



THE NEWSLETTER FOR  COMPUTER USERS

# COLOR MY WORLD

by Richard White

For over four years now, I have run a monthly column in our local Cincinnati Tandy User Group Newsletter devoted mainly to the CoCo. Of course, I have allowed myself to get diverted to other things on occasion. There comes a certain glee in reading reports of losses at Apple and Commodore and our membership enjoys these reports as well.

I'm finding more and more material on OS-9 and its software to use in the column. With MOTD going on a monthly basis, there is going to be a need for material, so I am going to take excerpts from my CINTUG column and send them on to your overworked editor. Those that pass his tests will occasionally, not monthly, make the pages of MOTD.

As I slowly evolve towards OS-9 based tools, I recently bought the DynaStar/DynaForm word processing package. DynaStar is a Wordstar like text editor while DynaForm is a document formatter and printer. When developing a document in DynaStar, a large variety of commands can be included to control document formatting by DynaForm.

DynaForm handles margins, headers, footers, page numbering and a variety of other text formatting options. One is the ability to print personalized form letters. When the task was laid on to produce our User Group membership renewal letters a few days later, I was ready.

I was able to download the file of expired members from a member's Tandy 6000 Xenix system. He made the file in one-up mailing label format at my request. He then set me up to log onto his machine and list the file to my buffer. Of course, we had a few problems. These were mainly transmission errors since there was no error checking. Finally, I listed the file three times and saved it to disk each time. In three copies it was unlikely that the same transmission error would occur each time. Two copies were printed and the third loaded for editing using Telewriter under CoCo DOS.

Since the file was in mailing label format, I was able to print labels for both the mailing envelope and return envelope directly from Telewriter. A few months later, I tried to do this using DynaStar and DynaForm and had no end of prob-

lems, but that is for a later article.

With the labels done, I transferred the file to OS-9 using D.P. Johnson's file transfer utilities. Next the file was divided into old expirations, recent expirations, current expirations and future expirations.

The next step was to edit the files in DynaStar into a form to feed DynaForm. To print personalized form letters, variable names and their order of appearance are declared at the beginning of the letter file. The filename where DynaForm will find the information for these variables is also declared at the beginning of the file. Then the variable names are placed in the letter file where you want variable data to appear. Here is an example.

```
<full-name>
<address>
<city> <zip>
```

Dear <first-name>,

Now the order that data must be in the name file is defined. DynaForm requires that a character that is not used elsewhere in the file, like a slash or \*, start the file. The text for the first variable follows immediately on the same line. Each new block of variables is preceded by the same character.

One letter was saved as "renewal." So I typed "df renewal" and waited for action. Wow! The disk drive started and

ran for the next 25 minutes. The printer started and kept printing. It looked like the best thing for me to do was to start putting labels on envelopes and start stuffing. I have a 64K printer buffer so the printer stopped some 15 minutes after the drive was done. Fifty personalized, signed letters were ready for the mailbox in less than an hour.

One of the stars of this is the Digital Devices Printer Buffer. It substantially speeds the operation since it decouples the printer and the computer. The computer never waits for the printer and the printer never waits for the computer. Similar results are available from a print spooler except the CoCo doesn't have the RAM to spend under OS-9. Besides, when the computer comes back, it's all yours.

In many respects, like macros, file inclusion, files larger than the buffer, footers and a number of conditional printing options, DynaStar/DynaForm surpass Telewriter under RS-DOS which I had been using. Two important things I like are the type ahead buffer (a part of OS-9 rather than DynaStar) and file options immediately available from the entry menu of DynaStar. On the other hand, the Color Computer's memory limitations make it necessary to exit DynaStar and call DynaForm to print a document.

Dale Puckett has a good writeup of OS-9 version 2 in the January Rainbow.

*Continued to Page 6*

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# THE QT-20X REPLACING THE IBM-PC

by Bruce Warner

There's another 68020 machine on the market, and this one should create a stir in the community. It's the QT-20x from Frank Hogg Laboratories.

What makes the QT-20x so different is that it has the same foot print as an IBM-PC mother board, so it fits in the case of an IBM-PC or PC clone, in place of the IBM mother board.

The QT-20x provides a number of improvements over the QT-20. This one comes with a 68020 CPU operating at at least 12.5 MHz (there may be a 15 MHz version), a socket for a 68881 math coprocessor, real time clock with battery backup, parallel port, boot ROM, dip switch for rates and device for booting and DMA control of the SASI interface and the floppy controller.

The complete package lists for \$5,995, which includes OS-9 68K, Basic09, Stylograph with mail merge and speller, Dynacalc and QCom. If you order directly from FHL, you can get the system for \$4,495. If you've already got an IBM-

PC or clone, you can purchase the mother board alone as a PC upgrade for just \$2,995 (including the software).

Each expansion board for the QT-20x adds two megabytes of RAM and four serial ports, allowing you a maximum expansion of up to 28 users and 14 meg of RAM. The full expansion boards sell for \$995 each. If you only want the serial ports, you can purchase a four serial port board for \$250.

There is some question as to whether the IBM-PC power supply has enough power to handle the 28 users expansion, so the folks at FHL have arranged for a rack mount cabinet that will handle the load. It's larger than the standard QT-20x, but it provides you with all the power you'll need and all the extras needed for an industrial environment at under \$500.

Another added bonus is that your 68000 software runs directly on a 68020 system. Although you aren't taking full advantage of the 68020, you don't have

to buy all new software, resulting in more savings. As a matter of fact, there isn't a true 68020 OS-9 system yet, so the QT-20 and QT-20x are running under OS-9 68K (as are all the 68020 machines).

The QT-20, forerunner to the QT-20x, is based on the GIMIX GMX micro 20, the same board that is found in the Mustang-020. With the obvious advantages of the QT-20x and its lower price, FHL is reducing the QT-20 to \$4,150 without software. The full software package is available separately.

The QT-20x graphics board is in the design stage and should be available before Fall.

The final addition is an installed socket (not one of the expansion slots) designed for a memory protection module. No one can upset the system with this little gem installed.

If you want more information about the QT-20x, contact FHL at (315) 474-7856.



# PUTTING IT TOGETHER

## KNOW WHAT YOU'RE TALKING ABOUT

by Bruce N. Warner, Editor



June, 1986

Vol. 2, No. 5

Those who know me know that I believe in calling things the way I see them. When Steve Bjork called yesterday, he mentioned something that really set me off. The topic was the complaints we hear about Tandy and the way they fail us and the Color Computer.

Has Tandy failed the Color Computer user? Have they really let us down as much as we think they have? I wonder.

Where else can you buy an OS-9 system for under \$800 (including drives and computer), and get the advantage of a computer with a sound and graphics board included.

Let's add their customer services. Though the local dealer may not have the answers, the folks at Fort Worth do make an honest effort, and they do it with firm support. None of the other personal computer companies offer you a direct access to their company. Try getting an answer or a debug from Commodore or Apple.

In the same breath, we should contact Tandy when we have a Tandy problem. A recent example of what they're willing to do was exhibited when they started hearing complaints about OS-9 version 2.00.00. Their marketing staff got on CompuServe and asked for specifics. They weren't timid either. They really went all out looking for what needed to be done to fix version 2.00.00.

After their extensive search for information, they were given ONE bug. They continue to work at finding others, so they can fix the problems, but no one has been able to give them any other bugs to exterminate.

So what does this mean? It means we have to either put up or shut up. If we have a vendor that has fallen short of our expectations, we have a right to complain. On the other hand, if we're only complaining because we think it's the thing to do, we have to clean up our act. If we have a legitimate complaint, let's get the fix. If not, let's grow up.

### Supporting The Supporters

Have you noticed that the MOTD has advertisers? These are the people that make the MOTD what it is today. We're lucky to have them, but we have to support them the same as they support us. I'm not asking you to throw away your hard-earned money, what I'm asking is that you let the advertisers know where you heard about them. Let them know that the MOTD is the place you found out about their products.

### Something New

You've probably noticed a lot of new things in the MOTD lately, and we have another one this month! New product announcements. The rules for submitting your new product information is included in the premier edition, so take a look at what's new for your OS-9 system, or a new OS-9 system itself.

### Hard Times For The Editor

Not everything is easy for the editor of

the MOTD. This month is exceptionally bad. I'm missing columns from both Dale Puckett and Bill Turner. On top of that, a couple of promised reviews are missing. Now, if we could only get together enough information to get the MOTD's pages filled.

As much as I'd like, I can't do it all alone. Even the pieces that come in that aren't typed are often more than I can handle.

If you're thinking this is turning into another pitch for writers, you're right. I've been pushing, and I'll continue to push until I get enough copy that I don't have to worry about the next three issues of the MOTD.

What I'd really like to see is a monthly magazine called MOTD. We're not far from that, all we need are more advertisers and more copy. We've got what it takes in talent, and our publishing company can handle the job. What I want to know is if you can handle the load. Get involved. This isn't my UG, it's ours!

### Rumors Rumors

We've all been hearing rumors about a new Tandy Color Computer. My sources have been unable to say much of anything. Some are quiet because they just don't know, and others are quiet because they are unable to talk. I'm just hoping for a revelation once it is released.

What do I call a revelation? Oh, a real RS-232 port, a built-in disk system, both monitor and TV outputs, OS-9 Level II with at least 256K, upgradable to 512K, software compatibility, hardware compatibility, a parallel printer port, 80-column display, easy inclusion of a hard disk interface. I'd gladly give up just one or two of this list and still be happy.

Can Tandy deliver all that at a competitive price? If their attack on the MS-DOS market is any indication, we may even get more. All I can get from Fort Worth is that, "If there is a new machine, you can be sure we've listened to what people want." That isn't real conclusive, but it isn't a denial either.

Oh yeah, I've also been promised that when Tandy decides to release any new OS-9 products, I'll be among the first to know. Whatever I find out, you'll hear about it as soon as I'm allowed (acceptance of advanced information carries an agreement not to disclose any information about that product before an agreed date).

