

The Official Newsletter Of The National OS-9 Users Group

Tim Resigns Editor's Post

Brian Lantz President,
OS-9 Users Group
6403 N Paddock Ave.
Tampa, Florida 33614

Dear Brian,

This letter is to confirm my resignation as the editor of MOTD, the OS-9 User Group's Newsletter. One year ago when I took over the editorship of the MOTD I stated that I would edit the newsletter until new officers were elected. You may recall that I took over the job only after the death of Dick Dundon, a good friend and neighbor of mine.

My wife and I like to think that we improved the MOTD in the year that we published it. We both enjoyed working on it and learned a lot in the process. One of the major improvements was simply the fact that it was published regularly, which before that time had not been the case.

Now that the MOTD has been contracted to Falsoft Publishing it seems like a natural time to pass the reigns on to some one else. Certainly the addition of professional typesetting and artwork will make the MOTD much better than it has ever been. What concerns me now, however, is not the appearance of the MOTD

but the content. If you look at back issues of the newsletter you will notice that only a small handful of members and officers contributed regularly. The new format of the MOTD will demand even more user input than in the past. Probably one of the most discouraging things for me as an editor was always begging people to write articles for the MOTD. Besides the problem with quantity there is the problem of quality of articles. Don't get me wrong, I think that those people that did write for the MOTD were excellent, however, we had no big news for the OS-9 users. The newsletter seldom got advance details on new products, never got a chance to review new software, and never gave it's readers anything but second hand news. All these issues must be addressed before the MOTD will be a successful newsletter.

I am sorry that I did not make this decision prior to the User Group meeting in Des Moines. I hope that this will not cause you hardship in finding a new editor. Please advise whomever you choose for editor to feel free to call me for help in any way.

Thanks and Good Luck,

Tim Grovac

CoCo OS-9 Users and Useage

September 9, 1985

Damon Hill
3261 Circle Oak Dr. NW
Atlanta, GA 30339

Dear Tim:

I took note with some concern and dismay that the CoCo Advocate column is apparently OOS. Since I'm a CoCo/OS9 user with none too high a level of expertise, this system and software being my first serious foray into computing, I sometimes encounter problems which aren't easy to resolve. Also, I have a certain range of experience and interests which are outlined in the enclosed printout. Both this letter and the "Comments" are contained on an OS-9/CoCo format disk under the TEXT directory.

It may be that as a user I'm almost unique in the group, and one might draw a parallel (somewhat limited and coincidental) between me and Jerry Pournelle in BYTE. Except that he is a far better writer and probably a much more knowledgeable hacker than I am.

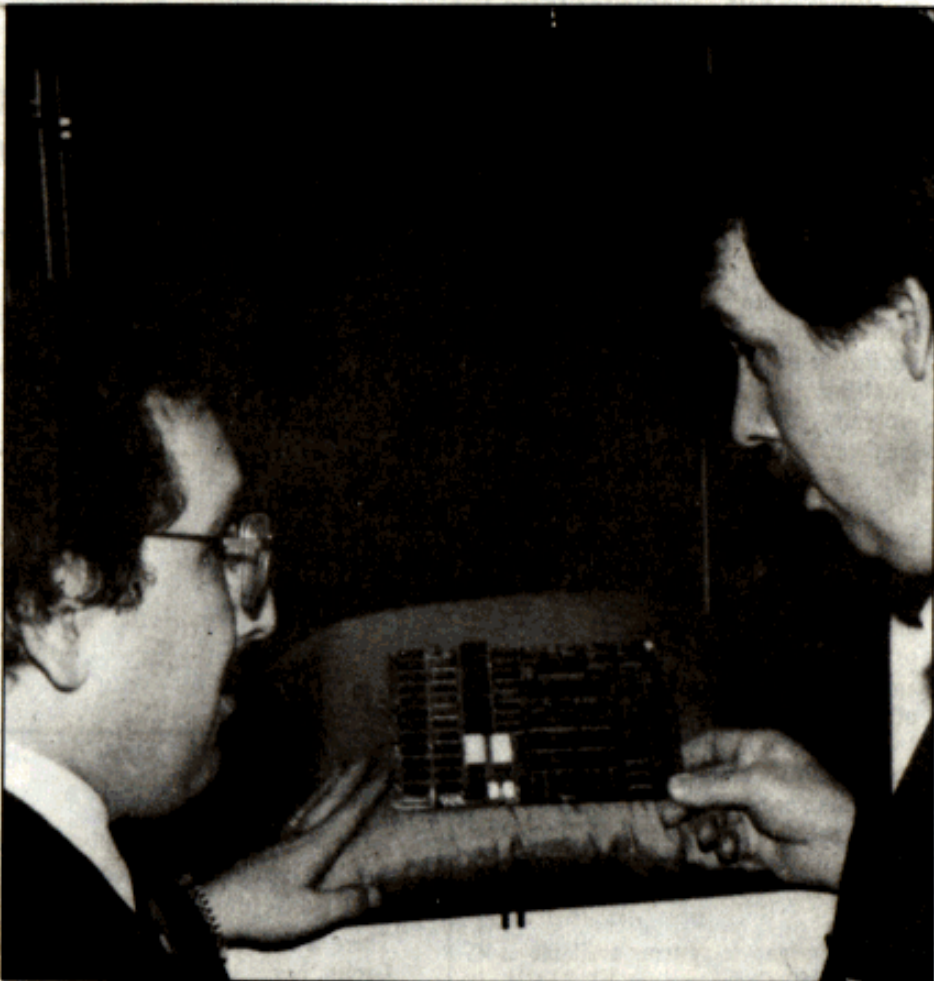
Be that as it may, I seem to have a few problems with my PBJ WordpackII that other users may have encountered and perhaps solved, and I'm continuing to try to enhance my hardware and software setup. I'm also considering a hard disk system, with some misgiving about price, performance, and software support for OS-9, and it'd be nice if there were some articles on that subject in MOTD (Look in MOTD for our first review, it's on a CoCo hard disk, ED.). I may be able to put together my own system, purchasing parts through my employer; we use 5" drives up to 80 megs and SASI controllers and I'm not too shabby at coming up with enclosures and power supplies.

My DSL 128K/RAMdisk setup seems to be working very well now, though I'd still like more memory room to play with. I hope some coverage of new hardware and software support will appear in MOTD, there are several RAMdisk systems for the CoCo out there now and they do make a difference in speed and convenience on OS-9, since it tends to be rather disk intensive. Much cheaper than a hard drive and at least as fast.

The RS-232 article was a very helpful one, I've been entertaining ideas of designing my own 6809 single-board system as a general learning aid for micro-computer design and programming, interfacing is an area I hadn't found much information on. I'm a bit hardware oriented and tend to enjoy such articles more, although I do pay some attention to BASIC09. I'd like to see more emphasis on hardware and projects, how many people out there have been wanting to fill that enormous void between the CoCo and the Gimix? It could be that the users will have to do it. My goal is at least a 64k Level I system, but I'd ideally like a 1 meg Level II system with that long-rumored 3 MHz CMOS 6809E that Fujitsu (I think) was working on. Graphics is another area of interest.

One such possibility surfaced recently at the 68XX User's Group meeting at Georgia Tech in Atlanta. A 68B09E running FLEX on an IBM PC was demonstrated, OS-9 operation was planned. I think that's very interesting . . . using the IBM as a support system for a much nicer uP and DOS. It was implemented on a proto-typing card in an expansion slot, the floppy drives were being stepped at a 2 msec rate, I don't know if the hard disk was running in that mode, however. Thought you might find that tidbit interesting. 'Bout time somebody did that!

In general, MOTD has been enjoyable and helpful. Keep up the good work and don't get discouraged! Big things are in store for us over the next few years.



The OS-9 Seminar in Des Moines, Nov. 1-4
More photos inside, see page 7

BULK RATE
U.S. POSTAGE
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PROSPECT, KY

Farewell from the Old — Welcome to the New!

By Dale L. Puckett

It started in August of 1983. The Iowa State Fair was booming just outside Des Moines and the fortunes of many prospective farmers rested on the outcome of their prize livestock in the show ring.

Meanwhile in a packed meeting room at the Marriott Hotel in downtown Des Moines, the fortune of another group awaited the decisions of slightly more than 100 computer hardware and software professionals. The OS-9 Users Group was about to decide its direction for another year.

Through the enthusiasm, hard work and talent of Brian Capouch, the group had been formed a year earlier at the first annual Microware OS-9 Seminar. At this meeting in the summer of 1983 the group had 57 members and a lot of good ideas. It did not have an over abundance of volunteers. In fact, toward the end of the meeting when Brian asked for nominations, no one offered to run for office.

Peter Dibble and I were sitting next to each other near the middle of the room taking notes for our individual columns when the impasse started. When the situation deteriorated, I felt the obligation to do something. I mentioned to Peter that if we poured our enthusiasm and hopes for the group into our columns we could probably make something happen. About 10 minutes later I had him convinced and we stepped up to volunteer. After we stood up, Tom

Murphy and George Dorner joined us and we had a slate.

What did we have to offer the OS-9 Users Group? Peter Dibble was an OS-9 programming guru — bar none. He also had a following of loyal readers in 68 Micro Journal. Tom Murphy, of Suntel, Inc in St. Louis was a super manager. George Dorner was super organized, full of enthusiasm and one hell of a nice guy. And I, then serving as the National Vice President of the Coast Guard Warrant Officers Association, had a few leadership skills, a lot of enthusiasm for OS-9 and a number of loyal Color Computer readers who turned to my column for information about their new operating system.

Our mandate was to come up with methods that would let OS-9 users communicate with each other so we could all move the state of the art forward together. Our first step was to set our priorities and get organized. We did that immediately after the meeting and in telephone conference calls during the next several months. Slowly but surely things began to take shape and we had an organization.

