* Prevent getopt() complaints */
#endif
  soption = eoption = sectors = loption = 0;
  attributes = 0x3f;                  /* default = d-ewrewr */


 if (argc < 2)
  usage();

 while ((option = getopt(argc, argv, "s:e:a:lT")) != EOF)

  switch (tolower(option))
   {
   case 's' :
     soption = atoi(optarg);
     break;

   case 'e' :
     eoption = atoi(optarg);
     break;

   case 'a' :
     attributes = htoi(optarg);
     break;

   case 'l' :
     loption++;
     break;

   case '?' :
   default  :
     usage();

   }


 if (soption)
  sectors = soption;
 else
  if (eoption && !soption)
   sectors = ((eoption+2) % 8) ? ((eoption+2) / 8) + 1 :((eoption+2) / 8
);

 if (sectors > 255)
  {
  fprintf(stderr, "\n%s: maximum sectors limited to 255\n", argv[0]);
  exit(67);                          /* Illegal argument */
  }

 /* UPPERCASING of the directory name suggested by Kent Meyers */

 if(loption)
   strcpy(dirname, argv[optind]);
 else
   strucpy(dirname, argv[optind]);

 if (sectors)
  {

  if (dirname[0] != '/')
    get_dev(".", devname);
  else
   {
    strcpy(devname, dirname);
    workptr = &devname[1];              /* skip 1st slash */
    *(workptr2 = index(workptr, '/')) = '\0';
    /* null terminate 'devname' */
   }


  /* Get device descriptor */

  if ((descriptor = modlink(&devname[1], DEVICE, OBJECT)) == - 1)
   {
   fprintf(stderr, "\n%s: couldn't link to '%s'\n", argv[0], &
     devname[1]);
   exit(errno);
   }
  else
   oldsectors = (int )*(descriptor + 32);
  *(descriptor + 32) = (char )sectors;

  }

 /* Actually MAKE the directory */

  result = mknod(dirname, attributes);

 if (sectors)
  {
  *(descriptor + 32) = (char )oldsectors;
  munlink(descriptor);
  }

 if (result)
   exit(errno);
 else
   exit(0);

 }
/* This routine stolen from Carl Kreider */

/*
**  return in 'buf' the device name where
**  dir 'f' resides.
*/
get_dev(f, buf)
char *f, *buf;
 {
 char temp[32];
 int pn;

 if ((pn = open(f, DIR + READ)) == - 1)
  {
  fprintf(stderr, "\nmkdir: can't open '%s'\n", f);
  exit(errno);
  }
 getstat(SS_DEVNM, pn, temp);
 *buf++ = '/';
 strncpy(buf, temp);                  /* now copy first item */
 close(pn);
 }



usage()
 {
 fprintf(stderr, "\nusage: mkdir [-s nn] [-e nn] [-a xx] [-l] directory\n\n"