### Superwriters Hit The Pages Of The MOTD

We've all read various articles in the MOTD by Dale Puckett and Brian Lantz. We may be seeing some new writers coming our way. You may be surprised to see Jim Kent (author of Micro Illustrator), Steve Bjork and Bill Barden show up on these pages. I've been in touch with a lot of these people and most have been more than willing to give us at least one article for the MOTD.

Let's see, we have over 1,200 members, and if every member offers one article a

year, we'll be able to expand to about 200 magazine pages with a whole bunch of advertisers. Oops, there goes that dream of mine again.

### New Writer On Our Pages

Richard White has just joined the notable list of authors for the MOTD. Richard is a Color Computer user and has been hacking away at OS-9 for awhile now. He's shared some of his experiences with learning OS-9 and teaching his in-laws about using their Color Computer for more than a door stop.

There are a lot of you out there that are using their OS-9 systems for new and different applications. We should all learn more about OS-9 and how it works, on every machine that runs OS-9. I dare you 68K users and SS-50 users to submit as much copy as those little Color Computer users. Let's get with it!

### Spring Has Sprung

I just remembered what I hate about spring — it's pollen. This is the time of year I sneeze, choke, itch my eyes and generally feel miserable. How can so much beauty make me feel so lousy? You'd think I hated flowers and green. I don't. I just hate the way they make me feel.

### OS-9 Is OS-9

Brian Lantz has tasked us to get our act together. I couldn't understand what he meant until I found people putting down one OS-9 machine for another. Let's face the facts. Not all machines are the same, and not all OS-9 machines are the same. The differences are in how and when they were designed. While the Color Computer is the only one with graphics, it can't come close to the execution time of a 68000 or 68020 machine. To paraphrase a current commercial, "Facts is facts!" I've had as many as five Color Computers in my home at one time, and I'm not locked into a Color Computer. My next two computers will be a QT Plus (with 20 meg hard drive), and the Color Computer 3 (if and when it comes out). They're different machines built for different applications.

### Next Issue

I expect to have a lot of new and different information available for the next issue of the MOTD. Right now I'm heavily involved in getting my act together for RAINBOWfest in Chicago. We'll have our own booth again, and we'll be gathering all the information and rumors about what's happening with OS-9.

Most of this new information will be in the next issue of the MOTD, but some of it will be held over for future issues. We'll have a report on the OS-9 community breakfast, the feel of the market and the world of OS-9 will be what we're looking at.

Till next month, I want to leave you with this little thought. . . WRITE!

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# More Incredible!

Now there are **THREE!**

QT 20	68020
QT Plus	68000
QT	68008



The QT



The QT

The **QT** family of multi-user, multi-tasking computers supports from 4 to 20 users. Currently 9 models are available, ranging in price from \$ 1,595 to \$ 8,795. Models are available with the Motorola 68008, 68000 or the new 32 bit 68020 CPU. CPU speeds range from 8 Mhz to 16.67 Mhz; RAM size from 128K to 2048K and ROM from 2K to 256K. All the **QT**'s have a built in SASI interface and will support any hard drive. All **QT**'s include OS9/68K, the multi-user operating system with Basic, utilities, word processing and spreadsheet programs. The **QT**'s take up less than one cubic foot of space.

#### The QT series:

The basic **QT** has 128K RAM, 68008 CPU, 8 Mhz and will support 4 users and 2 printer ports. The single floppy version is priced at \$ 1,595 (Retail \$ 2,095) and is field upgradeable to 512K RAM and 20 Meg hard drive. This system sells for \$ 2,995 (Retail \$ 3,595).

#### The QT Plus series:

This **QT** has 512K RAM, 68000 CPU, 10 Mhz and supports 4 users and 2 printer ports. The single floppy version is priced at \$ 2,095 (Retail \$ 2,695) and is field upgradeable to 1024K, 8 serial ports and hard disk. The **QT Plus** 4 user system with 512K RAM and 20 Meg hard drive is priced at \$ 3,495 (Retail \$ 3,995). The 512K upgrade costs \$ 395 (Retail \$ 495).

This **QT** has 2048K RAM, 68020 CPU, 12.5 Mhz and supports 4 users and 1 printer port. This system can be expanded to 20 users with 16.67 Mhz. The **QT 20** with a 20 Meg hard drive sells for \$ 7,495 (Retail \$ 8,795).

#### QT Price List 1986

CONFIG.	DIRECT	RETAIL
QT 1 Drive	\$1,595	\$2,095
QT 2 Drives	\$1,750	\$2,295
QT 20 Meg HD	\$2,995	\$3,595
QT+ 1 Drive	\$2,095	\$2,695
QT+ 2 Drives	\$2,250	\$2,895
QT+ 20 Meg HD	\$3,495	\$3,995
QT 20 20 Meg HD	\$7,495	\$8,795

#### OS9/68000 SOFTWARE

Available Now

Sculptor	\$995 (\$695 for QT owners)
Microware C	\$400
Microware Pascal	\$400 Add 3.50 Shipping

1976 **FHI** FRANK HOGG LABORATORY 1986

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**315/474-7856**

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# LETTERS TO THE USERS GROUP

Gentlemen;

I just finished reading "Unix, the OS-9 Look-alike" by Brian Lantz [April 1986] and would like to say "Amen, brother" to your statements about being "OS-9 evangelists" and ending the "war of the hardware." Hopefully your excellent article will stir the hearts of all OS-9 people to shake off any lack of solidarity and become more cohesive and supportive. Microware has supplied us with an excellent tool and the hardware people have been most responsive to our needs.

Our office has been using OS-9 for about two years and for the last six months we have been running the 68000 version with a dental office program. Currently we have two terminals online. We are very pleased with the system's ability to get the job done speedily and effectively. I mention this to indicate my high interest and satisfaction with OS-9's capabilities. I have found it interesting that in every chance I get to discuss computers and dental office use that virtually 100% of my colleagues have never heard of the Motorola CPUs and OS-9 but most of them know something about the Intel chips, and the operating systems using these chips, including the hardware. No wonder. The newspapers, TV, magazines, and other media are constantly bombarding the public about the latter.

The amazing part of the whole thing is that our multi-user, multi-tasking system is so reasonable in price when

compared with ostensibly similar non-68 systems. For instance, one of my local colleagues put in a T.I. system with dental office software and it cost them many thousands of dollars more with no additional capability over ours. Plus, from what I've seen I don't feel their system runs as good.

You and the other officers and directors are to be congratulated for your willingness to take over the reins of the UG. The MOTD newsletter sure has grown up fast. It has an excellent format and is easily readable, unlike another piece of 68 literature that I receive. The new Logo is great.

I notice that the MOTD is carrying paid advertisements. In light of this I would like to suggest that the Editor set up a classified advertisement section for members and others who might like to sell or trade some of their used-unused equipment.

Again, thanks for the leadership you are providing the OS-9 UG.

Verdi F. Carsten, D.D.S.

## More Than A CoCo

Gentlemen;

I thought perhaps some of the Color Computer users in the group might enjoy seeing what my machine looks like. The entire system fits inside a walnut case I built using a Shoptsmith. Inside is a color

computer model D mother board along with a switcher power supply (12V, -12V, 5V DC). The PBJ Inc. CC-Bus provides extra expansion capabilities. Installed in this expansion bus is a PBJ WordPak 80-column card, a centronics port, and a battery back-up real time clock. I have also built my own dual hardware serial port that supports up to a Baud rate of 19.2K. The storage medial include two



double-sided, double-density TEAC five-inch floppy disk drives along with the Tandy controller card. I have moved the Reset button to the front and added an on/off key switch. A fan has been added that can be turned on or off. The keyboard is from an H-19 terminal and is the best keyboard I have ever used. My machine still supports the original Color Computer joystick ports, cassette port, and the old bit-banger serial port. I have

added an audio output along with a color composite video output. I have also built another A/D port that supports the joysticks or even a mouse. I plan on adding a hard disk as soon as I get both the money and the software to support it.

Granted, there are other computers around, but none are as cost effective as my CoCo. I have used mine for many tasks since it was a 4K machine. It has provided me with a fun hobby. It really came in handy while doing research for my master's degree. A friend of mine and I built a mobile robot for a thesis project. The computer not only helped a great deal with the word processing, but we used the Color Computer to draw maps created from robot telemetry data points (sonar and shaft encoder readings). We even put together a video presentation for our thesis dissertation using a combination of live action, animation, and titling from the Color Computer along with music and narration.

I could say that the Color Computer is the best computer around, but really, it's what you make out of it that counts. The more effort you put into learning about a system and using it, the more efficient it becomes, and the more you want to use it. All computers are basically alike deep down inside, it's just the bells and whistles that are a little different on each.

Bert Schneider

## NEW PRODUCT RELEASES

**EDITOR'S NOTE:** This is another first for the MOTD. We've decided to start placing announcements about new products at no cost to the distributing company. The purpose of this announcement is to allow our members a first look at new products coming to the OS-9 market.

The only rules for running a piece in this section is that the announcement must be about a new product, it must include the name and address of the distributor, and it must not exceed a single 8-1/2 by 11 inch page of text at 10 characters per inch and 6 lines per inch. The product must also either run or run under OS-9. Shorter announcements are preferred and will receive a higher priority for running.

### Upgrade Your PC To A 68020 Multi-User Computer

Frank Hogg Laboratory Inc., 770 James Street, Syracuse, NY 13203, (315) 474-7856, TELEX 646740

The QT 20x is a replacement motherboard and plug-in card that converts a

PC or PC clone into a 68020 computer.

The 68020 based QT 20x multi-user, multi-tasking computer board supports from four to 28 users and two to 14 megabytes of RAM. Price for the basic four-user/two-megabyte RAM board is \$2,995.

The QT 20x runs the OS-9/68K operating system. Bundled software includes: Basic09, utilities, word processing, spreadsheet, FHL Office System, backup and communications programs.

The QT 20x has a 12.5 MHz 68020 microprocessor with two megabytes of RAM. Also included on the motherboard is one parallel port, a real time clock with battery backup and room for additional ROM. All disk drives, both floppy and hard disk and any devices connected to the SASI port are DMA. DIP switches let the user select the boot up Baud rates and the boot device for auto boot.