Dave Kaleita volunteered to get the Software Exchange Library on its feet. Frank Hogg volunteered to distribute the disks. The four officers struggled to put out the first few issues of our new group newsletter, MOTD. Six months later,

Dick Dundon volunteered to become our editor. He made fantastic progress and improved the next several issues before he suffered a stroke and passed away in late 1984. Fortunately for the group, Tim Grovac, a good friend of Dick's stepped in to fill his shoes. His efforts have been nothing short of tremendous.

Elsewhere on the communications front Jim Bellomo, a strong OS-9 proponent, established the OS-9 SIG on Compuserve. Unfortunately for all, shortly after the SIG became reality, Jim suffered a heart attack and died at the age of 34. We all owe a lot to his memory.

Compuserve named William A. Van Nest — "Van" for short — to become the new SysOp. Van has done a tremendous job during the past several years and has become one of the OS-9 Users Group's biggest and loudest advocates. We all owe him our continuing support.

And while we're thanking people, we cannot forget Lonnie Falk, who allowed me to print page after page of OS-9 Users Group news in my Rainbow Column, and Don Williams who offered Peter Dibble the same freedom in the pages of 68 Micro Journal. We need to thank also, Greg Morse, a regular contributor to MOTD; Jim Schmidt, who wrote a special column for Color Computer OS-9 users; Bert Schneider, who recently agreed to write a series of reviews featuring software in the Users Group Library; Hal Snyder, Carl Kreider, Eric Williams, Bryan Capouch and Peter Lyall — to name just a few of the people who have written and donated enough software to fill more than 45 disks in the software library; Dave Gibson, who

stepped in to fill Tom Murphy's shoes as Secretary; Dr. James Petty, Dr. Robert Ringrose and Joe Dubuc, who stepped into to handle the membership committee chores; Bill Turner, who formed a resolution committee for the group; and James Jones who volunteered to act as a Color Computer Club Coordinator during our second year; and scores of others who have pitched in to help when asked.

What's our point. Well, when we volunteered to take the helm nearly two and a half years ago, we had little to offer other than enthusiasm and a few good ideas. Today, our group has grown from that 57 members that day in August to more than 1100 as 1985 winds to a close. Because of this growth, we were forced to make some hard decisions during the past six months. But, I can assure you that each and every one of them was made with the best interest of our individual members at heart. As we pass the gavel to Brian Lantz and his slate, Peter, George, Dave and I want to say thank you to each and every one of you who have supported us in any way. We hope you will support Brian, Bill, Steve and Dave as you have supported us.

If some of the things we are hearing on the rumor mill happen, Brian may well wind up reporting that the membership of the OS-9 Users Group increased by an equal percentage during his first year. We hope so. But, you can rest assured that if our group grows that fast, Brian will need every bit of help he can get. He'll be coming to you, the individual member. We hope you'll help him any way you can!

A DRIVE BY ANY OTHER NAME

a review by Bruce N. Warner

One of the most aggravating things about a home computer is the speed of access. One of the others is the amount of on-line storage. Once I expanded to have enough drives I found that I couldn't stand the number of loose floppies sitting around.

Back in those early days, I couldn't stand the price of a hard disk, and I could hardly bare to think of straining the family budget that much. Luckily, I write documentation and do beta tests, so RGS Micro (now out of business) sent me their 5meg hard disk (the first available for a Color Computer) to document. That was a major job.

When I look my entire system to Princeton for RAINBOWfest, I was shocked to get it home and find that it wouldn't run (ended up being a loose ground wire), and decided to check out the various new hard drives on the market. LR Tech's ad in the RAINBOW caught my eye and I found that my wife still loves me in spite of my CoCo because she offered to purchase it for me as a Christmas present.

To be honest, there is room for improvement in the LR Tech manual. Being a journalist for almost two decades, I go crazy over careless typos. There are a few in the manual, and a good spelling checker (I use DynaSpell from FHL) would find them all.

Now that I've covered ALL of the bad news, here's the good news. If you read the directions from beginning to end, you'll find that you're up and running

before you even get to section three of the manual (there are six in total). The installation is both complete and to the point. It would take a complete computer illiterate to be unable to install the LR Tech hard disk interface with hard disk.

Section three holds the hardware description, while section four may prove to be the most valuable. This is where you are shown how to patch you modules to look for and address the hard disk. Many of the modules (Dyna Forms for instance) will automatically look for the hard disk driver in memory before looking for the floppy, so you won't require patching of all modules. Check the program/utility before you start patching them. In any event, patching instructions are complete and accurate.

Section five tells you how to change the source files for a new hard disk, including expansion to 20meg or more. The descriptors are all located in the disk—config listing, so you are allowed to change only one file by changing the appropriate drive type to TRUE and all others to FALSE.

Section six is the instructions for partial package customers.

If you've been waiting for a hard drive for your Color Computer and thought you couldn't afford it, LR Tech may have your answer.

(5 to 20 megabyte systems available at \$495 to \$950. Order through LR TECH, 2010 Greyhorse Drive, Warrington, PA 18976)

VOLUME 2 NUMBER 1

MOTD
Message Of The Day

MOTD is published bimonthly as the official newsletter of the National OS-9 Users Group, 410 Hubbell Building, Des Moines, IA 50309.

Editor
Bruce Warner
President, National OS-9 Users group
Brian Lantz

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There is no connection between Microware and The National OS-9 Users Group, nor is there any connection between Falsoft and The National OS-9 Users Group.

PRESS RELEASE...

Subject: 'FHL Office System', 'Sculptor+ runtime' and 'QCom'
Date: November 1, 1985
From: Frank Hogg Laboratory, Inc.
770 James Street
Syracuse, New York 13203
315/474-7856
Contact: Frank Hogg
*Available by year end.

FHL announced three new additions to the already extensive software packages provided with their QT line of computers. The new packages have a value of \$2025 and are:

The FHL Office System is a large group of programs written in Sculptor+. Much of the source is included.

- *Invoice/point of sale.
- *Purchase order with mini inventory.
- *Mailing list system.
- *Phone data file.
- *Multi-key card file.
- *Notebook.
- *Tri-File customer sales lead package.

The FHL Office System will be sold separately for \$1700.00

Sculptor+ runtime is included to run the FHL Office System and can be used for any other Sculptor application. List price \$175.00

QCom is a communications program with Xmodem upload and download capabilities. Uld and Dld are included to allow Xmodem transfers between two QT's or a QT and another computer with Xmodem capability. List price \$150.00

Please note that the FHL Office System and QCom are still under development. All registered QT owners will receive these programs by year end.

PRESS RELEASE...

Subject: Sculptor+ OS9/68K
Date: November 1, 1985
From: Frank Hogg Laboratory, Inc.
770 James Street
Syracuse, New York 13203
315/474-7856
Contact: Frank Hogg

Sculptor+ is now available for OS9/68K. Microprocessor Developments Ltd. and Frank Hogg Laboratory have made available Sculptor+ for OS9/68K. The development was done on FHL's QT computer system, (of course). In addition to Sculptor+ being available, FHL announced that they have licensed the Sculptor+ run time and are including it with the 'FHL Office System' on their excellent QT series of computer systems. All present and future QT owners will receive it.

Sculptor+ offers several features over standard versions of Sculptor.

- Development menu with parameter passing
- Automatic program generation
- Query language

Sculptor+ OS9/68K development system is \$995.00 (\$695.00 for QT owners)
Sculptor+ OS9/68K runtime is \$175 (Included with QT systems*)

Sculptor+ is also available for 6809 OS9 for \$995.00 and as an upgrade for \$175.00

*Extra cost option with QT 20.

PRESS RELEASE...

Subject: QT 20 (68020 Computer System)
Date: November 1, 1985
From: Frank Hogg Laboratory, Inc.
770 James Street
Syracuse, New York 13203
315/474-7856
Contact: Frank Hogg

Place: The Microware OS9 Seminar.
Des Moines Iowa

Frank Hogg Labs announced today the QT 20 computer system. Based on the powerful 68020 microprocessor from Motorola, the QT 20 has 2048K RAM and runs at 12+ mhz. The heart of the QT 20 is the GMX Micro 20 SBC, designed especially to fit the QT by Gimix Inc. of Chicago. The QT 20 is offered in two formats, with and without software. The QT 20 joins two other computers in the FHL line making it the third computer released by FHL this year! The popularity of the firm's QT line of computers was evident with over 10 of the QT computers being used by various exhibitors at the seminar. The QT was by far the most popular computer there. Two QT 20 prototypes were being shown with production expected to begin in late December 1985.

QT 20 without software \$5195.00
QT 20 with software * \$6995.00

Specs: 68020 12.6 mhz, 4 RS 232 serial ports, 1 Centronics printer port, Real time clock, 2 megabytes RAM, 20 Megabytes hard disk, DSDD 80 track floppy, Power supply is 8 amp @ 5v, 3 amp @ 12v with surge to 5 amp. Case is 5.5 x 9.75 x 11.5 and weighs aprox 18 pounds.

*See separate list for software.

QT Price List

	QT	QT Plus	QT 20
Board level	995.00	1495.00	2750.00*
1 80 Track DSDD Floppy	1595.00	2095.00	n/a
2 80 Track DSDD Floppy	1750.00	2250.00	n/a
Hard disk 10 and floppy	2695.00	3195.00	n/a
Hard disk 20 and floppy	2995.00	3495.00	5195.00*
Hard disk 20 with software	same	same	6995.00

*The Motorola Bug monitor is included.

Note: The QT 20 is available with and without the software package that is included with the QT and the QT Plus. The individual prices for the software for the QT 20 are below:

OS9/68K OS	350.00
Basic09	250.00
Stylo with MM and Spell	625.00
Dynacalc	595.00
QCom	150.00
Sculptor+ run time	175.00
FHL Office System	1700.00
Total separate cost	3845.00

The QT , QT Plus and the QT 20 at \$6995.00 include the above software.