   );
 fprintf(stderr,
   "-s nn - create directory with 'nn' sectors allocated\n");
 fprintf(stderr,
   "-e nn - create directory with room for 'nn' filenames\n");
 fprintf(stderr,
   "-a xx - use hex 'xx' as directory attributes [7f=sewrewr]\n");
 fprintf(stderr,
   "-l   - allow lowercase directory name [normally forced to upper]\n");
 exit(0);
 }
```

Editors Note: Sorry to say that there is not enough room to include Pete's second listing. The reader may also wonder why I tend to do listings in "fine print". Well, one reason is that it makes my job a whole lot easier, as there is plenty of room on a line, making re-formatting unnecessary, and avoiding the inevitable errors that causes. Also, I do not believe that listings of source code belong in a newsletter because they are generally available "on-line" someplace else. However, these listings contain classic OS-9 C code, inelegant as it may be, and is valuable in understanding both C and its relationship to OS-9.

MURPHYS LAW AND A BOY NAMED SUE

Jerry Murphy

Bringing Up the Burke & Burke with an IBM style Hard Drive on the CoCo 3.

Johnny Cash made popular the song that told "Life ain't easy for a boy named Sue!" Let me tell you that it ain't no bed of roses to be a computer hobbyist named Murphy! My own law made my recent excursion into the hard drive world some rough trip.

It all started with my purchase of Multi-Vue. It quickly became evident that a hard drive would be a requirement if I wanted to put all the stuff into it that I wanted at hand, and on line. Bill Brady suggested I check out the Burke & Burke Coco XT-RTC hard disk interface. He sent me an evaluation unit, supplied by Chris Burke, with version 1.4.1 software. All I had to do was get the hard drive and controller card. Murphy's Law woke up from slumber and began to stalk me with a vengeance.

My system at the time of the hard drive purchases was a 512K CoCo 3, 26-3124 Multipak (modified), J&M floppy disc controller, and a CM-8 monitor. The floppies were 40 track double sided, acquired as surplus, but functional; these have since been replaced with a pair of 80-trackers, principally to make backups of the hard drive more economical, but not required by any means. ADOS3 is in the controller, and the shell is version 1.2.

After looking at all the ads in The Rainbow, as well as the other trades and The Computer Shopper, I quickly determined that this would be an expensive project unless I did some careful shopping. I finally decided on a 20 Meg hard drive available locally. The price was right, I thought, but the brands were not those suggested by Chris Burke. It shouldn't matter that much (I thought).

What I started with was a drive made by MicroScience, and a controller by OMTI. Poor choices from the giddyup-go. The controller would simply not fit into the container provided by Burke; it was slightly longer and wider than the space provided, and the mounting holes were not even close. The mounting of the controller exposed the solder side of the board to the possibility of a short circuit against the enclosure; a piece of poster board cut to size eliminated this possibility. The controller was another matter; Chris Burke told me he had never taken that controller into consideration when he designed his interface, and wasn't sure it would work. I never found out whether it would or would not; I exchanged the OMTI for a Western Digital like I was instructed to have in the first place.

The darned thing still wouldn't work, so I took it back to the source. There, I found the drive had been formatted by the dealer, and loaded with DOS 3.3. Maybe this is why I couldn't get it to format properly. It took only a few minutes for him to use debug's GO command for a soft format. The Western Digital controller, with the equivalent of the Seagate S-225 hard drive, required the command G=C800:5. Yours might need a different GO command.

Meanwhile, Chris sent me the updated software, version 2.1, along with new documentation sheets. The procedure was nearly cut and dried until I got to step 3.4, formatting the new hard drive. Following the instructions caused a system lockup! Call for the cavalry, call in the local guru, Keven Pittsinger!