The QT 20x's plug-in expansion boards have a full 32 bit wide buss. Seven full size cards, with two megabytes RAM and four serial ports per board, can be accommodated. That's a total of 14 megabytes and 28 serial ports/users. The serial ports all have full modem control

lines. (One of these boards is included with the basic system.)

In addition, the QT 20x's motherboard will support protected memory through the use of a plug-in board that does not use one of the slots.

Soon to be available options for the QT 20x include: Memory Protection Board, 68881 Math Co-Processor and Graphics Board.

### OS-9 And More On 68020

GMX Inc., 1337 West 37th Place, Chicago, IL 60609, (312) 927-5510, TWX 910-221-4055

GMX Inc. is proud to announce the availability of the GMX Micro-20, the first in a family of 32-bit MC68020 based single-board computers and related products. The GMX Micro-20 SBC combines a Motorola MC 68020 32-bit microprocessor and an optional MC68881 floating-point coprocessor with: 2 Megabytes of 32-bit wide RAM, up to 256K bytes of 32-bit wide EPROM, four serial ports, 8-bit parallel port, a 5.25" floppy disk controller, a SASI peripheral interface, a time-of-day clock

with battery backup. A 16-bit expansion connector allows the addition of off-the-shelf or custom I/O interfaces.

The board, measuring only 8.8" x 5.75", mounts on an uses the same power connector and supply voltages as a standard 5.25" disk drive. Power requirements are +5 VDC at 4.5A max., and +12 VDC at 125Ma. A separate board, included with the GMX Micro-20, provides RS-232 level translation and four DB-25 type connectors for the serial ports. A DC-to-DC converter supplies the necessary -12 volts.

The price of the GMX Micro-20, in lots of 25, is \$2,200.00. Delivery is from stock to 30 days ARO.

The price includes Motorola's 020Bug monitor/debugger and a full set of hardware diagnostics in PROM. A PROM-able, real-time multi-user/multi-tasking operating system is optional. Planned additions to the GMX Micro-20 family include a version with hardware memory management, standard and intelligent serial I/O expansion boards, and a color graphics interface. System packages, with cabinet, power supply, and floppy/hard disk drives are also available.



# OS-9 SUPER SUMMER '86

by Brian A. Lantz

It's times like this that the OS-9 Community needs to speak up. There is a drastic need that is not being fulfilled. How can I go out and soak up the sun without a portable "notebook" computer that runs OS-9? Come on now, manufacturers, make my day. Otherwise, I will be destined to have the "winter whites" throughout the year. There are too many exciting things going on recently in the OS-9 world to get much distance between you and your OS-9 machine.

But, in spite of the lack of a computer that I can take with me 24 hours a day, this summer will be an OS-9 super summer. There are several new products that should finally be announced during the summer. There will be many exciting plans for the future of the UG announced during the next few months. There will be hundreds of reasons to confirm your faith in OS-9 as THE operating system. If the Macintosh is the computer for the rest of us (or really the rest of THEM), then OS-9 is the operating system for the BEST of us.

## New Version of 68000/OS-9 C Compiler

Microware has announced the release of Version 2.0 of the OS-9/68000 C compiler. This version, in addition to fixing a few known bugs, adds a great deal more capabilities. Probably the best is that the first 256 characters of all identifier names are now significant, with excess characters being ignored. Also on the list are improvements on the preprocessor, the assembler (no, not for 68020, yet), the linker, and the debugger. There have been 19 new functions added to make using OS-9 system calls even easier. The updates for current owners are available through Microware.

## 6809 FORTRAN Compiler a Reality

And they said it couldn't be done. Microware has announced the availability (at last!) of the OS-9/6809 Level II FORTRAN compiler. Note the description: Level II. If you are using Level I OS-9 (or OS-9 on the original Color Computer), you can NOT use this compiler. Though Microware was able to pack a powerful FORTRAN compiler into the addressing space of a 6809, they couldn't quite get it into the memory available on a Level I machine.

OS-9/6809 Level II FORTRAN is a subset (but just barely) of the FORTRAN 77 ANSI standard. The only differences between the two are due to the physical memory limitations of working in a 64K addressing space. The floating point representation is the same as that used by the C compiler, which was a smart move. There is a full math library, including sine, cosine, tangent, arc sine, arc cosine and arc tangent for both single and double precision.

Now for the bad news; the price. A little steep at \$253. But, considering that on lesser operating systems (MS-DOS, for instance) you would pay that much or more for an editor, I think we will survive. All interested should call or write Microware.

## Looking For a New Job?

Try sunny Des Moines! I am told that Microware is accepting applications for at least one additional programmer. Applicants "should be well oriented with OS-9, operating systems, and compiler technology." All interested parties are instructed to "send a resume containing your educational background, work experience and salary requirements to the attention of the Personnel Director at Microware. No phone calls, please!" Microware's address is 1866 N.W.

114th Street, Des Moines, IA 50322.

## OS-9/68000 Comes To Apple Users

About once a week, for the last few months, I have learned of a new OS-9/68000 machine or port. First Hallock and TLM brought OSK to PC hardware with co-processor boards. Then the SONY/PHILIPS announcement that OS-9/68000 would be the operating environment for the CD-I (Compact Disk Interactive) players to be on the market in the near future. Then TLM/Microtrend's finally announced the rumored port of OS-9/68000 for the Atari ST, with a port for the Amiga announced for release in a few months.

Well, at Comdex a few weeks ago, Microtrend also announced another port of OS-9/68000, but this one I hadn't heard rumor about. Frankly, it SHOCKED me! I am told that in a few months I can exterminate my mice, close my windows, and run good 'ole OS-9/68000 on my *Macintosh*. The only thing I can think of to say is, "Thank you, thank you, thank you!"

I thought that I was shocked. I forgot about Dale Puckett! After telling him, you would have thought he had died and gone to heaven. He must have asked me at least 20 times, whether I was kidding him or not.

In investigating about the Mac port, I found out about another OS-9/68000 product that was a pretty well kept secret, until now. Microtrend distributes a 68000 co-processor board for the Apple IIE computer, and guess what operating system it runs. I have told you just about all I know about it at this time (with the exception that it contains 512K of memory on the board). By the time you read this, RAINBOWfest will have

come and gone, and I will have seen this board in operation. I will have a preview of some kind for the next issue.

Microtrend's address is 650 Woodfield Dr. Suite #730, Schaumburg, IL 60195.

## What is a 68070?

This is a question that my buddy Marc Johnson started asking after hearing it mentioned in one of the CD-I articles in InfoWorld. Well, he started reading everything that he could get his hands on, until he finally found out. You will find the results of his labors in this issue. Thanks, Marc. That's what the UG is all about; Each one of us pitching in to help one another.

## Welcome to the New "Rumored" 68020 Computer

Well, last month I told you that when we could speak about "rumors" (that is, when they were ready to be announced) you would read all about them here in the MOTD. Well, FHL's new "QT 20x" is real, and boy does it sound like a great machine! And with four users, two megabytes of RAM, a 12.5 MHz 68020 microprocessor, one parallel port, a real time clock with battery backup and all disk I/O using DMA at a price of \$3,695 in the one floppy drive version, the price is good. Congratulations FHL (and of course, Hazelwood) for another winner!

## Meanwhile, Back to the Sun Lamp

If things go as I expect in the next month, I should be able to confirm some other rumors in next month's MOTD. Everywhere you look, there are new and exciting things happening in the world of OS-9.

Well, while I and my computer try to get a tan under this sun lamp, I hope you and your summer plans start taking form. Make sure to stay close to your computer, and don't miss the next MOTD!

The good news is a variety of new features. The bad news is that some OS-9 software will not run under version 2. The good news is you don't have to throw version 1 out. I will run O-Pac/Dynastar under version 1 and other things under version 2.

Computer Centers take note! Here is how to get BASIC09 up and running. This has been a continuing question since the language came out. The fact that it is a question is due to lack of understanding of OS9. BASIC09 and RUNB are distributed on a disk without a commands directory. The user must copy BASIC09 and RUNB to the commands directory of a system disk or change the execution directory to the directory containing BASIC09 or call the interpreter using its full path name. The first option is the best since you will be wanting to use other procedures in the commands directory from BASIC09 at various times.

I have customized an OS-9 system disk for BASIC09. You won't use ASM, DEBUG, BINEX, EXBIN, DCHECK, DUMP, LOGIN, TSMON OR TEE when programming in BASIC09 so all of these can be deleted from a BASIC09 disk or not copied to one to begin with. The DEFS directory and its files can go as well. Now look at what's left in the CMDS directory and decide what fits the probably-won't-use category and clean it out as well. You should now have a pretty bare bones CMDS directory with plenty of room for BASIC09, RUNB and have disk space for working files. The other two files on the BASIC09 disk are optional and I don't keep them on my working disks. But, I am not into graphics and don't need the GFX module.

I use the STARTUP file to setup for and boot BASIC09. It looks like this.

```
PRINTERR
SETIME </TERM
LOAD BASIC09
EX BASIC09 #14K </TERM
```

Obviously, for this to work you need to have PRINTERR and SETIME remaining in your CMDS directory.

I always set the date and time when coming up for BASIC09 work. When I want to print a listing of a procedure module, I first go to BASIC09 System Mode. I then type \$DATE T /P. This makes an OS-9 call, loads DATE and send the current system date and time to the printer. Having time/date stamped on the sheet I then type LIST myprogram >/P to list it on the printer. Note that DATE is another procedure to keep in your CMDS directory.

#### Making A Believer

My brother-in-law and his family were visiting. He bought a CoCo a number of years ago along with a disk drive and DMP 200, but had done very little with it. Neither had his two girl and wife, or so we thought. So Art asked what he might be able to sell the system for. I asked why it was not used. Well his wife and older daughter felt an electric typewriter would be more useful since they had not been able to make VIP Writer work. I understood. VIP might qualify as user hostile compared to other offerings.