Sculptor+ developement system	995.00 (695 for QT owners)
Pascal compiler	400.00
C compiler	400.00
Qume QVT 101 terminal	395.00
Serial cable	25.00
Printer cable	30.00
20 meg upgrade	1425.00
30 meg option (add to 20 meg)	500.00

Frank Hogg Laboratory, Inc. - 770 James St. - Syracuse NY 13203
315/474-7856

THE SAME OLD THING CAN BE NEW

Just in case you hadn't noticed, there is something new about MOTD. Okay, so there is a lot new about MOTD. There's the look. After evaluation of all offers, the publishing contract for MOTD has been awarded to Falsoft, Inc., a company owned by member Lonnie Falk. Some of the reasons for selecting Falsoft are included in a letter from former president Dale Puckett published in this issue.

Why a new look for MOTD? There are several reasons. First, MOTD was founded to provide our members with a timely transfer of information. Secondly, you deserve a publication that is as good as we can make it. Lastly, with the addition of paid advertising, we can provide you with a publication that will include more meat on the same amount of paper.

Not all news is good news

There is some bad news. Tim Grovac felt that he needed to resign the position of editor (his letter of resignation is contained elsewhere in MOTD). I call this bad news because I feel Tim has done an excellent job as the editor of MOTD. I will have a hard time filling his shoes but will give it my best shot. Some of you will recognize my name from reviews I have written for RAINBOW and HOT CoCo. Others know me from my work with the Northern Virginia Color Computer Club. Others know me from my 18 years of writing experience in the U.S. Navy. My wife, Denise, knows me best of all and still wonders what all this computer stuff is about.

HELP!!!

How can you help? First of all, there is a great need to get information for MOTD. The new size allows for more text in less space. You are our best source of information. OS-9 is a complex, powerful operating system, but it is nothing without your sharing of what you know. All the officers and all the

publishers in the world will never get a publication on the street without writers. So here's your chance to become one of those people with their name in print!

You have three ways to get articles to me. First, you can upload your articles to me on DELPHI (more on DELPHI in another article). Or you can upload via COMPUSERVE. Finally, you can write me via the User's Group (least time effective). The addresses for me at each are as follows:

DELPHI	OS9UGED
COMPUSERVE	70370,720
U.S. MAIL	OS-9 Users Group
	Attn: MOTD
	9743 University Avenue
	Suite 330
	Des Moines, IOWA 50322

All submissions sent through the mail should be on disk packed firmly on either standard OS-9 or Radio Shack OS-9 format.

GOOD NEWS FOR MEMBERS

There is some good news about writing for MOTD. We plan to start paying for submissions. It won't be much, but it ~~should cover the cost of correct time~~ when uploading, or the cost of your disk and postage. That should take a little pain out of the cost of submitting.

The other big event is the inclusion of reviews. I haven't decided just how many will be run in a single issue of MOTD, nor have I decided how much we'll give for a review, but we will review the latest in software and hardware along with the old standards. The good part is that the reviewer will keep the software (in the case of software reviews) and they'll be paid a small amount to cover their expenses.

We have a lot of things planned, and we'll go into them in later issues of MOTD. If you have any ideas, send them along. Short and long articles are also appreciated. For this issue, God be with you . . .

. . . Bruce

RAINBOWfest OS-9 BREAKFAST

Have you ever wondered why OS-9 has been left out of the limelight at the RAINBOWfest community breakfasts? Well, wonder no more. In February, the OS-9 Users Group will take over a substantial part of the Palo Alto RAINBOWfest.

We'll start with our own booth. Many of the club officers will be there, including president Brian Lantz and director Dale Puckett. You'll have your chance to meet the people that are making OS-9 the operating system of the future.

There will be three (that's right, 3) sessions on OS-9 during RAINBOWfest, including Dale Puckett's well known sessions for beginners and on BASIC9 and a new session by Brian Lantz on technical topics.

The breakfast will feature keynote speaker Paul Searby, owner and founder of Computerware. Paul's company has been instrumental in bring new software to the OS-9 community, and his presence as a keynote speaker promises to make OS-9 a central topic of the weekend.

Tickets are available for \$14 each and can be ordered by writing:

RAINBOWfest
The Falsoft Building
P.O. Box 385
Prospect, KY 40059

Be sure to include your name, address, city, state, ZIP code and telephone when writing. Additional information is available by writing or phoning Falsoft at (502)228-4492.

OFFICERS GO ONLINE

by Editor Bruce Warner

Living near Brian Lantz would be great, but there's a thousand miles between Tampa and Dale City (30 miles south of Washington, D.C.). You could just pick up the phone at any time and give Brian a call. I use to have that kind of situation when Dale Puckett lived in Dale City, Virginia. Now things are a little different, but Dale and I still need to converse. There's an easy way for us, and for you to communicate, better yet, there are two easy ways!

COMPUSERVE, THE OLD STANDBY

For years, we have been able to leave mail with other members of CompuServe via their Electronic Mail system. Now that's even easier with their new EasyPlex mail system. You can stop off and leave some mail for anyone that is on the net by leaving the mail in their user area. The hard part is that you have to know the address of the user. For the Editor of MOTD, that's 70370,720.

CompuServe allows you all the advantages of a long established network, and all of your officers have CompuServe accounts.

DELPHI, THE NEW KID ON THE BLOCK

There's a new kid on the block, Delphi! And if you're a subscriber to RAINBOW magazine, you can get a free lifetime membership to Delphi. But what does it offer?

The Delphi Information Utility is a full-service information utility. It offers everything from up-to-the-minute news from the Associated Press to electronic mail services, and a special forum for Color Computer owners. The CoCo SIG features a variety of services including a section dedicated to OS-9. To log on, get a recent copy of RAINBOW magazine and get all the details for your area.

Messages can be sent to the Editor on DELPHI for user OS9UGED.

More information on Delphi will be presented in upcoming issues of MOTD.

NEW OS-9 AT LAST!!!

Tandy has released a new version of OS9 for the Color Computer. Because of the strong support that this SIG has provided for OS9 I have gotten permission to upload a list of the new features, before the product will be in the stores.

Color Computer OS9 Version 02.00.00 upgrade — Catalog #700-2331 Price \$24.95

New Features:

We have added total programmability to the /T2 device. The user can now completely program all functions like parity, stop bits, in Real time. This seems to have cleared up all compatibility problems using this port. We have added some programmability to /T1 as well.

The Speech/Sound cartridge is now supported as a device. DIR /ssc will have your directory spoken.

We have included a 'config' program that allows a user to generate a new system disk with any or all devices from a MENU. For example, a user with only two drives and an RS232 pak can create a new custom boot disk with NO knowledge of OS9GEN or COBBLER. The program also allows third party vendors to add new devices to a module directory so that they will show up on Config's menu.

We have added a HELP command.

We have separated CCIO into separate devices so the user can save memory by not including devices not used, like graphics. This design also makes the addition of 80 column cards, and the like, much easier to implement because the keyboard drives is a separate device and does not have to be changed.

All modules are now COMPLETELY independent. For example, /T2 can be renamed to /TERM and all of /TERM (ccio, etc.) modules can be removed from memory.

We have included Harddisk, nil and 80 column card Driver/Descriptors.

The keyboard driver now includes auto repeat and an ALT key (using the '@' key).

The graphics device now includes a fill command and supports multiple graphic pages.

Memory fragmentation no longer is a problem.

We have included a TUNEPORIT utility to allow the user to adjust the timing values on the bit-banging port. Great for running your printer at 9600 baud.

DIR and other utilities configure themselves for screen size.

We have added a new call FS VIRQ which is a virtual interrupt system. VIRQ is useful with devices in the Multi-Pac expansion slots that can generate physical interrupts on the processor but which cannot be recognized by the processor due to a hardware limitation on the Multi-Pac. It is also useful for devices not having physical interrupts. It also provides a way to do time critical event timing.

The new version should be available sometime in late December. You will need to show proof of purchase (sales slip, original OS9 disk, etc.) to be able to get the upgrade. It should come with 2 disks and addendum explaining the new features. New copies of OS9 will be shipped with 02.00.00. Please be patient with store personnel as you are getting this information before some of them. We have tried very hard to incorporate all enhancements that have been suggested here and from other sources, without limiting the users available RAM.

Note: Most all new OS9 software (like DeskMate) will require Version 02.00.00.

Jonathan C. Cluts, Tandy Third Party Product — Express Order Software



EXCITING NEW CHANGES!!

by Brian A. Lantz

Welcome to the NEW MOTD!! I hope that you are as excited about the changes that we have made to the "Message Of The Day." This is your newsletter!! Let Bruce know what you would like to see in these pages. We are planning to start carrying reviews on a regular basis. Also, we hope to carry more technical articles, on both hardware and software. If you have an article, program, or a tip that you think other users can benefit from, send it in!

Also, notice that we are starting to accept advertisements from vendors of OS-9 related products. This is being done for several reasons. First, several vendors have been interested in doing this so that they could advertise in a publication that is 100% OS-9 users. A few vendors, especially of COCO OS-9 products, have only a few products available for OS-9, and need to spend their advertising dollars in the best possible way. Second, the feedback that we have gotten from many of you has been that you wished that we could supply you with this sort of information.

Thirdly, and most importantly, the MOTD has until this issue been produced by your membership dues. This limited us in how much we could do for the UG, since the majority of your dues was going to produce the newsletter, alone. By accepting advertising, we can allow MOTD to be self-sustaining. This will free up a lot of the UG's finances to be used in new and exciting ways.

Before I leave the subject of the MOTD advertising, we have tried to contact all of the vendors that we could find, but I am sure that we have missed many. If you are a vendor and have not been contacted with information about advertising in the MOTD, please give Bruce Warner (the EDITOR) a call, or drop him a line. He will send out all of the information you need.