We checked all connections, and os9gen'ed a new bootfile that Keven assured me would work. It didn't. According to the documentation, you're supposed to os9gen a disk with the hard drive called "H0". Both Keven and Bill Brady claim that when using Level 2 on a CoCo 3, if H0 is in your bootfile, CC3GO automagically switches over to the hard drive for its default data and execution directories. If the hard drive isn't even formatted yet, it'll lock up the system.

What Keven did was create a bootfile using a descriptor called "Z0", and tried formatting that. Still no go.

Since the only thing that wasn't checked on the system was the interface, we then tried setting and recalling the time off the hardware clock. No go there, either. Keven came up with the brilliant idea that maybe
the interface was installed backwards. We turned it around, rebooted, and got a lockup. We called Chris Burke for any ideas, and got the kind of user support that is rare in the computer world these days.

Over the phone, Chris Burke went through a debug routine with us that determined the interface was, indeed, "talking with" the controller.
Here are the successive debug 'pokes': $FF51,0 $FF52,0 $FF50,4 $FF50,0 $FF50,0 $FF50,0 $FF50,11 $FF50,7. Then PEEK $FF50 gave us a response of '2'. If we had gotten a '0', it would have meant all was functioning properly; the '2' told Chris, and us, the drive was not ready for some reason. It took only a few minutes to make voltage measurements at the power connector in the MultiPak, and also on the hard drive.

With respect to the ground potential on pins 33 or 34 in the edge connector in slot 3 of the MPI, there should be +12 VDC on pin 2, -12 VDC on pin 1, and +5 VDC on pin 9; these were okay in my case. At the hard drive, we measured voltages on the four-pin molex connector. With respect to ground on either of pins 2 & 3, we found the proper +5 at pin 4, and the +12 at pin 1, but only until we attempted access of the hard drive. I quickly determined that the current limiting feature of the power supply was working, but not in my favor!

A new power supply has since been procured, and the hard drive is working just fine. Now the problem becomes what to do with the over 78,000 free sectors I have to play with. That's where I have to depend on the rest of the OS-9 community, to come up with the things I need to "stuff" this thing.

My thanks go to Chris Burke for developing and marketing, and providing excellent support for, the Burke & Burke XT-RTC, to Bill Brady of the OS-9 User Group for outstanding support, and to Keven Pittsinger for all the help and support in the local area. Thanks also, in advance, to the OS-9 User Group for all the wonderful software I'll be looking forward to playing with in the future!

Jerry Murphy, K8YUW

GEnie <HAMRADIO>
CFN <aa300>

April 21, 1988

TANDY CORPORATION ANNOUNCES MAJOR BREAKTHROUGH IN OPTICAL MEDIA: TANDY THOR-CDTM, THE FIRST CD-COMPATIBLE RECORD & ERASE TECHNOLOGY

NEW YORK CITY-- Tandy Corporation announced today a revolutionary development in optical disc media: TANDY THOR-CDTM. With the introduction of TANDY THOR-CD technology, it is now possible to record and erase digital information on a CD-compatible optical disc.

Using a laser beam, TANDY THOR-CD can repeatedly record, playback, store and erase music, data or video on a disc that can be used with all existing CD audio and CD-ROM players.

Just as important, TANDY THOR-CD will be an inexpensive media. It is expected to be less expensive than alternate digital audio formats, including digital audio tape (DAT).

"TANDY THOR-CD will have applications in several fields of electronics," stated John V. Roach, CEO and Chairman of the Board of Tandy Corporation. "TANDY THOR-CD's commercialization in audio should be rapid, its applicability in mass memory is long sought after, and it may have video applications as well."

What makes TANDY THOR-CD the technological breakthrough in optical media is that the pits, while environmentally stable and permanent in nature, can be erased, allowing editing and re-recording, over and over again.

Because the optically-formed pits resemble those in a conventional, molded CD in fit, form and function, TANDY THOR-CD retains all of the extraordinary qualities of current CDs.

TANDY THOR-CD technology is the result of research and development at the Tandy Magnetic Media Center in Santa Clara, California. Exhaustive testing has conformed TANDY THOR-CD's ability to record, erase and playback digital information that is virtually indistinguishable from the original source material.