So we had a little demonstration. I showed them DynaStar and how easy it was to get up and running. But, that's not for them either. Turning the computer into a typewriter was easier to handle. I wrote a short BASIC program that did just that. Julie, a 16 year old, watched closely following what I was doing with obvious understanding of the process. She mentioned that she has worked through the Color Basic book last

summer. Mom hadn't realized what she was doing nor what she had learned till now and was impressed. They took the program home on disk and quickly had it up and running. It worked well enough to show that something a bit more powerful was needed.

I had recommended that they purchase DeskMate, particularly with the half price sale of CoCo software then going on. So I decided to buy a copy myself to see what it would do. I am impressed. DeskMate comes on a nearly full 35-track disk. A minimum version of OS-9, version 2 is on the disk. Type DOS and the system boots directly into a PMODE3, multi-color graphics menu asking you to enter the date and time. Now comes the Main Menu with the six applications available in Folder 3 shown as icons with names beneath.

DeskMate documentation, which is very good, particularly when compared to that for the Tandy 1000 version, refers to commands being issued using the Control and Alternate keys. A number of times, the reader is reminded that some CoCos have no Alternate key and that the "@" key is the substitute. Likewise, the CLEAR key substitutes for the Control key. Obviously, many of the details of the next CoCo have been known for a long time at Ft. Worth.

The folders refer to directories which the user can select by using @-right arrow to move to the folder area. Type @-\* and a new set of icons appear at the top of the screen after some disk action. Upon selecting the folder icon, I came to discover that folders 1 and 2 pointed to directory /D0 while 3 and 4 pointed to /D0/CMDS. These assignments are changeable from this screen.

Choose the printer and you get a spiffy diagram with a dimensioned page showing current margins, line length and lines per page. Hitting the <ENTER> key moves the cursor to each setting in turn, inviting the user to make any changes one at a time. Similarly, you can change the time and date, change the screen display colors and whether it is dark on light or light on dark. Choose the mouse and choose if you want to use a joystick or mouse along with the keyboard. All choices are recorded in a config file and will be active each time you run the program. And these choices can be changed from any DeskMate application.

Next to the printer icon is a calculator. Choose it and you see a calculator on the screen. Type in numbers and operators as you would in any calculator to make it work. It even has a memory you can add to, subtract from, recall or clear. Leave calculator and you return to the application you came from.

There are six applications in folder 3. These are Calendar, Index Cards, Ledger, Paint, Telecom and Text. All except Paint are similar to the Tandy 1000 counterparts. Telecom requires use of the RS-232 ROM pac. Paint is a four color picture editor — a simplified Co-CoMax. Each application has a menu bar at the top with a limited choice of pull-down menus. Files is always a choice with sub-menu choices which always includes CLOSE. You choose CLOSE to close all active files and leave the application.

Sensitive as I am to spreadsheets, I gave Ledger a close look. I expected no more than a minimum spreadsheet and that is what it is with a few nice touches. It is in the Multimate-Tandy 1000 Deskmate tradition except GLORY BE! One can set column widths individually. Less exciting is the column width automatically expanding to accommodate wider labels. I don't think I want my carefully designed columns changing automatically.

A word about the display. It's 32 characters by 22 lines which is all you can reasonably expect for PMODE3 graphics. It is always graphics. It should work even on a crummy color TV which has to be the design objective. And its reasonably fast.

So to the bottom line. Should you recommend this package to the new, still wet behind the ears CoCo Owner. Should this be recommended to the older owner who has quit using the machine because of user hostile software. Absolutely! Used at point of sale it could sell bunches of CoCo's. And being OS-9 based, it will not become obsolete on future machines. On the other hand, you cannot send printer commands to cause selective underlining for example. It is a given that as beginner's needs increase, that they will eventually have to buy advanced software.

There is a place for simpler software in this complex world. I was exposed to just such an instance this afternoon. I was working up a file to print a bunch of identical mailing labels for return addresses. It was easy enough to do in

DynaStar. Make one and copy it a few times then define a new block including all the labels that have been copied up to that point. Then copy the new block until you get tired.

The rub comes on printing. I floundered around getting the right dot commands at the beginning of the file to try to set the top, bottom and left margins to 0 and defeat automatic page numbering (.FO). I never did get it right. Finally I went to work in deskmate. I loaded my DynaStar file and deleted the dot commands with just a few keystrokes. Next I set the printer for zero margins successfully. When it came to printing time, an @-2 set things going. And it worked right the first time.

Now I am writing these final paragraphs in DynaStar. When I print hard copy for the editor, I will want a header on each page, have the copy double spaced and suppress the page number at the bottom, but have one in the header. I cannot do these things from DeskMate. So do not look down your nose at simpler programs such that they cannot make life simpler for you.

## UPDATE OFFICER ON-LINE IDS

The new MOTD has had a lot of changes come about, and the list of officers published earlier this year was no exception. To make the list as complete as possible, I've taken the initiative to put together a more complete list. According to my records, the following is a complete list of all OS-9 Users Group officers and committee members and their current CompuServe ID numbers (as of May 5, 1986):

Title	Name	CompuServe	Delphi
President	Brian A. Lantz	70120,376	OS9UGPRES
Vice President	Bill Turner	<none>	OS9UGVP
Treasurer	Steve Odneal	70466,1427	OS9UGTRES
Secretary	Dave Gibson	<none>	OS9UGSEC
Director-at-large	Dale Puckett	70010,542	OS9UGDIR
Software Librarian	David L. Kaleita	70150,531	OS9UGLIB
MOTD Editor	Bruce Warner	70370,720	OS9UGED
Chairman, Finance Committee	George Dorner	70536,106	
Committeeman, Finance Committee	Marcus Johnson	<none>	
Chairman, Membership Committee	Joe Dubuc	70120,404	
Committeeman, Membership Committee	Robert Ringrose	<none>	
Committeeman, Membership Committee	James S. Petty	<none>	
Chairman, Software Exchange Committee	Carl Kreider	71076,76	
Chairman, Public Relations Committee	Bob Rosen	<none>	
Committeeman, Public Relations Committee	Dale Puckett	70010,542	
Chairman, Software Review Committee	Marcus Johnson	<none>	
Committeeman, Software Review Committee	Bert Schneider	<none>	

Did I forget anybody or have I made any errors? If you think so, please leave me a message ASAP!

Dave Kaleita, 70150,531

## WHILE SUPPLIES LAST

The OS-9 UG has the last of the OS-9 T-shirts that Microware made for last year's Des Moines Seminar. There are two types; the clean one, and the "provocative" one. The clean one says "To be good, you have to be different." The "provocative" one says, "Our software keeps your hardware up," and features a female on a street-corner. These are both

great shirts, and a great way for us to advertise OS-9 to the multitudes. If you wish to get one or both of these shirts, send \$7.50 for each shirt to the UG address, marked "ATTN: MISC." Please indicate which shirt and the size (small, medium, etc.). There are only a few of these left, so if you are interested, act fast!

# GETTING AROUND THE MAZE OF MAZE

## A BASIC09 PROGRAM

by Tim Grovac, Associate Editor

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Solving the method of producing a computer program can feel like going through a maze. Thanks to Tim Grovac, you can now create a maze using your OS-9 computer with Basic09. One word of caution in selecting the matrix. When prompted for the width and length, your response is the grid width and length, not the number of columns and rows your printer produces. Enjoy this Basic09 program and here's hoping you can find your way out!