And, lastly, a word of thanks to Falsoft, for making this NEW MOTD possible. Let us know what you think of the changes made!

Boy, these have been exciting months!! The membership of the OS-9 Users Group is well over 1100 members. For several months we have been growing at better than 125 members a month! Thousands and thousands of disks have been sent out to members around the world! With talk of additional machines to be added to the list of OS-9 machines (see elsewhere in this issue), this becomes more and more one of the HOTTEST markets around!

Microware's 4th Annual OS-9 Seminar in Des Moines was a smashing success! We raffled off over \$4500.00 worth of software and hardware, donated graciously by the following vendors:

AAA Chicago Computer Center
Computer Systems Center
Computerware
DaleSoft
D.P. Johnson
Falsoft (RAINBOW)
Frank Hogg Labs
Kimtron Corporation
Lloyd I/O
Spectrum Projects
Stylo Software

A special thanks goes to Kimtron Corporation, who donated 3 Kimtron KT7 terminals. The lucky winners of the KT7 terminals were John L. Clark Jr., Bill Turner (Vice-President), and Frank Hogg! Of all of the people involved in the raffle, Frank was probably the least interested in winning a terminal. You see, he had brought several terminals to the show, and was trying to sell them so he wouldn't have to ship them back to NY! Oh, to have such luck!!!!

Other lucky winners include Mike Smith, Howard Burman, Mike Bailey, Lachance Jean, Tom Westhoff, Dan Johnson, Byron Blanchard, Chris Radzik, Chris Kuebler, V.D. Tharp, and once again, Frank Hogg (This time he won a copy of STYLO for 68000 OS-9 — Just what he needs — It's bundled in with his QT computers!!)

There were several exciting announcements at the Seminar. The preliminary information for the OS-9 Network File System was announced and demonstrated there. Also the Hitachi 83484 Advanced CRT Controller chip was demonstrated, with Microware's software demo. This is THE graphics chip to use for 68000 applications.

Color Computer users were especially blessed to be given a first glimpse of Version 2.00.00 of Tandy's OS-9. The improvements here were impressive! Version 2.00.00 should (hopefully) be available by the time you read this, at the local Tandy Computer Centers.

The Annual OS-9 Users Group meeting was a big success, also. The minutes of the meeting are elsewhere in this issue. Be sure to read them. Among the decisions made in Des Moines are:

1) The entire software library is being made available in a condensed format on 5" double-sided, double-density 80 track disks, ONLY. The price for the Library Set will be \$10.00 times the number of disks that it currently takes to hold the set (which is currently 6 disks — \$60.00). The disks from this set are NOT available separately!

2) Effective January 1, 1986, the price of UG software disks goes up to the following:

5" disks — \$5.00 each
8" disks — \$8.00 each

The reason for this was that by the old prices, we were losing money most of the time. Our cost from Frank Hogg Labs, who are kind enough to handle the duplication and distribution of the disks, is \$3.00 (our old price). Any time we had a problem with a disk and had to send out replacements, it was at a loss. Anytime the payment was with a check from out of the U.S., there were bank charges that were not covered. By raising the price of the disks, we will never find ourselves losing money on the disk orders.

3) The UG voted to have Falsoft publish the MOTD in the format and style that you see here.

4) The UG voted to designate the RAINBOW as the "Official Magazine of the OS-9 Users Group." This is in support of the excellent coverage of OS-9

that the RAINBOW has been supplying, and will continue to supply. Though other magazines have covered OS-9 (many of which no longer exist), the RAINBOW has consistently presented OS-9 in a positive and constructive atmosphere, for both the readers, and the vendors.

Since the Seminar, several exciting things have been started. The UG officers are available on DELPHI as well as on COMPUSEVE. See the article on this in this issue.

The UG will start sponsoring a OS-9 BUFFET BREAKFAST at the RAINBOWFESTS, starting with the one in Palo Alto, CA., February 14-16. Our first Keynote Speaker for the breakfast in Palo Alto will be Paul Searby. Paul is President of Computerware, one of the major software distributors for OS-9. The breakfast will start at 9:00 a.m. Tickets are \$12.00 and are available from the UG. Mark all BUFFET BREAKFAST orders "ATTN: BREAKFAST."

While on the subject of RAINBOWFEST, Palo Alto — The UG will have a booth at this RAINBOWFEST. Stop by and see us in the exhibit hall.

All UG members that wish to subscribe to the RAINBOW (or renew their subscription) can receive a \$3.00 discount through the UG. There is further information in this issue.

The UG now is using a mail-forwarding service to allow us to receive your correspondence in a faster, more efficient manner. The old address will still be good for a little while. The new mailing address is:

OS-9 Users Group
9743 University Ave. Suite #330
Des Moines, IA 50322

The Japanese OS-9 Users Group, a separate organization, got started last summer, with several hundred members at the first meeting. At the Seminar, I presented Toshio Shinjo, President of

Microware Japan Ltd., with a copy of our entire software library to be given to the Japanese UG. This will hopefully be the first of many valuable exchanges between our groups.

Well, my page is filled, and I haven't even gotten started. The next few months should make these last few months look dull in comparison. We are planning several new educational ventures. A few companies are talking to us about setting up software development grants, to fund new software applications. New informational publications, more activity overseas... all this and lots, lots more! Hopefully, I will be able to give you more details in the next issue of MOTD.

A TRIBUTE TO TIM GROVAC:

In a time when volunteers were hard to find in the UG, Tim was there! We needed him, and he did not let us down! He, and his wife, helped to raise the quality of the MOTD tremendously with their hard work. The Board, and especially myself, were sorry when Tim made his decision to step aside for the time being. We have all agreed to support him in his decision. Let Tim know how much you appreciate the hard work and time that he spent to make MOTD a newsletter you could be proud of.

A CHARGE TO BRUCE WARNER:

You have a hard act to follow! All of Tim's contributions to the UG are probably not yet known. His hard work should continue to surface and make your work easier. You have the responsibility of bringing timely information to the membership. This needs to be done in a way that makes all UG members proud of their association with the UG. The MOTD is probably the most valuable item that we receive for our membership dues. You have the hard responsibility of making it worth the expense!

SAVE A BUCK OR TWO (AND MAYBE THREE)

When you're ready to start or renew your subscription to RAINBOW magazine, send your form to the following address with a check made out to the OS-9 Users Group:

OS-9 Users Group
Attn: MISC.
9743 University Avenue
Suite 330
Des Moines, IOWA 50322

The only other detail you should know is that you need to take off \$3.00 from the regular subscription price. That's the current discount offered to Users Group members, so your next subscription to RAINBOW will cost you \$28.00 instead of the usual \$31.00. That's almost 10% off the usual subscription rate and over 40% off the newsstand price!

Once again, make sure you send your subscription/renewal form to the Users Group with a check made out to the Users Group.

New OS-9 Computers

The CompuServe OS9 Sig. Copyright © 1985. Reprinted by permission.

*** Attention Atari ST owners: You say you want a powerful, flexible, multitasking, multiuser operating system for your Atari ST? Well, you're going to get it! A company, whose name I can not yet mention, is now in the process of porting OS9 to the Atari ST! Believe me, I know. I will also be a beta tester for ST/OS9, so as time goes on, I will be able to answer most questions you may have.

Designed by Microware Inc., OS9 is a Unix-like operating system, with much of the power and flexibility of Unix, but without the price or size! It is, and has been for about 6 years, running on a variety of 6809 and 68000 CPU's, including Gimix, Smoke Signal, SWTPC, Tandy Color Computer, Helix, and UniQuad. It has recently been announced and is being distributed with a 68000 coprocessor for the IBM PC/XT/AT! It is also in the process of being ported to the Commodore Amiga. It will be available possibly during the first quarter of 1986, or the second quarter at the latest.

OS9 comes with a full complement of utilities, pipes, and filters, just as Unix does. It also provides access to a wide variety of business software, and a wide variety of programming tools and languages, including C, Pascal, BASIC09, Fortran, and Cobol.

Stay tuned to the CompuServe OS9 Sig for news of this new product for the Atari ST, and for constant news, information, technical assistance, and public domain software.

Remember, you heard it here first! Please pass the word, and when you want to visit the OS9 Sig, just type "GO OS9" from anywhere on CompuServe! The OS9 Sig is dedicated to the promotion of OS9 and OS9 information, and to helping OS9 users. We have been open for 3 years and we are 1000 members strong at this moment. We are also the repository for the international OS9 Users Group Software library, and we are the largest single common gathering and information point for OS9 users, no matter what computer is being used.

Wm. A. Van Nest "Van" 76703,467
SysOp of the CompuServe OS9 Sig

The CompuServe OS9 Sig.
Copyright 1985 Reprinted by permission.

*** Attention Amiga owners: You say you want a powerful, flexible, multitasking, multiuser operating system for your Commodore Amiga? Well, you're going to get it! A company, whose name I can not yet mention, is now in the process of porting OS9 to the Commodore Amiga! Believe me, I know.

Designed by Microware Inc., OS9 is a Unix-like operating system, with much of the power and flexibility of Unix, but without the price or size! It is, and has been for about 6 years, running on a variety of 6809 and 68000 CPU's, including Gimix, Smoke Signal, SWTPC, Tandy Color Computer, Hazelwood, Helix, and UniQuad. It has recently been announced and is being distributed with

a 68000 coprocessor for the IBM PC/XT/AT! It is also in the process of being ported to the Atari ST. It will be available before, or during the second quarter of 1986, and possibly the first quarter of 1986!

OS9 comes with a full complement of utilities, pipes, and filters, just as Unix does. It also provides access to a wide variety of business software, and a wide variety of programming tools and languages, including C, Pascal, BASIC09, Fortran, and Cobol.