What's more, erasing a previously recorded signal instantaneously returns the media to its original state, ready for the next recording.

"For several reasons," according to Robert McClure, President of Tandy Electronics Manufacturing, "the first commercial use of TANDY THOR-CD will be CD-audio. We believe there is a present and substantial market for a recordable CD-audio disc. CD-audio is also the least demanding on the hardware and the media. The additional cost in electronics and drive mechanisms should permit play and record decks to be offered in the early years of development for under $500."

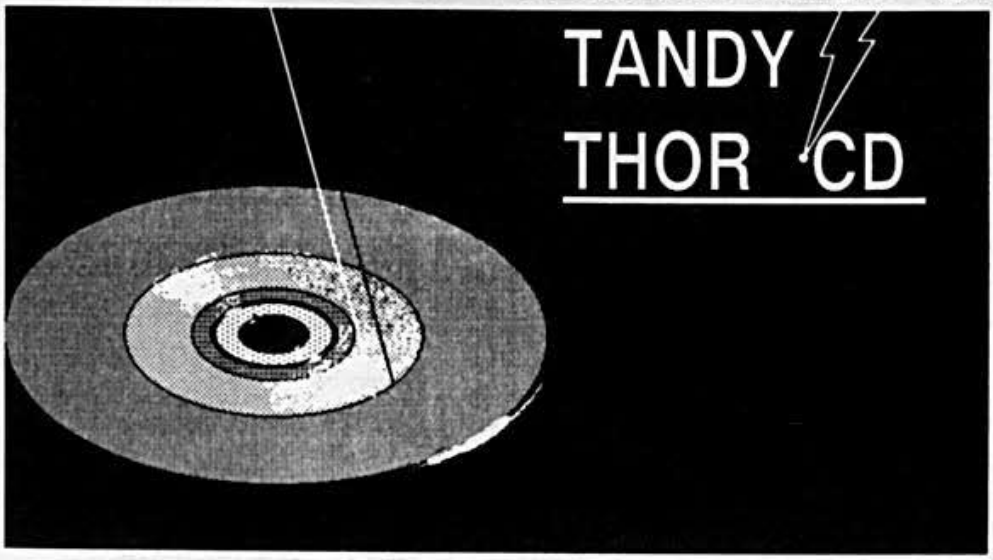
"The next likely commercial product," continued McClure, "is a data storage device which requires greater precision and error checking capabilities. TANDY THOR-CD technology will fit in the high-density storage field with storage capabilities in the hundreds of megabytes per five-inch disc."

The access time relating to TANDY THOR-CD is comparable to CD technology, so there is no difference in access time or data transfer rates between TANDY THOR-CD and CD-audio and CD-ROM.

"In a practical sense," added McClure, "optical disc access times are comparable to floppy discs. Access times projected for the future are even more encouraging. With access time being a function of equipment, rather than media, new development of extremely low-mass holographic heads show promise of dramatically reducing access times comparable to that of hard discs."

"Tandy," stated Roach, "is actively working with key electronics innovators around the world to license this technique for use in hardware and for production of media. The likelihood that very low cost mechanisms to implement the technique will be developed makes it highly attractive."

Organizations interested in participating in the development and production of TANDY THOR-CDTM Technology should contact TANDY THOR-CD Technologies, 1300 One Tandy Center, Fort Worth, Texas 76102. Telephone: (817) 390-3693.

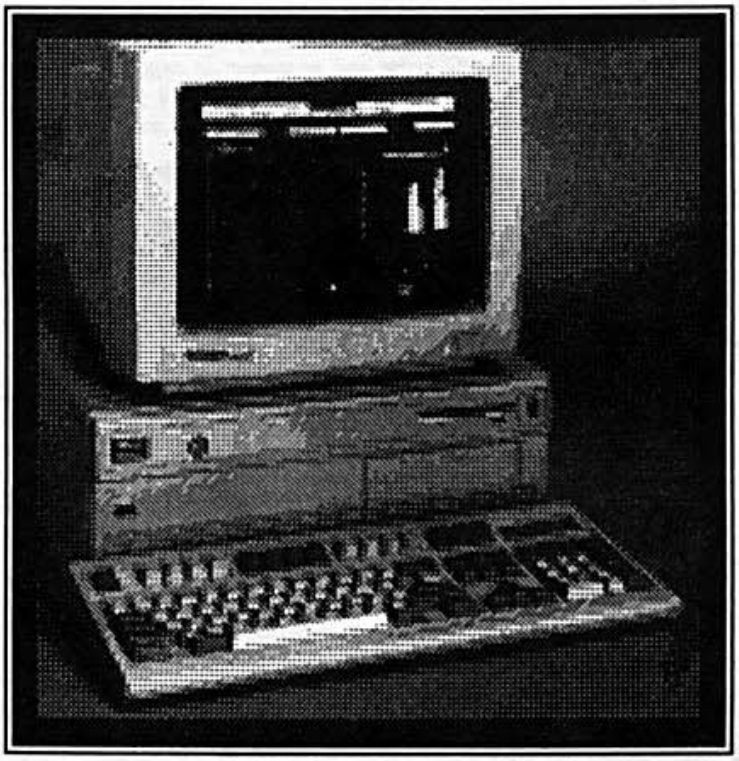


TANDY THOR-CD playback technology follows the same technique used in conventional optical discs: using a laser beam to read a series of microscopic pits in a light reflecting disc.

Tandy is a registered trademark of Tandy Corporation. TANDY THOR-CD is a trademark of Tandy Corporation.

Is This computer the next OS-9 "Mainframe"?

TANDY



5000MC

Tandy has announced the 5000 MC Professional System. OS-9 experts who have studied the Intel Series CPU chips used in the IBM PC and clones say that the 80386 is the first in this series capable of supporting true multi-tasking, multi-user... hence OS-9.

Microprocessor:	Intel 80386	**Keyboard:**	101 keys
Clock Speed:	20 Mhz	**Expansion:**	5 IBM Micro- Channel (2-32 bit, 3-16 bit); 2 memory slots
Math Co-processor:	Optional 80387 20Mhz		
Memory Cache:	Intel 82385 32k	**Interfaces:**	Mouse Port, 1 RS-232 port,1 parallel printer port
System Memory:	2MB Standard 16 MB possible via slots.	**Clock:**	Battery Backed
Video Support:	320x200 pixels x 256 colors 640x480 pixels x 16 colors 9x16 box 16 colors (text)	**Dimensions:**	6 1/8 x 17 x15 1/2" HxWxD
Disks:	1.44 mb 3.5" floppy internal, SCSI , ST-506 MFM 84 MB 15ms EDSI 2 drive capable	**Price:**	$4999, $6499 w 40 meg, $6999 w 84 meg OS/2 Non- Multi-User $325.00
Disk Controllers:			

Update to Tandy FD-502 Drive fix, page 16. Kevin reports that all Tandy 500 series drives need a similar fix. We will post more info here when it becomes available. Mean time, check your favorite on-line service if you are having problems.

Coming Next Issue:

Microwares CBug, C source debugger!

Windows for the Atari ST!

OWL-Ware IBM keyboard adapter!

Complete UG Library description, including latest rev numbers.

CoCoBin Revisited.

Latest Wiz news.

Sculptor review.

Users Poll.

Also coming soon:

Home Publisher

Phantomgraph

CoCo 3 style screens on the Atari!

Kevin Darling has been working on multiple device windows on the ST/OSK. Check the Compuserve and Delphi data libraries for Beta Copies of his system modules!