---

\*THE #SHADE\*

```
PROCEDURE maze
0000 REM maze generator program
0019 REM
001C REM This program was originally written in some
004A REM Computer games book that I had years ago and
0079 REM have since lost. My apologies to the author.
00A9 REM
00AC REM Adapted for basic09 by Tim Grovac
00D0 REM
00D3 PRINT TAB(28); "Maze Program"
00E7 PRINT \ PRINT
00EB DIM prntr,ppath:BYTE
00F6
00F7 REM 09/19/85: The following 2 lines added by Darryl Hock and
0133 REM * David L. Kaleita to guarantee a new random maze
016F REM * every time you run the program:
019B seed=((VAL(MID$(DATE$,5,1))*100+VAL(MID$(DATE$,7,2)))*100+
VAL(MID$(DATE$,10,2))*100+VAL(MID$(DATE$,13,2))*100
+VAL(MID$(DATE$,16,2))
01D7 seed=RND(-(seed))
01E1
01E2 ppath=1
01E9 100 INPUT "What is the width and length (max. 25,100)",h,v
0222 IF h<>1 AND v<>1 THEN 110
023A PRINT "Meaningless dimensions. Try Again. "
0261 GOTO 100
0265 110 IF h>25 THEN
0275 h=25
027D ENDIF
027F IF v>100 THEN
028C v=100
```

```

0294      ENDIF
0296      DIM w(25,100),b(25,100):BYTE
02B3      FOR x=1 TO 25
02C5          FOR y=1 TO 100
02D7              w(x,y)=0
02E7          NEXT y
02F2      NEXT x
02FD      FOR x=1 TO 25
030F          FOR y=1 TO 100
0321              b(x,y)=0
0331          NEXT y
033C      NEXT x
0347      INPUT "Output to <S>creen or <P>rinter? ",c$
0370      IF c$="P" OR c$="p" THEN
0385          OPEN #prntr,"/P":WRITE
0392          ppath=prntr
039A      ELSE
039E          ppath=1
03A5      ENDIF
03A7      PRINT #ppath
03AD      q=0 \z=0
03BD      x=INT(RND(1)*h+1)
03CF      FOR i=1 TO h
03E1          IF i=x THEN 173
03F1          PRINT #ppath,".--";
03FE          GOTO 180
0402 173      PRINT #ppath,". ";
0412 180      NEXT i
0420      PRINT #ppath,"."
042A      c=1
0432      w(x,1)=c
0442      c=c+1
044E      r=x \s=1
045E      GOTO 260
0462 210      IF r<>h THEN 240
0475      IF s<>v THEN 230
0485      r=1 \s=1
0495      GOTO 250
0499 230      r=1 \s=s+1
04B0      GOTO 250
04B4 240      r=r+1
04C3 250      IF w(r,s)=0 THEN 210
04DD 260      IF r-1=0 THEN 530
04F4      IF w(r-1,s)<>0 THEN 530
050F      IF s-1=0 THEN 390
0523      IF w(r,s-1)<>0 THEN 390
053E      IF r=h THEN 330
054E      IF w(r+1,s)<>0 THEN 330
0569      x=INT(RND(1)*3+1)
057B      ON x GOTO 790,820,860
058F 330      IF s<>v THEN 340
05A2      IF z=1 THEN 370
05B2      q=1 \ GOTO 350
05BE 340      IF w(r,s+1)<>0 THEN 370
05DC 350      x=INT(RND(1)*3+1)
05F1      ON x GOTO 790,820,910
0605 370      x=INT(RND(1)*2+1)
061A      ON x GOTO 790,820
062A 390      IF r=h THEN 470
063D      IF w(r+1,s)<>0 THEN 470
0658      IF s<>v THEN 420
0668      IF z=1 THEN 450
0678      q=1 \ GOTO 430
0684 420      IF w(r,s+1)<>0 THEN 450
06A2 430      x=INT(RND(1)*3+1)
06B7      ON x GOTO 790,860,910
06CB 450      x=INT(RND(1)*2+1)
06E0      ON x GOTO 790,860
06F0 470      IF s<>v THEN 490
0703      IF z=1 THEN 520
0713      q=1 \ GOTO 500
071F 490      IF w(r,s+1)<>0 THEN 520
073D 500      x=INT(RND(1)*2+1)
0752      ON x GOTO 790,910
0762 520      GOTO 790
0769 530      IF s-1=0 THEN 670
0780      IF w(r,s-1)<>0 THEN 670
079B      IF r=h THEN 610
07AB      IF w(r+1,s)<>0 THEN 610
07C6      IF s<>v THEN 560
07D6      IF z=1 THEN 590
07E6      q=1 \ GOTO 570
07F2 560      IF w(r,s+1)<>0 THEN 590
0810 570      x=INT(RND(1)*3+1)
0825      ON x GOTO 820,860,910
0839 590      x=INT(RND(1)*2+1)
084E      ON x GOTO 820,860
085E 610      IF s<>v THEN 630
0871      IF z=1 THEN 820
0881      q=1 \ GOTO 640
088D 630      IF w(r,s+1)<>0 THEN 820
08AB 640      x=INT(RND(1)*2+1)
08C0      ON x GOTO 820,910
08D0 670      IF r=h THEN 740
08E3      IF w(r+1,s)<>0 THEN 740
08FE      IF s<>v THEN 700
090E      IF z=1 THEN 730
091E      q=1 \ GOTO 830
092A 700      IF w(r,s+1)<>0 THEN 730
0948      x=INT(RND(1)*2+1)
095A      ON x GOTO 860,910
096A 730      GOTO 860
0971 740      IF s<>v THEN 760
0984      IF z=1 THEN 210
0994      q=1 \ GOTO 910
09A0 760      IF w(r,s+1)<>0 THEN 210
09BE      GOTO 910
09C2 790      w(r-1,s)=c
09DB      c=c+1
09E7      b(r-1,s)=2
09FB      r=r-1
0A07      IF c=h*v+1 THEN 1010
0A1F      q=0 \ GOTO 260
0A2B 820      w(r,s-1)=c
0A44 830      c=c+1
0A53      b(r,s-1)=1
0A67      s=s-1
0A73      IF c=h*v+1 THEN 1010
0A8B      q=0 \ GOTO 260
0A97 860      w(r+1,s)=c
0AB0      c=c+1
0ABC      IF b(r,s)=0 THEN 880
0AD3      b(r,s)=3
0AE3      GOTO 890
0AE7 880      b(r,s)=2
0AFA 890      r=r+1
0B09      IF c=h*v+1 THEN 1010
0B21      GOTO 530
0B25 910      IF q=1 THEN 960
0B38      w(r,s+1)=c
0B4E      c=c+1
0B5A      IF b(r,s)=0 THEN 940
0B71      b(r,s)=3
0B81      GOTO 950
0B85 940      b(r,s)=1
0B98 950      s=s+1
0BA7      IF c=h*v+1 THEN 1010
0BBF      GOTO 260
0BC3 960      z=1
0BCE      IF b(r,s)=0 THEN 980
0BE5      b(r,s)=3
0BF5      q=0 \ GOTO 210
0C01 980      b(r,s)=1
0C14      q=0 \r=1 \s=1
0C2C      GOTO 250
0C30 1010      FOR j=1 TO v
0C45          PRINT #ppath,"I";
0C50          FOR i=1 TO h
0C62              IF b(i,j)<2 THEN 1030
0C79              PRINT #ppath," ";
0C86              GOTO 1040
0C8A 1030          PRINT #ppath," I";

```

Continued to Page 10

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# THE BRAWN BEHIND THE BRAINS

by Marcus W. Johnson

As many of you have by now heard, OS-9 is at the heart of the proposed CD standard, dubbed CD-I (Compact Disk Interactive). According to most reports, it will involve a 68000 microprocessor and some custom I/O chips. However, according to John Dvorak's Inside Track column in Infoworld (March 17 issue), the processor used is something called a 68070, which he describes as a special version of the 68000.

This report is as yet unconfirmed, and when I told co-workers about this, they were skeptical; none had heard of the 68070. Still, Dvorak has a tendency to

know what he's talking about, so I squirreled this information away for later use. That very week I happened to glance through a copy of Electronic Design (March 20 issue), and came upon an article about high-integration microprocessors. And there was the 68070! A very nice processor it is, too.

For starters, the 68070 is a 68000 microprocessor. 16Mbyte addressable memory, 10MHz speed. Totally software compatible. It's made by Signetics, and Motorola is expected to second-source it.

But wait. There's more. It also has on-chip memory management. This comes

in the form of a scaled-down version of Signetics' CMOS memory-access controller (the SCC689XX family), which provides up to 4 partitions in a virtual memory space, multiple protection types, user-configurable page size, address translation, dynamic stack allocation, memory protection, etc. It supports multi-tasking very nicely.

Now how much would you pay? Well, don't answer, because they also throw in a two-channel DMA controller based on the SCB68430 DMA controller. The controller is completely software compatible with the SCB68430, of course.

And that's not all. Also thrown in is an RS-232-C interface and an inter-IC bus controller that can handle up to 128 different peripheral devices at speeds up to 100Kbits per second.

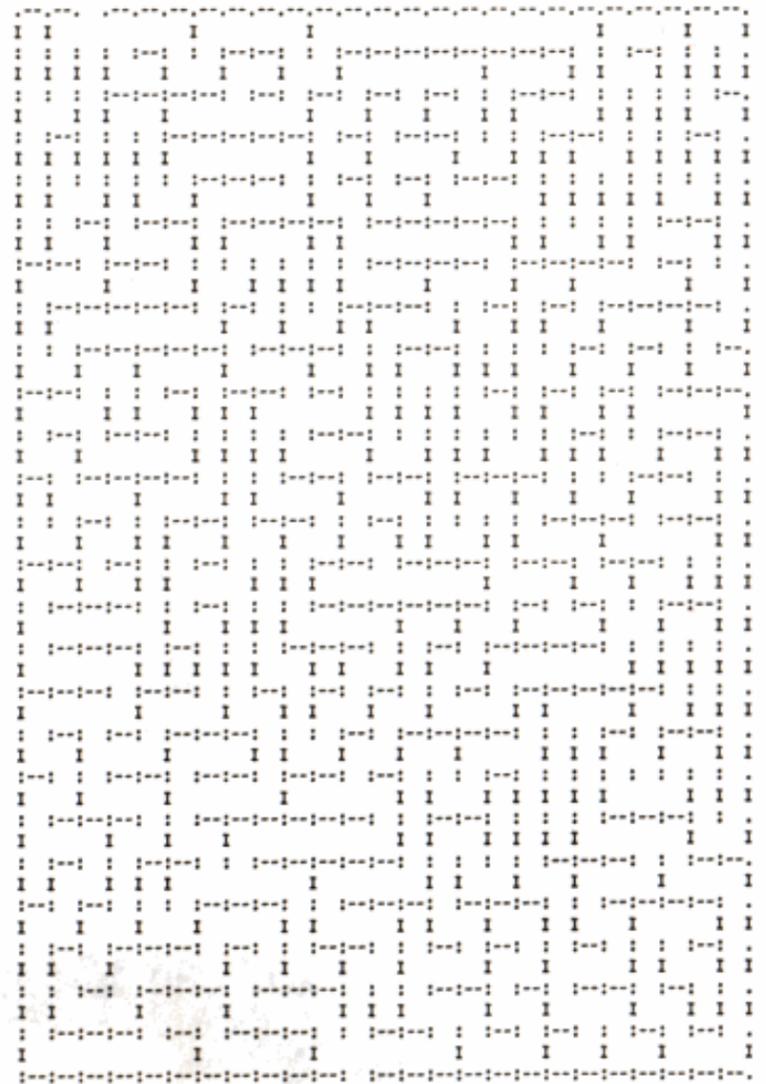
Of course, this is all very unofficial until we hear more. But the chip does apparently exist, and if nobody's using it yet, maybe someone ought to be.