Stay tuned to the CompuServe OS9 Sig for news of this new product for the Commodore Amiga, and for constant news, information, technical assistance, and public domain software.

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Wm. A. Van Nest "Van" 76703,467
SysOp of the CompuServe OS9 Sig

The CompuServe OS9 Sig
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*** Attention IBM PC/AT/XT owners: TLM Systems has announced a 68010/68000 coprocessor for your system! This coprocessor also runs OS9, the Unix-like, multiuser, multitasking operating system for 6809 and 68000 CPU's. You can run PC-DOS and OS9 or CPM/68K concurrently!! OS9 is very powerful, modular, device independent, and compact. There is a broad range of applications software already available for OS9 users as are languages such as BASIC09, Pascal, C, Assembler, Fortran, and Cobol!

For more information from TLM Systems, see ads in current Byte magazine, or contact:

TLM Systems
4704 W. Jennifer
Suite 105
Fresno, CA 93711
209-276-2345

Be sure to let TLM Systems know you heard about them from the CompuServe OS9 Sig. Mentioning my name can't hurt either one of us, either!

Stay tuned to the CompuServe OS9 Sig for all your OS9 news, information, public domain software, and technical advice. "GO OS9" from anywhere on CompuServe to get to the OS9 Sig. The OS9 Sig is 1000 members strong and has 3 years of OS9 experience to assist you. The OS9 Sig is also the repository for the international OS9 Users Group software library, and is a primary means of communication among OS9 users on all computers.

Wm. A. Van Nest "Van" 76703,467
SysOp of the CompuServe OS9 Sig

*** Attention Tandy Color Computer owners or prospective owners:

While I can't reveal my sources at their request, I can confirm and clear up a rumor or two.

It seems there is definitely a new Color Computer coming from Tandy. Prototypes are being used to develop software even as you read this. This much I can tell you: It will be compatible with previous Color Computers. It will have powerful and flexible graphics hardware. It will have 512K of RAM. It will run OS9, and OS9 will be available for it. It will appear somewhere between March and May of 1986. It is being manufactured right now, in an undisclosed location overseas. It is not a myth.

Again, I can't reveal my sources, but I guarantee they are respected, well known figures in the Color Computer world, and know of what they speak.

I hope this helps dispel a few rumors and worries any of you may have!

Wm. A. Van Nest "Van" 76703,467
SysOp of the CompuServe

TANDY'S RESPONSE

Tim,

We've been hearing all kinds of rumors re a new CoCo — most of them seem to reach Tandy Center last!

I have talked to the product manager, Barry Thompson, about this, and am told that, IF (big IF) a new or upgraded CoCo IS brought out, we should look for it about that time. Certainly not before.

Tandy's new product development cycle is lengthy...and we're VERY careful not to comment until we know whereof we speak. So, though I'm sorry not to answer your question directly, I'll have to defer and say only that there is no new or upgraded CoCo at present, we are interested in further extending that product line as long as users support it, and I'll do my best to give you advance information when I can. Fair enough? Will also take your E-Mail to Barry to see if he has any other comments he'd like to add.

Debbie

The Ins And Outs Of The New MOTD

Lawrence C. Falk, President
Falsoft, Inc.

9509 U. S. Highway 42
Prospect, KY 40059
Dear Lonnie,

Thank you for the offer to assist the OS-9 Users Group at Rainbowfest Princeton.

Please consider this letter a request for a written proposal regarding your offer. I have appointed a special committee to study your offer and I will direct them to return a recommendation to me prior to the annual meeting of the

Users Group at the 4th Annual Microware Seminar in Des Moines, IA, November 2.

In order to eliminate the mail delay please send your proposal to my home address: 6516 Hillside Lane, Alexandria, VA 22306. If possible I would like to have your proposal in hand no later than Friday, October 25, 1985.

Thanks again for your interest in the OS-9 Users Group.

Best Regards,
Dale L. Puckett, President

Don Williams, President
Computer Publishing, Inc.
POB 849, 5900 Cassandra Smith Rd.
Hixson, TN 37243

Dear Don,

Thank you for the offer to assist the OS-9 Users Group in your letter of September 20.

Please consider this letter a request for a written proposal regarding your offer. I have appointed a special committee to study your offer and I will direct them to return a recommendation to me prior to the annual meeting of the Users Group at the 4th Annual Microware Seminar in Des Moines, IA, November 2.

In order to eliminate the mail delay please send your proposal to my home

address: 6516 Hillside Lane, Alexandria, VA 22306. If possible I would like to have your proposal in hand no later than Friday, October 25, 1985.

Thanks again for your interest in the OS-9 Users Group.

Best Regards,
Dale L. Puckett
President

July 6, 1985

Dear Don,

Please accept our sincere apologies for letting your application for membership in the OS-9 Users Group slip through the cracks. As soon as I read your note in your August Issue, I sent membership committee chairman Joe Dubuc a note and asked him to enter 68 Micro Journal into the OS-9 Users Group data base immediately. I also asked him to send you Users Group Disk Number Zero and a copy of each back issue of MOTD he has on hand. MOTD is the group's bi-monthly newsletter. I am sorry for any inconvenience we have caused.

I hope you can find it in your heart to publish the following kudos to a small cadre of hard workers who have helped this group grow from just more than 50 members in August of 1983 to nearly 800 today. The kudos will take the form of a listing of the groups accomplishments during this same period.

First, a tip of our hat goes to Tim Grovac and his wife Lori in Kent, Washington. They both work hard to publish MOTD every other month. Tim and Lori stepped into publish the newsletter after Dick Dundon passed away last December. The last issue contained more than 20 pages of solid information. Several have been longer. Our hats are also off to the regular contributors that make Tim's job easier: Greg Morse, who writes an information packed column called BASIC09 Corner; Jim Schmidt,

who's CoCo Advocate column is both informational and fun; Bert Schneider, who writes Users Group Software Commentary, a regular series of reviews covering software contributed to our exchange library; Dave Kaleita, who updates readers about the latest library contributions and offerings and George Dorner who has contributed several interesting articles in addition to his regular treasurer's reports. These men form the heart of MOTD, but more and more members are contributing ideas and short notes every issue. Thanks to all.

Our next round of Kudos goes to Dave Kaleita, Chairman of our Software Exchange Committee. Dave almost single-handedly organized the group's software holdings into a coherent set of tools that any member can order and use. We must also thank the several dozen members who contributed the 200 plus programs that Dave has organized on 35 disks. The list reads like the Who's Who of the 6809 world, including: Hal Snyder, Carl Kreider, Eric Williams, Peter Dibble, Bryan Capouch, Greg Morse, Peter Lyall . . . to name just a few. But more importantly, these disks can't be used by anyone until they are duplicated and distributed to members. Kudos for this hard work go to Frank and Carol at FHL who have shipped nearly 1,000 disks for us since the first of the year.

So what else has the OS-9 Users Group done for its members? Thanks to the imagination and efforts of our treasurer,

George Dorner, we hosted several hundred OS-9 users at a special hospitality room during Rainbowfest Chicago. Since it was such a great success, we hope to do the same thing in Princeton this October. By the way, we plan to hold a meeting of the Users Group at Princeton following the last scheduled seminar Saturday.

Don, we realize that the group has had its problems. However, most of them have been logistic in nature and we are working hard to fix them. For example, the most serious problem has been with the first link — from our mailbox in Des Moines to George Dorner who sorts the mail and distributes it to the proper committee for action. We are recruiting now, hoping to nominate and elect a new secretary who can take charge of the mail problem. But we do not plan to make him do it on his own. We are preparing to hire someone there to do the actual work. This should smooth up the operation tremendously.

We realize also that we need to find a way to handle simple technical questions from people. We are leaning toward appointing a committee to do this. But, please advise your readers to give us their phone number when they write with a question. Since we don't have a professional staff, it is almost impossible to mail individual answers. However, when we have a number, we often call the person with an answer — when we know it.

Thanks to Joe Dubuc, Robert Ringrose and James Petty of our membership committee in Oklahoma City, administrative functions have ran pretty smoothly for the past year. Joe has installed an impressive data base that has helped us provide better service to everyone.

Perhaps a bit of history is appropriate here. Brian Capouch spearheaded efforts to get a group going at the Microware Seminar in 1982. However, there was a lot of bickering among the other officers that first year and the movement never really picked up steam. Peter Dibble and I observed the attitude — and the total lack of volunteers to serve as officers — at the Microware Seminar in 1983. We chatted a few moments and decided we should stand up and go for it. Needless to say, we were elected immediately. Taking our lead, Tom Murphy of Suntel Systems in St. Louis and George Dorner of Harper College stepped up to serve as Secretary and Treasurer respectively. When Tom had to resign to take care of a growing business, Dave Gibson, a programmer with the Department of Transportation in Washington, D. C. stepped forward to the challenge.