Become a **Wiz** developer. The next version of Wiz will allow user installable extensions such as protocols, terminal emulators, and autopilots. If you wish to start work in this area, you can become a registered Wiz developer. A fee of $25 is required, plus $10 for the VT-100 extension if desired. You will be sent Alpha copies of the programs, plus notes on how to create extensions. This offer is open to programmers and non-programmers alike, but for a limited time. If you do not have a Wiz Manual, you will need to purchase same, cost is $7. Contact the author (Bill Brady) NOT FHL.

Official UG Tee Shirt STILL Available!

Announcing the availability of the official OS-9 Users Group Tee Shirt! The cotton-polyester short sleeve shirt is imprinted with a very high quality "full front" four color silk-screened image that has to be seen to be believed (attendees of the April, 1987 RainbowFest in Chicago, know what we mean)! The shirts are available to members for $15.00 (U.S.) each alone, or $10.00 (U.S.) if accompanied by payment of OS-9 Users Group membership or renewal dues. The price per shirt is also $10.00 (U.S.) if three or more shirts are ordered at one time. Postage to anywhere in the U.S. and Canada is included in the price. Make sure you carefully specify sizes (adult S, M, L, XL) of all shirts ordered. Please allow 6 to 8 weeks for delivery.

Bonus: you may also redeem two OS-9 Users Group "donation credit" post cards for one shirt.

WHAT IS TWIN CITIES OS9 USER GROUP?

The Twin Cities OS9 User Group is a group of individuals throughout the Twin Cities and surrounding 7 county area who are interested in the OS9 operating system and its related programs and utilities. Primarily we were created to pass the word about OS9 to everyone and anyone who will let us bend their ear.

We are interested in obtaining members who are already familiar with OS9 as well as the general day to day user who wishes to know more about this fantastic, well kept secret. We hope to exchange many ideas on the operation of the system in general and in the various applications and utilities in particular.

TCOS9UG operates a 24-hour, 7-day on-line forum with message and want-ad sections as well as a complete library in public domain and shareware download files. We welcome your comments, suggestions and uploads.

TCOS9UG INFORMATION:

ADDRESS:

Twin Cities OS9 User Group
P.O. Box 12297
New Brighton, MN 55112

PHONE NUMBERS:

DATA:
(612)780-8936 24HRS 300/8/1
1200/2400 on-line soon

VOICE:
(612)780-2719 11AM-2PM
ONLY, Please 7 Days a Week

SYSOP:
Daniel G Cook (DAN)

Electronic Mail Addresses for Users Group Officers

	CompuServe	Delphi	GEnie
David L. Kaleita Pres.	70150,521	OS9UGPRES	
Pete Lyall Vice President	76703,4230	OS9UGVP	
George Dorner Treasurer	70536,106	OS9UGTres	G.DORNER
Kevin Darling Secretary	76703,4227	KDARLING	
Carl Kreider Librarian	71076,76	OS9UGLIB	
Bill Brady Editor	70126,267	OS9UGED	B.BRADY
Dale Puckett Director-at-Large	71446,736	DALEP	D.PUCKETT2

To sign up, call the service(s) of your choice at the following phone #s:

CompuServe: 1-800-848-8199 (ask for an "Starter Kit") Delphi: 1-800-544-4005
GEnie: (modem) 1-800-638-8369 when connected type HHH then at U#= type: XJM11877,GEnie

If need to make a choice, the following table is provided for comparison:

rate	300	1200	2400	sign-UP*	bill@
CIS	$6.50	$12.75	$12.75	$45.90	1 minute
Delphi	$7.20	$7.20	$ 7.20	$46.90	2 minute
GEnie	$5.00	$5.00	$12.50	$29.95	1 second

*including manual

There are other considerations when choosing a service. CIS is the oldest, has more files, and has the same rates 24 hrs, which is good if you need access during the day. Delphi & GEnie have the same rate for 300 & 1200 baud. (Delphi at 2400 baud also). Delphi offers free sign up to Rainbow subscribers. GEnie has the lowest rates, have no "minimum" session, and, since they have one of the largest networks, you are more likely to be able to access them with a local call or network surcharges. GEnie "block transfers" to the local node, which results in fast downloads.

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Please write your complaints in the space provided:

M$-DOS **Just say NO!**

The International Newsletter of the OS-9 Users Group
March/April 1988

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MOTD
MESSAGE OF THE DAY

88/05/26
Address Correction Requested

RAINBOWFEST - CHICAGO!
May 20 - 22 1988!
Hyatt Regency Woodfield