John C. Dvorak, "Inside Track", Infoworld, March 17 1986. "Newstrends", Electronic Design, March 20 1986. Signetics Microprocessor Data Manual, 1986.



```

ØC9A 1Ø4Ø NEXT i
ØCA8 PRINT #ppath
ØCAE FOR i=1 TO h
ØCCØ IF b(i,j)=Ø THEN 1Ø6Ø
ØCD7 IF b(i,j)=2 THEN 1Ø6Ø
ØCEE PRINT #ppath,": ";
ØCFB GOTO 1Ø7Ø
ØCFF 1Ø6Ø PRINT #ppath,":--";
ØDØF 1Ø7Ø NEXT i
ØD1D PRINT #ppath, "."
ØD27 NEXT j
ØD32 IF ppath<>1 THEN
ØD3E CLOSE #prntr
ØD44 ENDIF
ØD46 END
    
```



**Application for membership in the OS-9 Users Group**

Last: \_\_\_\_\_  
 First: \_\_\_\_\_  
 Middle: \_\_\_\_\_  
 Street: \_\_\_\_\_  
 City: \_\_\_\_\_  
 State: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 Phone: ( \_\_\_\_\_ ) \_\_\_\_\_  
 Delphi ID: \_\_\_\_\_  
 Computer Make and Model: \_\_\_\_\_

OS-9 Level: \_\_\_\_\_ (I) \_\_\_\_\_ (II) \_\_\_\_\_ (68K) \_\_\_\_\_ (CoCo)  
 Disk Size: \_\_\_\_\_ (5 1/4") \_\_\_\_\_ (8")  
 Disk Format: \_\_\_\_\_ (CoCo) \_\_\_\_\_ (Standard)  
 Single Sided: \_\_\_\_\_ Double Sided: \_\_\_\_\_  
 # of tracks: \_\_\_\_\_ (35) \_\_\_\_\_ (40) \_\_\_\_\_ (80)  
 Other restrictions, formats, comments, etc:  
 \_\_\_\_\_  
 \_\_\_\_\_

Enclose \$25 to cover the first year's membership in the form of a personal check or money order. Please allow approximately 3-5 weeks for processing your membership. The Users Group has a small staff, and applications are averaging 30 to 50 a week.

Shortly after acceptance of your application for membership, you will receive the current Group newsletter ("MOTD"), and soon after, the "starter" diskette, UG Disk # 0, with software of the type useful in getting you started with both OS-9 and the Users group, including a modem program to assist you with CompuServe access while under OS-9. Additional diskettes may be purchased at a cost of \$5 each to cover the cost of media and postage.

Mail your application and other correspondence to:

The OS-9 Users Group  
 ATTN: (department)  
 9743 University Avenue  
 Suite 330  
 Des Moines, IA 50322

Where (department) is President, MOTD Editor, Librarian, Membership, etc.

Membership dues can be charged to your VISA or MasterCard. Simply enter your card information below and sign this form.

Card type: VISA \_\_\_\_\_ MasterCard \_\_\_\_\_  
 Account #: \_\_\_\_\_  
 Expires: \_\_\_\_\_  
 Is this a Renewal? Yes \_\_\_\_\_ No \_\_\_\_\_

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 for COCO and non-COCO; drives internal COCO modem port up to 2400 Baud

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 COCO DOS available in 6800,1,2,3,5,8,9/6502 version (not Z80/8080,5) only

**CROSS-ASSEMBLERS 1/\$50-FLEX, OS/9, MSDOS 3/\$100 ALL \$200**  
 specify for 180x,6502,6801,6804,6805,6809,Z8,Z80,8048,8051,8085,68000  
 modular cross-assemblers in C, with load/unload utilities and macros NEW: OS/9-68K  
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 FLEX tm Technical Systems Consultants; OS/9 tm Microware; COCO tm Tandy; MSDOS tm Microsoft.

# HOW MUCH DO I HAVE TO PAY?

---

Since many of us are not into games, I've included the Amortization program (Amort) below. Amort is written to compute the monthly payments required on a loan. You'll be able to change the printer control codes by changing the necessary lines beginning at location \$04FD. Enjoy this program and do your best to keep from going too far in debt.

---

The listing:

```
PROCEDURE Amort
0000 REM This program written by Dennis L. Conley will find the amortized
0043 REM schedule for an entire loan and print it to the printer. Note,
0086 REM this program is written for monthly payment type loans.
00C0 REM Printer codes in this program are for the R/S DMP-2100.
00FA REM This program should be invoked by: Amort >/your printer.
0137 REM Requires 80 column printer.
0155
0156
0157 DIM months_of_year$(12):STRING[3]
0168 DIM name$,purpose$:STRING[40]
0178 DIM amount_borrowed,interest_rate,date:REAL
0187 DIM yearly_interest,yearly_payment:REAL
0192 DIM total_yearly_interest,total_yearly_payment:REAL
019D DIM month,day,year,payment,interest:REAL
01B4 DIM interest_payment,principal_payment,balance_payment:REAL
01C3 DIM length_borrowed,counter,counters:INTEGER
01D2 DIM months_counter,terminal:BYTE
01DD
01DE
01DF DATA "Jan","Feb","Mar","Apr","May","Jun"
0207 DATA "Jul","Aug","Sep","Oct","Nov","Dec"
022F FOR counter=1 TO 12 \ READ months_of_year$(counter) \NEXT counter
0253
0254
0255 OPEN #terminal,"/TERM":UPDATE
0265
0266 REM Clears Screen on Word Pak
0282 PRINT #terminal,CHR$(2)
028C
028D PRINT #terminal, \ PRINT #terminal,
029B PRINT #terminal,"Who is this loan for ";
02BA INPUT #terminal,name$
02C4 PRINT #terminal,name$
02CE PRINT #terminal,
02D5 PRINT #terminal,"What is the purpose of the loan ";
02FF INPUT #terminal,purpose$
0309 PRINT #terminal,purpose$
0313 PRINT #terminal,
031A PRINT #terminal,"What is the amount of the loan ";
0343 INPUT #terminal,amount_borrowed
```

```

034D PRINT #terminal,amount_borrowed
0357 PRINT #terminal,
035E PRINT #terminal,"What is the interest rate of the loan ";
038E INPUT #terminal,interest_rate
0398 PRINT #terminal,interest_rate
03A2 PRINT #terminal,
03A9 PRINT #terminal,"How long is the loan for ( in months ) ";
03DA INPUT #terminal,length_borrowed
03E4 PRINT #terminal,length_borrowed
03EE PRINT #terminal,
03F5 PRINT #terminal,"When is the first payment of loan ( mmdyy ) "

042C INPUT #terminal,date
0436 PRINT #terminal,date
0440 PRINT #terminal,
0447 PRINT #terminal,"Turn-on printer and set paper to top of form."
047D INPUT #terminal,"Press any key when ready to continue.",continue$
04AF
04B0 CLOSE #terminal
04B6
04B7 month:=INT(date/10000)
04C5 day:=INT(date/100)-100*month
04DA year:=INT(date-10000*month-100*day)
04F4
04F5 PRINT \ PRINT \ PRINT \ PRINT
04FD REM Changes print to Correspondence 10
0522 PRINT CHR$(27); CHR$(18)
052B REM Start of elongation printing. ( Double Width/Double Height )
056A PRINT CHR$(27); CHR$(14)
0573
0574 SHELL "/d0/cmds/date t"
0587
0588 PRINT \ PRINT \ PRINT \ PRINT
0590 PRINT USING "S40^","AMORTIZATION"
05A8 PRINT USING "S40^","SCHEDULE"
05BC PRINT \ PRINT
05C0 PRINT USING "S40^","FOR"
05CF PRINT USING "S40^",name$
05DC PRINT \ PRINT
05E0 PRINT USING "S40^","LOAN PURPOSE"
05F8 PRINT USING "S40^",purpose$
0605 PRINT \ PRINT
0609 PRINT \ PRINT
060D PRINT \ PRINT
0611 PRINT \ PRINT
0615 PRINT USING "T2,S16","Amount Borrowed=";
0634 PRINT USING "S2>","$";
0641 PRINT USING "R10.2<","amount_borrowed
0650 PRINT
0652 PRINT USING "T2,S16<","Interest Rate=";
0670 PRINT USING "S2>","%";
067D PRINT USING "R10.2<","interest_rate
068C PRINT
068E PRINT USING "T2,S16<","Number Months=";
06AC PRINT USING "S2>","#";
06B9 PRINT USING "I10<","length_borrowed
06C6 PRINT
06C8
06C9 REM Stop elongation printing
06E4 PRINT CHR$(27); CHR$(15)
06ED REM Linefeed to top of form
0707 PRINT CHR$(12)
070C
070D PRINT \ PRINT
0711 PRINT USING "S10^","PAYMENT";
0725 PRINT USING "T15,S10^","AMOUNT";
073C PRINT USING "T30,S10^","INTEREST";
0755 PRINT USING "T45,S10^","PRINCIPAL";
076F PRINT USING "T60,S10^","BALANCE"
0786 PRINT
0788
0789 months_counter:=month
0792 counter:=0
0799 yearly_interest:=0 \yearly_payment:=0
07A9 total_yearly_interest:=0 \total_yearly_payment:=0

```

```

07B9 interest:=interest_rate/1200
07C6 payment:=amount_borrowed*interest*(1+interest)^length_borrowed

/((1+interest)^length_borrowed-1)

07F0
07F1 FOR counter=1 TO length_borrowed
0802 IF counter=length_borrowed AND months_counter<12 THEN
0816 GOSUB 100
081A GOSUB 200
081E ELSE
0822 IF months_counter>12 THEN
082E months_counter:=1
0835 year:=year+1
0841 GOSUB 100
0845 ELSE
0849 IF months_counter=12 THEN
0855 GOSUB 100
0859 GOSUB 200
085D ELSE
0861 GOSUB 100
0865 ENDIF
0867 ENDIF
0869 ENDIF
086B months_counter:=months_counter+1
0876 NEXT counter

0881
0882 FOR counter=1 TO 78 \ PRINT "*"; \NEXT counter
08A3 PRINT \ PRINT
08A7 PRINT "Total amount of payments $";
08C6 PRINT USING "R15.2<",total_yearly_payment;
08D6 PRINT " Total interest is $";
08EF PRINT USING "R15.2<",total_yearly_interest
08FE PRINT
0900 FOR counter=1 TO 78 \ PRINT "*"; \NEXT counter
0922 PRINT
0924 REM Linefeed to top of form
093E PRINT CHR$(12)
0943 REM Returns printer to normal printing (proportional).
0978 PRINT CHR$(27); CHR$(17)
0981 END
0983
0984
0985 100 PRINT USING "I3<",day;
0995 PRINT USING "S5^",months_of_year$(months_counter);
09A5 PRINT USING "I5<",year;
09B2 interest_payment:=amount_borrowed*interest
09BE principal_payment:=payment-interest_payment
09CA balance_payment:=amount_borrowed+interest_payment-payment
09DA PRINT USING "T15,S1","$";
09EA PRINT USING "T15,R10.2>",payment;
09FE PRINT USING "T30,S1","$";
0A0E PRINT USING "T30,R10.2>",interest_payment;
0A22 PRINT USING "T45,S1","$";
0A32 PRINT USING "T45,R10.2>",principal_payment;
0A46 PRINT USING "T60,S1","$";
0A56 PRINT USING "T60,R10.2>",balance_payment
0A69 yearly_interest:=yearly_interest+interest_payment
0A75 yearly_payment:=yearly_payment+payment
0A81 total_yearly_interest:=total_yearly_interest+interest_payment
0A8D total_yearly_payment:=total_yearly_payment+payment
0A99 amount_borrowed:=balance_payment
0AA1 RETURN
0AA3
0AA4
0AA5 200 FOR counters=1 TO 78 \ PRINT "="; \NEXT counters
0AC9 PRINT
0ACB PRINT " Totals for the year: "; year
0B05 PRINT "Total of payments this year $";
0B27 PRINT USING "R15.2<",yearly_payment;
0B37 PRINT "Interest paid $";
0B4B PRINT USING "R15.2<",yearly_interest
0B5A FOR counters=1 TO 78 \ PRINT "="; \NEXT counters
0B7B PRINT
0B7D yearly_interest:=0 \yearly_payment:=0
0B8D RETURN
0B8F END

```

## PLACING AN AD IN THE MOTD

There are still a lot of people out there that want to advertise in the MOTD. So what do they do?