Thanks to Tom's business management skills, George's tenacity, and the access to the media enjoyed by Peter and I, we got the ball rolling. The accomplishment of the goals we set is the result of the hard work of the people named above and many others. But, nothing would

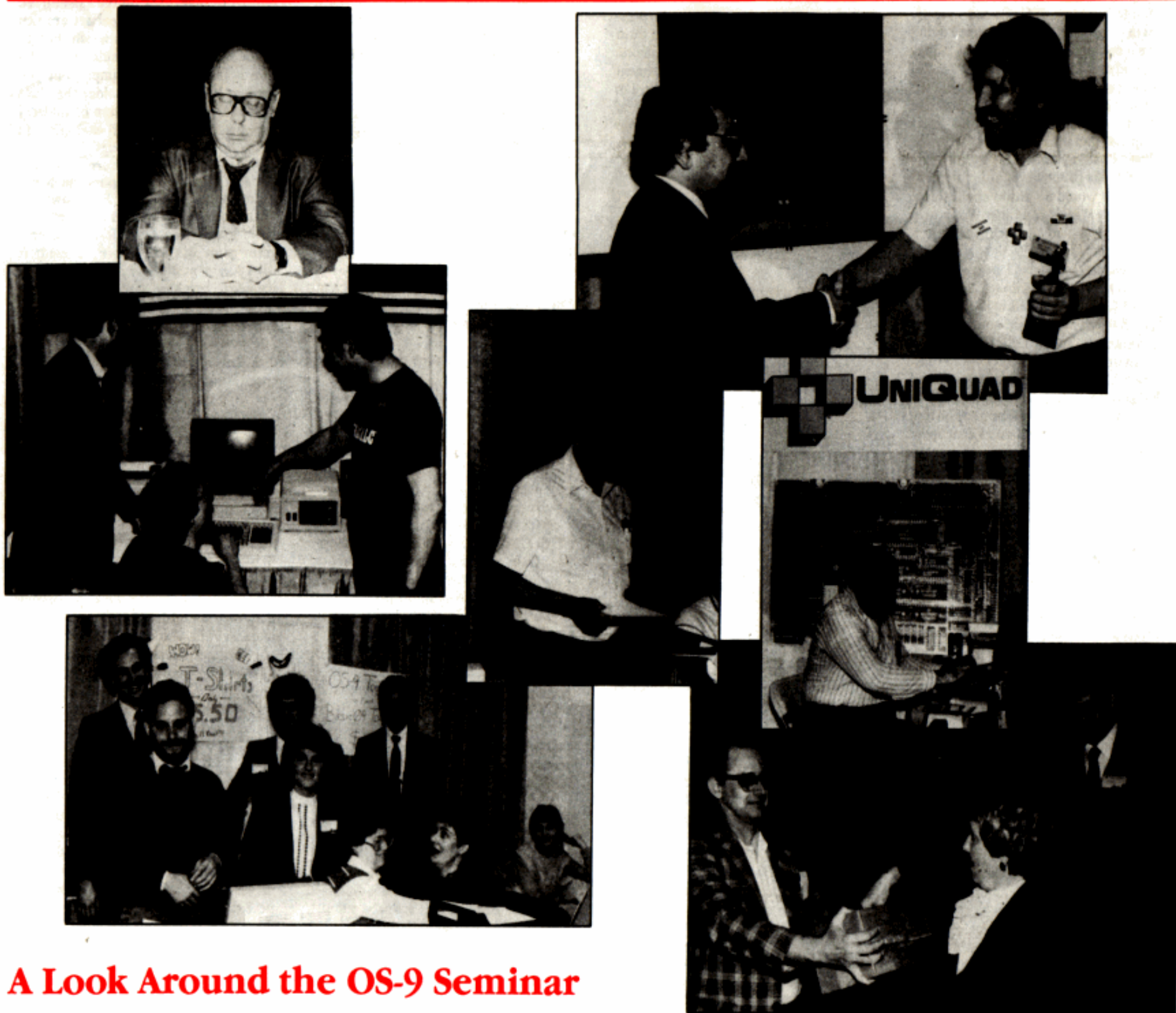
have happened if someone hadn't stood up and accepted the challenge. We're glad we did it.

When we volunteered, Peter and I agreed to give it a try for a year. That year came and went and until recently no one has stepped up to take our place — or even nominate replacements. Yet, I bring you good news. We now have a new slate running for office and we hope to pass the torch at Microware's Seminar in November. Bryan Lantz, who has written a lot of OS-9 software for Computerware and FHL is running for President. He has Bill Turner, who works for GTE Sprint and has written for Interface Age, on his slate. George Dorner, who has served so faithfully for the past two years has decided to go for another term as treasurer.

We welcome additional volunteers. In fact, we would be proud to have someone from 68 Micro Journal serve as an officer of the OS-9 Users Group. We will be publishing information about the election in an August letter and sending ballots with the September issue of MOTD. The deadline for returning the ballots will be early October. New officers will be installed at the Microware Seminar in Des Moines on Nov. 2.

Sincerely,

Dale L. Puckett President, OS-9 Users Group



A Look Around the OS-9 Seminar

Color Computer Users Comments

By Damon Hill

As a Color Computer user with a technical background and interest in computers and their uses, I have been buying and using a lot of equipment in the last year or so. I'm mainly interested in hardware projects related to the CoCo, although the principle use of my system has been for writing (a fantasy novel and lots of correspondence). As a result, and because I'm opinionated, I've been keeping a written record of my experiences good and bad which is occasionally updated. If you've got a copy of it, it's because I thought you'd be interested. Feedback from other users would be appreciated.

I'm employed by Solid State Systems, Inc. in Marietta, GA as an electronics technician in the System Test Department; I test and repair various types of power supplies, both linear and switching, some weighing up to 120 pounds. More recently, I've been working with the 68000/Versabus computer we manufacture and use with our products: private branch telephone exchange systems and energy management systems. By year's end, we hope to move to a large new facility on Wade Green Road at I-75 near Kennesaw.

I obtained my first CoCo as a used 4K unit in October, 1983. At the time I didn't have a computer, nor very much money to spend on one, and I desperately needed a word processor for my writing projects. My mad artist friend, Jerry Collins, had a friend who wanted to sell his fairly cheap. (At that time \$125 for a CoCo was cheap.) I had my doubts, and didn't care for the looks of the keyboard either, but I figured it would do until I could someday afford a "real" computer. Preferably a S-100 bus system, maybe the nifty new

Almost immediately, I began finding out that the Color Computer is a pocket rocket! I soon upgraded it to 32K, then 64K. Telewriter followed soon after, as did a pair of Tandon DSD disk drives and an upgrade to Telewriter 64. In time, I had added a Zenith video monitor and an Okidata 92 printer. I use my computer mostly as a word processor and for that alone it has been worth every cent spent on it. Consequently, my system is configured with that sort of use in mind and this report reflects that bias. Telewriter 64 has some limitations, but on the whole the combination of it and the Color Computer make for a cost effective word processing system, especially when combined with double-sided disk drives and a compatible DOS like ADOS.

Without it, I wouldn't currently be working on a multi-part fantasy novel. Writing, drawing, and reading science fiction and fantasy make a nice change of pace from electronics.

However, as valuable as my CoCo has been as a writing tool, I originally bought it to have as a computer for learning about the hardware and programming aspects of computing in general. And much of the pleasure of ownership has been in squeezing out extra performance. I'm interested in hardware mostly, but have been reluctantly and slowly forced into software, too. Future interests lie in graphics and classical animation with computers, and in assembly and structured programming languages. I'd really like to have a CAD-type system for drawing schematics and circuit board layouts, but that'll probably have to wait until a reasonably low-cost 68000-based microcomputer appears with a hard disk

and at least a megabyte of memory. Does this sound like an Atari or Commodore? Tandy sure did miss the boat on this one! I'm still waiting, though.

The Color Computer's disk operating system and hardware are a little primitive (so what else is new?). I had intended all along to purchase double sided 40-track disk drives and use them with the FLEX operating system. However, I got a copy of the OS-9 operating system about as soon as it became available and also added an 80-track drive for additional storage (I'm now running three TEAC 55-series drives). That DOS interests me because it's very similar to UNIX, which threatens to become the next major "standard" on EVERYTHING, mainframes to micros. Most recently, I've added the DSL 128K mod and use it as a RAMdisk on OS-9; it'd be nice to have a hard disk, but the hardware and software support isn't in place yet, as far as I can determine. It took awhile, but my computer system is finally "fully operational" on OS-9, though I am still slowly learning the ins and outs of this complex and powerful operating system.

That our beloved CoCo is often scorned by others as a "game" computer is unfortunate — the 6809 microprocessor has a reputation of being the most powerful 8-bit chip around, and makes our modest "toy" a low-cost investment in computing power second to none. I'm still squeezing more performance out of my original battleship-grey unit and expect to be using it for several more years. Not bad for a substitute for a "real" computer!

Damon Hill
3261 Circle Oak Dr. NW
Atlanta, GA 30339

Home: (404) 432-0245
Work: 952-9401

Damon Hill has offered his unsolicited opinion about a variety of software and hardware available for the Color Computer. Those items which are not OS-9 compatible have been removed. The original list consisted of:

CoCo II 16K ECB
64k RAM set (2)
Multipak interface
PBJ WordPack II
OS-9 driver
TEAC 55F disk drive
TEAC 55B disk drive (2)
HDS disk controller
DSL 128K logic board
GMM EPROM programmer
NAP BM7552 Video Monitor

Here are Damon's opinions about this equipment.

WordPack II

The two major advances in the addition of the WordPack are the gain of an additional 8K or more of free memory and greatly improved readability over the use of a hires graphics display such as O-Pak, which although a very useful utility, requires a healthy amount of memory. It makes DynaStar at least useable, if not as easy to use as Telewriter 64, my WP program of choice.

Aside from the memory space gained and improved readability, the display rewrites in DynaStar are noticeably speeded up in comparison with O-Pak. A particularly nice touch was the video

switch. I'm looking forward to being able to use the 8K of additional RAM possible with this new design.

There have been problems with my WordPack unit. It didn't always load the RS BASIC driver and activate itself without crashing the computer, and the video switching relay could be easily upset with a minor jar. Sometimes the computer would just crash, and not boot up again until the WordPack was removed or allowed to cool off. Moreover, the display wavers noticeably, as though there was some sort of ripple component in the video.

I sent it back to PBJ for their evaluation. They returned a new board which doesn't seem inclined to crash or jar out of operation, but the display still wavers annoyingly. I thought this was a hardware problem, possibly a ground loop. However, it apparently is a timing problem; an appeal to FHL for assistance resulted in a program listing from PBJ to adjust timing constants for the RSDOS driver, though I've not received anything for OS-9. I'm still trying to figure out what I'm supposed to do with the program. Has anyone else had this problem?

Tentatively recommended for OS-9 and Flex users who need the extra display and free memory. I do wish Telewriter worked with WordPack (are you listening, Howard Cohen?).

CoCo II

I purchased a 16K ECB CoCo II for \$120 from a mail order source. Spectrum Projects was selling sets of 64K RAMs for only \$30, so I decided to buy a new unit to supplement my old battleship-grey unit for considerably less than what the original 4K unit cost me two years ago. Upgrading this model to 64K is very easy: Plug in the 64K chips and solder one jumper. The latest versions of the CoCo II have most of their chips soldered in place, including the ROMs and possibly the RAMs. This saves money on sockets, but discourages experimenters and modifications.

One problem cropped up after extended use: the G key sometimes stopped working in RS BASIC, but still worked on OS-9. Since I voided the warranty installing the 64K RAM chips and video/sound output board, I was obliged to troubleshoot this one myself.

To that end, I purchased a CoCo II Service Manual (RS p/n MS-2603026-983) from Spectrum Projects for about \$20. I was planning to buy one anyway; need merely speeded up the process. It is well-organized and clearly written, with plenty of circuit explanations, diagrams and trouble-shooting procedures. A recommended item for those planning to do their own repairs and/or interested in the inner workings of the CoCo II. NOTE: the extensive changes in the most recent versions of the CoCo II will require significant updates in the service manual.

The problem with my balky G key? C18, a 0.1 uF RF bypass capacitor on the input of the right joystick fire button was leaky, pulling down the signal level on one input line of the 6822 PIA. I'm not certain why it would still work on OS-9 as it did. A triggered 'scope is almost indispensable in trouble-shooting computers and digital circuitry.

About a week after fixing that problem, the computer began acting as though it had memory or firmware problems, I kept getting OM errors. That

turned out to be a defective 64K chip.

The +5V regulator transistor runs hot: input voltage is nearly 12V so it must drop about 6.5V. A large additional load of both a disk controller and the WordPack via a Y cable caused serious overheating; it seems a Multi-Pak Interface is good practice if you want to run more than one module in the expansion port. This doesn't entirely solve the heat problem, which is a result of cost-cutting design by Tandy.

The Multi-Pak itself tends to take up a lot of room and in general gets in my way on the desk. I put a longer cable on the disk controller so I could move the drives in a more convenient location. On the other hand, I was going to have to buy one anyway for some other modules, including a serial and possibly a parallel port.

If my system continues to expand, four slots may not be enough.

DSL 128K RAM Expansion Board (received 12/05)

This consists of a single board that plugs into the SAM chip socket, with a couple of clip leads. An additional set of 64K chips piggyback on the existing set. Pins 9 and 15 of the upper set are tied together in separate lines which then go to the new board. The resulting installation is fairly neat and simple, but you need to be careful and solder the chips very neatly with a minimum of solder. I had trouble getting my installation to work until I did these things.

After getting the setup corrected, I ran the PAGER BASIC program which appears in the December Rainbow; the board seemed to function as advertised. After a while, an OS-9 RAMdisk program came out and was purchased. It works very nicely now, although there seemed to be a hardware problem during the early stage of testing which eventually vanished. Once it was working reliably, I found that it's rather nice to have. The disk drives just shut up, and execution speed is gratifyingly fast, nearly instant. The only problem I can see now is that a 128K mod only whets my appetite for more memory.

Now that a couple of 256K and 512K mods are on the market, perhaps software support will become available... it sure would be nice to run OS-9 Level II, with maybe 256K of program space and 256K of RAMdisk! I'm not sure if that's possible or practical, but one can dream, can't they?

I am hoping that a word processing program capable of using the extra memory will also develop for RSDOS applications. Keep in mind that a similar 128K CoCo was planned by the Shack and that the users almost always come out with their own upgrades and applications first.

TEAC 55F Half-Height DS 80-track Disk Drive

Anyone notice the precipitous drop in disk drive prices in the last couple of years? It's now possible to buy top-quality drives for well under \$200. I've seen 2 1/2 height double-sided 40-track drives for under \$40! There's practically no excuse to not own at least one disk drive now, no matter what your budget.

The Color Computer disk controller will support more than a 35 track single-sided disk drive, and with no hardware modifications, although a great many owners don't seem to be aware of that

fact. There are several versions of modified Disk BASIC as well as the FLEX, STAR-DOS and OS-9 operating systems, all of which will support up to three double-sided 40-track drives, some will support 80-track drives.

I bought a TEAC 55F 80-track unit for use with the OS-9 operating system. I generate a LOT of text files, mostly correspondence and a fantasy novel project, so I expected to need this sort of capacity (about ¼ megabyte of storage). It's nice to have. My entire fantasy story project, background notes and all, now takes up about half a disk. In RSDOS, that works out to at least four disks and growing monthly as my story is slowly being written.

The Johnson SDISK disk driver module for Radio Shack's version of OS-9 is capable of double-stepping the heads for 40-track operation automatically, it determines the disk format when it reads the directory and makes the necessary operating adjustments. Nice touch.

The TEAC has a head-loading solenoid and so clicks audibly when the drive is accessed. The spindle motor is flat as a pancake.

Two TEACs will fit in the space of one RS standard or Tandon drive, and a pair of drives appear to require less power than one standard drive. You'll need metric screws to mount the units in an enclosure. You can sometimes use single-sided diskettes with this unit, but double-sided diskettes will be more reliable. See my notes about the HDS Disk Controller.

Panasonic JA-551-2 Double-Sided 40-Track Disk Drive

As with the TEAC unit, this drive fits in half the space of a standard height drive. However, it is slightly longer and uses slightly more power than my Tandon drives; thus proving that not all half-height drives are necessarily half power too. Also, probably due to a marginal power supply, I sometimes had problems in formatting disks without getting I/O errors and a lot of spurious head seeking that my Tandon drives don't seem to exhibit. On the other hand, it is the quietest drive of the group, head stepping is nearly silent.

This is a good drive, but the caveats about depth and power supply requirements should be noted. Also, connectors are located a bit differently, so attaching cables gets slightly complicated by the offsets.

Because I thought servicing might be a problem, I obtained a copy of the Tandon TM-100-2 service manual, and plan to get service manuals for the TEAC and Panasonic drives. Where DOES one go for service and parts on non-Tandy drives? This could be a serious problem.

Hard Disk Specialists Disk Controller (received 12/21/85)

There are now several disk controller boards available for the Color Computer. A new entry into the market, Hard Disk Specialists, a division of Compukit, offers an up-to-date design with all-digital circuitry and the option of two jumper-selectable ROMs on board, including 24- and 28-pin EPROMs. The assembled version with Disk BASIC ROM sells for \$139, without ROM for \$119. A kit version, less ROM, is \$80, with ROM, \$100.

Version C of the design differs considerably from their earlier version and Radio Shack's. Part of the lower cost seems due to the use of a WD1773 controller chip, which contains its own data separator and precompensation circuits. The result is a board with a significantly lowered parts count (8 ICs VS Radio Shack's 14), no adjustments to make, and

simplified assembly. Just to look at it, I'd say HDS could sell the kit for \$50 and still make a profit. They have been offering discounts to as low as \$60 for the kit version.

Initial impression is very favorable: The circuit board is silk-screened and solder-masked, with gold-plated connectors and solder-plated component holes and pads. All parts are of good quality, the only shortage being that only one jumper instead of three was in the kit. The instructions are not Heathkit-lucid, but are clear enough and include a good soldering tutorial for less experienced builders. All ICs are socketed.

Due to the low parts count, construction time should be 1 to 2 hours, depending on an individual's experience and practices. I chose to solder all small ICs on the board, since such parts rarely fail and sockets themselves are sometimes prone to problems. Larger devices don't fail that often either, but can be quite a pain to remove without damaging the board. Obviously, you don't want to solder in the Disk BASIC ROM... Cleaning the board with a flux remover (Sear's general-purpose paint and lacquer thinner works well for this purpose) is recommended but not necessary. Best to blow the board dry with compressed air rather than letting excess solvent evaporate.

So far I've found a couple of problems in operation, which may or may not be significant. One was with 80-track disk formatting and reading. My Radio Shack controller would format Verbatim and Scotch/Sears single-sided double-density disks in my Teac 55F drive as double-sided 80-tracks. Not completely reliably, mind you, but enough for me to use them experimentally and saving me the cost of buying the right kind of disks. (I've always bought single-sided disks for use in 40-track doubled-sided use, and never had any problems.) However, I found that the HDS controller would have fits with those disks, both in formatting them and reading files on them.

When I tried out a new box of Maxell MD2-D double-sided disks, the HDS controller and the Radio Shack controller both liked them. Just goes to show you that you can't always get away with this practice. And that there are some minor functional differences between the two controllers.

The only other problem was that the 28-pin EPROM (2764) on which my version of ADOS resides would not work as a 28-pin device although it worked when modified back to 24-pin mode. Reports are coming of some software copy protect schemes creating incompatibility problems on controllers using the 1773. This is due to the 1773's inability to address single density disks. Some copy protect schemes use a mixture of single and double density tracks to confuse the system.

Based on the results so far, this is a product I can tentatively recommend for low price (in kit form) and quality.

Hard Disk Specialist's name implies that they build parts for Winchester-type drives, and I'm wondering if they intend to build systems for the Color Computer in the future. What I'm REALLY curious about is whether more hard disk interfaces and supporting operating systems will develop for the CoCo, especially on OS-9 (see the review on LR Tech's hard disk).

DynaStar (vs. Telewriter 64)

I don't particularly like Dynastar. Compared to Telewriter 64, it is more difficult to use: generally slower and requiring the running of a separate DynaForm printing program to get hard copy. It has some useful capabilities that Telewriter lacks, and I kept coming back to it hoping maybe I'd finally get used to

it. Wordpack made the big difference in the end, more readable and a much larger text buffer. Trying to use two different WP programs at the same time can lead to minor confusion with key commands, if I use one program for awhile and switch to the other I tend to use the wrong commands without thinking.