Well, here's the deal! You start out by getting your ad made up (called camera ready copy). When that is completed, you submit your ad with a check made out to the OS-9 Users Group and send both to:

Editor, the MOTD  
c/o Bruce N. Warner  
14503 Fullerton Road  
Dale City, VA 22193-2034

The price for advertising in the MOTD is based on the size, location and number of colors (colors limited to black and red). This chart explains more completely.

SIZE	REGULAR		SPECIAL (back cover)	
	1-Color	2-Colors	1-Color	2-Colors
Full Page	\$400	\$480	\$500	\$600
Half Page	\$200	\$240	\$250	\$300
Quarter Page	\$100	\$120	\$125	\$150
Eighth Page	\$ 50	\$ 60	\$ 62.50	\$ 75

Rates are higher for the special issue that will be inserted in RAINBOW magazine. These rates will be published at a later date.

You'll have to make sure that you've included your camera ready copy and a check for payment made out to the OS-9 Users Group. The deadline for entries is the first of every month for the issue beginning the following month.

## SOFTWARE EXCHANGE NEWS

by David L. Kaleita

I took over the post of OS-9 Users Group Software Librarian about three years ago; the group was barely a year old at the time (I was "founding member #7," having joined when the group was first formed a year earlier).

Shortly after taking over the post, I began sifting through the considerable amount of software that was donated at the 2nd annual Microware OS-9 seminar. I realized that I was going to have to come up with some sort of electronic database that would enable me to keep track of just what software we had in the Library. At that time, the only DBM (stands for "DataBase Management") software I had available to me was a nice simple little package called "RMS" from Washington Computer Services. I therefore threw together a database that contained most of the essential descriptive information about each piece of software contained in the Library.

As software donations continued to pour in, I found it necessary to create a simple way for the contributors themselves to type the information into my database, without their having to have the RMS software themselves. I therefore wrote the (now historic?) program called "DocGen." This self-prompting program was designed to step the would-be software contributor through the process of creating a mini database which I could merge into my master database, as well as print out a public domain software release form to be signed by the author of the software to be donated. Since Basic09 was the only readily-available language that would run under OS-9 at that time, my choice of what language to write it in was pretty simple.

Well, as time passed, I have found it necessary to completely revamp the format of my RMS database and the master library twice. DocGen grew to about three times its original size and evolved into the current "DocGen3." In addition, the number of members in the OS-9 Users Group has increased tremendously, as have the number of languages available to run under OS-9.

The result of all this growth is that there are now significant number of OS-9 users who do not have Basic09 and can therefore not run DocGen3. Luckily for (and possibly previously unbeknownst to) those poor souls, it is still possible for them to donate software to the library without running DocGen3. It is a little

more work for them (and a lot more for me), but we're not going to turn down someone's public domain software donation just because they don't have Basic09. Therefore, I have outlined just what you need to do to donate software to the UG Library and qualify for the free Library volume disk for each program you donate.

### Instructions for Donating Public Domain Software to the OS-9 Users Group Software Library

— If you have Basic09 or RunB

I. Obtain a copy of the LATEST VERSION of the program "DocGen3" from the latest release of the UG Library disk, volume #0. (At the time of this writing, DocGen3 version 1.01 is available on disk volume #0.06 and in the OS-9 SIG on CompuServe in section DL0).

II. Run DocGen3 once for EACH individual program you wish to place in the public domain and release for distribution through the OS-9 Users Group.

III. Print out and sign a copy of the public domain software release form for each program you are donating.

IV. Send a 5.25" disk containing the software, "help" or documentation files, and the "—RMS" database files generated by DocGen3 along with signed release forms for EACH PROGRAM you are donating to the main UG address in Des Moines. Address the envelope "ATTENTION: LIBRARIAN."

In return, you will receive a postcard back from the UG Software Exchange Committee for each program you have properly submitted according to the instructions above. These postcards may be redeemed at any time for individual volumes in the UG Library by endorsing them and sending them back to the UG Membership Committee along with your disk order.

— If you DO NOT have Basic09 or RunB

I. Type the following information on a 8.5" x 11" piece of paper for EACH PROGRAM you wish to donate:

A. The name of the program or directory of interdependent programs you are submitting (individual or stand-alone pieces of software should be handled separately). This entry should be a valid OS-9 file or directory name.

B. The date of the software you are submitting in the format: MM/DD/YY.

C. The revision number of the software you are submitting.

D. Was this software developed on a system with a 6809 or a 680XX microprocessor?

E. What language is your software written in? Please select one of the following:

1. Microware Basic09
2. Microware C
3. Intel C
4. Microware COBOL
5. Microware FORTRAN
6. Microware Pascal
7. Omegasoft Pascal
8. Assembler
9. Misc. text (procedure files, etc.)
10. Any other language or programming environment (please describe)

F. What TYPE of software are you donating? (Please select one of the following:)

1. FILE PROCESSING FILTER (OS-9 filter usable with all of the available PIPE capabilities of OS-9)
2. SYSTEM SOFTWARE (i.e., Non-Utilities directly related to the OS-9 environment. All device drivers and descriptors, and file managers are examples of this type of software.)

3. SYSTEM UTILITY (i.e. utilities used for the purpose of creating, modifying, or using the OS-9 environment itself. OS9GEN is an example of this type of software.)

4. PROGRAMMING AID (assemblers, debuggers, and any utility which is designed to aid in the development of NEW software)

5. SUBROUTINE (any software which is not designed to be used by itself, but rather, to be CALLED by another program)

6. FILE MAINTENANCE (Examples: Attr, Backup, Copy, Del, Dir, etc.)

7. TEXT FILE PROCESSING (utilities specifically designed to modify ASCII text files, such as EDITORS and 'stripping' programs)

8. BINARY FILE PROCESSING (utilities which are capable of being used to modify binary or object files)

9. TEXT FILE OUTPUT ROUTINE (utilities such as List, Print, Df, Pr, etc.)

10. COMMUNICATION (anything related to OS-9 I/O, including MODEM programs ACIA drivers and filters, RS-232 routines, etc.)

11. DEMONSTRATION (tests, benchmarks, and other 'show-off' goodies)

12. DATA BASE MANAGEMENT (record management data base or spreadsheet files, utilities or related software)

13. GAMES (software whose primary purpose is for having fun)

14. GRAPHICS (usually hardware-dependent software for aiding in the generation and use of graphics on OS-9 computers)

15. MATHEMATICS (utilities and routines related to numbers or number-crunching)

16. SOUND AND MUSIC (software for aiding in the creation, production, recording, and reproduction of sound and music)

17. WORD PROCESSING (software related to checking, correction and formatting of written text document files but NOT INCLUDING text file output (printing) routines, editors, or stripping or transliterating programs)
18. FINANCE (all programs related to money or money management)
19. LANGUAGE (programs which are in themselves computer languages. Examples: XLisp, BASIC, Small C, etc.)
20. MISC. (anything that cannot be classified under any of the above)
- G. What type of software are you submitting? Please enter one of the following choices:
1. Stand-alone program or group of programs
  2. Subroutine(s) for Basic09
  3. Subroutine(s) for Assembler
  4. Subroutine(s) for C
  5. Subroutine(s) for Pascal
  6. Other misc. Subroutine(s)
- H. What FORMAT is the submitted software in (which one of the following)?
1. TEXT
  2. SOURCE
  3. OBJECT
  4. SOURCE & OBJECT
- I. What is the file configuration of the software? (choose one of the following):
1. Single File
  2. Directory of Files
- J. A brief description of the FUNCTION of this software (maximum 140 characters)
- K. Summary of operating instructions of the software you are submitting (maximum 130 characters)
- L. The name or a description of any other software required for the use of the software you are submitting (max 54 characters)
- M. This software is known to run under which VERSION of OS-9? (choose one of the following):
1. 6809
  2. 68000
  3. ALL
- N. This software is known to run under which LEVELs of OS-9 (i.e. 1, 2, 3, ALL)?
- O. What RELEASE of OS-9 will this software run under (1.1, 1.2, RS-COCO, etc.)
- P. What type of computer system was this software developed on?
- Q. Describe any special PRINTER requirements to run this software (16 chars max).
- R. Describe any special TERMINAL requirements to run this software (16 chars max).
- S. Describe any other special hardware requirements to run this software.

T. Enter your full name in the format LAST, FIRST M. (30 chars max)

U. Carefully type the following at the bottom of the page:

"I hereby affirm that I am the original author of the computer software described above, consisting of either the entire program as described or of the identified enhancements or alterations to a program which has already been placed in the public domain and/or previously released and distributed by the OS-9 User's Group. Upon acceptance by the OS-9 User's Group, I consent to the release of the software to the public domain and to its distribution without further claim to any right of compensation.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_"

II. Sign and date the form you have typed in the indicated space.

III. Send your disk of software, along with a separate, signed release form for EACH individual program you are donating to the main UG address in Des Moines. Address the envelope "ATTENTION: LIBRARIAN."

As mentioned earlier, you will receive a postcard good for one "donation credit" for each individual program you send that is accompanied by a signed release form. In other words, if you only send in one form for a group of many programs, you will only receive a single credit.

#### A: Call for Volunteers

For the most part, maintenance of the OS-9 UG Library has been handled almost exclusively by Carl Kreider and me for the past two years. And, to put it mildly, we have at times been SWAMPED with work. I have therefore come to the conclusion that it is once again time to ask for volunteers to help out with this very worthwhile cause.

Specifically, there are two pressing jobs that need to be done and it just looks like neither Carl nor I will have the time or the energy to do them. First, we need someone to handle a BIG pile of long-overdue mailings to members who have previously donated software to the Library. The purpose of these mailings will be to get information that was missing from the original release forms as sent in by software contributors.

Secondly, we need an additional volunteer who is adept at programming in the C language to rewrite DocGen3 in C. That way, the compiled object could be run by ANYONE running OS-9 — even those who do not have Basic09 or RunB. Obviously, the person who takes on this C conversion would also have to learn about how the RMS database software works, but I think I can instruct this person fairly well if he or she doesn't already have RMS (it is really quite simple).

If you feel you can handle either or both of the above jobs and would like to volunteer to help us out, please feel free to give me a call at home between 6 p.m. and 10 p.m. EDT at (313) 939-7658, or preferably, contact me on CompuServe (my CIS ID# is 70150,531).

The size of the Library is continuing to increase (see the newest listing of the available individual volumes elsewhere in this issue of MOTD). I plan to publish a complete listing of everything new we've received since I last printed a list (March, 1986) in an upcoming column. Until then . . . happy computing!

Vol. No.	Title:	Format:
0.06	New Member Intro	(40 track, ss)
1.00	Spelling Checker	(35 track, ss)
2.00	Spelling Dictionary	(40 track, ds)
3.01	Word Processing Utils	(35 track, ss)
4.01	Programming Utilities	(35 track, ss)
5.00	File Processing Utils	(35 track, ss)
6.02	Adventure Game (source)	(40 track, ds)
7.02	Adventure Game (object)	(40 track, ss)
8.00	General Interest (demo, games, finance)	(35 track, ss)
9.00	C Programmer's Tool Kit	(35 track, ss)
10.00	Math & Electronics I	(35 track, ss)
11.00	Word Processing Utils (disk #2)	(35 track, ss)
12.00	Programming Utilities (disk #2)	(35 track, ss)
13.00	File Processing Utils (disk #2)	(35 track, ss)
14.02	File Maintenance	(35 track, ss)
15.01	Communication	(35 track, ss)
16.00	Hardware Customizations	(35 track, ss)
17.00	Basic09 Programmer's Tool Kit	(35 track, ss)
18.00	System Utilities	(35 track, ss)
19.01	Languages 1: XLisp (source)	(40 track, ds)
20.00	XLisp (object)	(35 track, ss)
21.00	File maintenance (disk #2)	(35 track, ss)
22.00	Programming Utilities (disk #3)	(35 track, ss)
23.00	File Processing Utils (disk #3)	(35 track, ss)
24.00	General Interest (disk #2)	(35 track, ss)
25.01	Word Processing Utils (disk #3)	(35 track, ss)
26.00	C Language Math Library	(35 track, ss)
27	<Not yet available>	
28	<Not yet available>	
29.00	File Maintenance (disk #3)	(35 track, ss)
30.00	File Processing Utils (disk #4)	(35 track, ss)
31.00	Hardware Customizations (disk #2)	(35 track, ss)
32.00	Hardware Customizations (disk #3)	(35 track, ss)
33.00	System Utilities (disk #2)	(35 track, ss)
34.00	Hardware Customizations (disk #4)	(35 track, ss)
35.00	System Utilities (disk #3)	(35 track, ss)
36.00	General Interest (disk #3)	(35 track, ss)
37.00	Communication (disk #2)	(40 track, ds)
38.00	Programming Utilities (disk #4)	(35 track, ss)
39.00	Communication (Morse) (disk #3)	(40 track, ds)
40.00	System Utilities (disk #4)	(35 track, ss)
41.00	Programming Utilities (disk #5)	(35 track, ss)
42.00	Coco Graphics	(35 track, ss)
43.00	System Utilities (disk #5)	(35 track, ss)
44	<Not yet available>	
45	<Not yet available>	
46.00	Word Processing Utils (disk #4)	(35 track, ds)

NOTES: 1) Above formats describe STANDARD (non-CoCo) versions and are single-density.  
2) All of the completed volumes are available in STANDARD Microware OS-9 format, as well as TRS-80 Color Computer OS-9 format (dd, 18 sectors/track, etc.)

To order any of the above volumes from the OS-9 Users Group Software Library, send \$5.00 for each 5" disk and \$8.00 for each 8" disk to:

OS-9 Users Group, ATTN: DISK ORDERS, 9743 University Avenue, Suite 330, Des Moines, IA 50322

Please DO NOT address your orders to "Library" or "Librarian" or your order will be delayed by an additional 4 to 6 weeks! Orders which contain requests for volumes which are not yet available will be returned to you unfiled.

Orders will be accepted from MEMBERS ONLY.

+++ For these volumes to fit in the specified format, the disk is created with a default sector allocation of 1 sector per directory (made by doctoring the "segment allocation size" byte (offset \$20) in the device descriptor of the drive on which the master disk is made).

Orders can be made by mail or through the online services of DELPHI and CompuServe. Payment is required in advance by check, money order, VISA or Master Card.

Last Name \_\_\_\_\_ First \_\_\_\_\_ Initial \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

OS-9 Disk Format \_\_\_\_\_ Form of payment \_\_\_\_\_

Disk No.	Qty.	Cost	Amount
		\$5.00	
		\$5.00	
		\$5.00	
		\$5.00	
5" Archive Set		\$70.00	

If paying by credit card enter the following:

Card type: VISA \_\_\_\_\_ MasterCard \_\_\_\_\_

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## SUPER CONTROLLER

### Features:

- \* Gold contacts on all connectors.
- \* Shielded metal box for low RF noise.
- \* 4 28-pin sockets for software expandability.
- \* Uses 2764 or 27128 EPROMS.
- \* EPROMS are software selectable.
- \* Internal Mini-Expansion Bus interface for;
  - Parallel Printer or
  - Real Time Clock Parallel Printer or
  - 80 Col Display Clock Parallel Printer or
  - EPROM Programmer or
  - User projects.
- \* Complete Radio Shack compatibility.
- \* New technology, no adjustments needed.
- \* Very Accurate 16mhz High Speed Master Clock.
- \* Needs 5 volts only, works on all COCOs or COCO IIs.

## EXPANSION ADD-ONS:

### PPRINT

The first is a Centronics Compatible Parallel Printer Adapter. This adapter will allow you to connect a Centronics compatible printer directly to your controller, leaving the serial port of your computer free for your modem.

### RTIME

The second is a Real Time Clock. This is a clock chip that will keep the proper time, date, and year. A small battery keeps the time when the Computer is off, retrieve and set time by using simple Basic POKES. Also available with the Real Time Clock is the Centronics Compatible Parallel Printer adapter. Software to set the clock included.

### MPROM

The third is a Mini EPROM Programmer. Yes, a low cost programmer that attaches to the disk controller. A must for the DISTO Super Controller. Program those often used utilities into EPROM and plug them directly into your controller. Will program 2764's or 27128's, a perfect mate for the DISTO Super Controller.

## DISPLAY80

The fourth is a real knock-out. This is a three in one card. It's major function is to add an 80\* 24 display to your computer. A feature packed package also includes RTIME and PPRINT. All in one neat package that fits inside the controller. Call for more information.

## 256K/512K SUPER RAM DISK

This is a ROM PAK the size of a typical controller. Inside this, low noise metal case, lives 256K/512K of memory and all the circuitry needed to access it as a RAM DISK. With proper software, this SUPER RAM DISK can be just like another disk drive. You can format it, save a file to it, load a file from it and delete files from it. In fact, anything that can be done on a regular drive, can be done on a RAM DISK, only faster. You see, being high-speed RAM, there is no hardware limitations on speed. It is much faster than even the fastest drive.

Another feature with the SUPER RAM DISK is that it has the same MEB as the Super Controller. That means that all of the add-ons that fit inside the controller will also fit into the RAM DISK. Note, a Multi-Pak is needed when using the RAM DISK with a disk controller.

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# DISTO

SUPER CONTROLLER

## SUPER PRODUCTS

### CREDITS:

The DISTO Super Controller, add-ons and all its documentation are conceived and designed by TONY DISTEFANO. The DISTO Super Controller and add-ons are manufactured and distributed by;

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## MORE WRITERS NEEDED

Okay, so you're not one of the world's greatest heroes. Neither am I. The difference between me and a lot of you out there is that I take the time to share what I do know. That has gotten me to some respectable titles that other people may have been much more qualified to fill.

What do I mean by that? Simple. In my daytime job I'm an enlisted member of the U.S. Navy. I'm also the Leading Petty Officer (senior E-6). That's a job with some distinctions. It also holds a lot of responsibilities. There are other people with more leadership ability, more military knowledge, even some with a better outlook. The difference is that I've been willing to take the job and do it in spite of the lousy pay, the unfair working environment, the substandard housing (on board ships). The end result is that

I'm now senior, and those people that weren't willing to pay the price are now civilians, many still complaining that life hasn't treated them fairly.

There's a price involved in being a member of the UG. It comes from the word "member." It means that you have to give something, not just take something. It means you have to contribute something to the UG. Who knows what you should contribute. It may be a simple procedure file that gets published in the MOTD or a program that is donated to the booth at one of the shows we attend.

Get in there and be a member of the UG. Send in an article, write a review, sign up a friend, write a program, get involved!

— Bruce Warner