While WordPack's auto-repeat feature is nice, in DynaStar it sometimes is more trouble than it is worth, when I don't want so many repeats! If I hold down a key for too long, or hit the wrong key, it may be awhile before the screen finishes scrolling up or down, and I can't break into the program while this is happening to stop it.

DynaStar, like other OS-9 word processors, allows one to edit text files much larger than free memory. This was one of the reasons I originally purchased the program, because Telewriter can work with only 25K blocks of text, not quite large enough for my creative writing needs. Unfortunately, one cannot scroll backward through a disk file to edit an earlier part of the text; to do so you must write the entire file to disk and start over again! Not at all convenient! Evidently all the word processing programs available for the Color Computer share this limitation. By deleting the PIPES, RS-232 and T1 modules from the OS-9 boot file, and with the additional memory freed by the use of WordPack, the text buffer (now about 26K) roughly equals Telewriter's capability. This requires creating a special OS-9 system master disk to boot.

I had problems getting DynaForm and my printer agree on much of anything. I couldn't seem to pass printer commands directly to the printer for special functions such as correspondence-quality mode and 12 CPS mode. It took quite a bit of reading and some experimenting to determine the right codes. Documentation for both Dynastar/DynaForm wasn't very helpful in this area.

Also, DynaForm fragments memory, leaving a gaping hole in free memory after it has terminated. While I don't think this is a real problem, it's annoying and a bit sloppy.

A new version of DynaForm which is supposed to support different printers doesn't run at all on my system, it crashes

the computer when executed. FHL never responded to my letter on this problem and I'm still using the old version.

In summary, DynaStar works, though compared to Telewriter 64 it's a much more difficult program to use. By itself, it's not really worth upgrading to OS-9 just to have an OS-9 word processor. If you already have OS-9 or plan to get it and want a WP program for that operating system, other programs such as Stylograph III or Microtech Consultant's XWORD may be a better choice. Compare features and obtain manuals before you buy — I wish I had, but at the time the choice didn't exist and I'm not going to spend up to a \$100 for another WP program.

Future Thoughts

I've seen it mentioned before, that there's a big hole in systems between the CoCo and full-blown bus systems like the Gimix. There are some other single-board 6809 microcomputers, though none offer the integrated convenience of a CoCo at its low price. You have to be willing to do a lot of your own work, hardware and some software for much of it. Sure wish a couple of those Japanese 6809 micros were available here.

Just around the corner is Motorola's powerful RMS graphics chip set, which has an operating mode very similar to the 6883/6847 SAM/VDG chips used in the CoCo. This set, however, supports far higher text and graphics resolution and much more memory, and is compatible with the 6809, and 68008/68000 8/16/32 bit family. Just imagine what a program like CoCo Max could do with a megabyte or so of memory, and up to 600 by 400 resolution in many more colors! I can hardly wait, but it seems that Tandy has already waited too long. This is the chip they must use to have any hope of remaining competitive with Commodore and Atari, I think.

OS-9/68K support for the very high performance Hitachi graphics chip, up to 4K by 4K resolution(!), is on the way. This could make for one heck of a system, to rival the minis and even mainframes for performance. The future could be real interesting for OS-9 users. The 68000 family does seem to be the wave of the future for us.

Packet Radio and OS-9

George Dorner, W9ZSJ

OS-9 is a natural for the hamshack, but we really haven't seen any significant nor clever ham applications which really exploit the power of our favorite operating system. Its ease of multitasking should allow hams flexible use of their computers in the shack without dedicating the computer to ham uses alone.

The TAPR (Tucson Amateur Packet Radio, Inc.) TNC-1 terminal node controller for packet radio uses a 6809. (The TNC-2 regressed to use the Z-80 "by popular request.") This should allow even more integration in this new and exciting marriage of ham radio and computers through the use of OS-9. Which of you OS-9er hams out there are doing some-thing with OS-9 and packet radio, and why are you keeping it so quiet?

One ham (I lost his call!) who has done some nice work here is Duane Bruce, 29

Vanson Avenue, Nepean, ONT Canada K2E 6A9. According to the Packet Status Register #17, October, 1985 and the W3YI Report, Duane has a BBS program for use on packe radio which is compatible with the WORLI auto-forwarding BBS software which is found all over the country and which runs on Xerox 820 boards. Duane's version uses a different internal file structure but will do the file forwarding with existing RLI boards.

If any of you have done some hamming with OS-9 or if you know someone who has, why not drop me a line at P.O. Box 8251, Rolling Meadows, IL 60008? I will try to serve as a touchpoint for this slice of our two hobbies for the Users Group.

If you want a copy of a little handout which Bob, WA9ZUP, and I put together to explain packet radio to beginners, include a SASE.

DIRECTORY OF THE DATA LIBRARIES ON THE OS9 SIG COMPUSERVE INFORMATION SERVICE

The following list is provided for those members who are users of the Compuserve Information Service. The OS9 Users Group has much of it's software library on this telecommunications service in DL 4 below. The numbers in brackets [] are the user ID's of the people that submitted the program to Compuserve.

DL 0 - Sig & General info :

[76703,467]		
CONST.TXT	30-Oct-85 1475	Accesses: 71
[71076,76] PRIME.C	02-Jun-85 835	Accesses: 26
PRIME2.C	25-May-85 825	Accesses: 12
PRIME3.C	25-May-85 905	Accesses: 13
PRIME4.C	25-May-85 820	Accesses: 12
PRIME5.C	25-May-85 895	Accesses: 10
[70150,531]		
UGLIB.TXT	07-Apr-85 56730	Accesses: 79
[76703,467]		
TANDY.CO	17-Mar-85 4715	Accesses: 85
UGMEM.TXT	31-Jan-85 2305	Accesses: 249
[70150,531]		
DOCGN2.B09	12-Nov-84 18715	Accesses: 33
DOCGN2.BIN	12-Nov-84 31110(13280)	Accesses: 2
UGFORM.TXT	30-Oct-84 1795	Accesses: 28
[76703,467]		
OS9BBS.TXT	27-Oct-84 2945	Accesses: 131
CONF.HLP	28-Apr-84 3150	Accesses: 60
ACCESS.HLP	07-Apr-84 3085	Accesses: 114
CO.HLP	07-Apr-84 4900	Accesses: 54
MSGANS.HLP	07-Apr-84 995	Accesses: 34
MSGSCA.HLP	07-Apr-84 2340	Accesses: 32
NEWMEM.HLP	07-Apr-84 2765	Accesses: 78
SEND.HLP	07-Apr-84 1525	Accesses: 28

DL 1 - BASIC09 :

[71436,344]		
FILTER.B09	18-Sep-85 175	Accesses: 17
[72447,2732]		
PIXSCR.B09	25-Aug-85 1385	Accesses: 14
[72766,204]		
DMP110.B09	25-Aug-85 2050	Accesses: 18
[72437,3306]		
COPIER.B09	13-Aug-85 610	Accesses: 18
[72345,1347]		
CADIL.B09	25-Jul-85 12035	Accesses: 67
[71416,406]		
SOUND.B09	30-Jun-85 740	Accesses: 64
[74206,1715]		
OTHELO.B09	05-Jun-85 6055	Accesses: 89
[72236,154]		
CCDIR.B09	30-May-85 2590	Accesses: 34
[72756,3725]		
PLOTTE.B	27-May-85 3760	Accesses: 13
QUICK	27-May-85 1305	Accesses: 15
SINE.B	27-May-85 2045	Accesses: 12
STOL.B	27-May-85 760	Accesses: 15
UPPERC.B	27-May-85 680	Accesses: 16
[70755,1052]		
PRTRFM.B09	07-May-85 2180	Accesses: 32
[70255,472]		
PUTDOS.BIN	05-May-85 11485(4928)	Accesses: 24
[72345,1347]		
CHKDIS.B09	19-Feb-85 6970	Accesses: 135
[71725,441]		
SUMMR.Y.B09	10-Feb-85 3770	Accesses: 30
[70255,472]		
PUTDOS.B09	02-Feb-85 2910	Accesses: 96
[70305,422]		
DSORT.BAS	02-Feb-85 1125	Accesses: 96
[74126,2243]		
NICO.B09	06-Jan-85 1180	Accesses: 48
[70126,267]		
DBSRCH.B09	02-Jan-85 2245	Accesses: 34
[76703,467]		
DIDWP2.B09	10-Dec-84 4480	Accesses: 33
[70150,531]		
RMLOC.B09	12-Nov-84 865	Accesses: 30
[70150,521]		
LOWUP.ASM	25-Oct-84 1965	Accesses: 43

[71416,406]		
VCLOCK.B09	22-Oct-84 770	Accesses: 290
LTERM	16-Oct-84 6845	Accesses: 216
[74255,244]		
DFREE.B09	23-Aug-84 3075	Accesses: 78
DMFREE.B09	23-Aug-84 1855	Accesses: 60
EDIR.B09	23-Aug-84 5515	Accesses: 133
EDIT.B09	23-Aug-84 17725	Accesses: 164
F	23-Aug-84 1585	Accesses: 29
PIPE.UTI	23-Aug-84 5595	Accesses: 68
SORTDI.B09	23-Aug-84 6010	Accesses: 49
[71416,406]		
DRIVER.B09	11-Aug-84 2630(1152)	Accesses: 151
[74255,244]		
TIME.B09	10-Aug-84 4190	Accesses: 52
DIRSIZ.B09	07-Aug-84 1240	Accesses: 47
STRIPC.B09	07-Aug-84 1935	Accesses: 32
SUB	07-Aug-84 1130	Accesses: 32
[70126,267]		
BW6424.SRE	17-Jul-84 840	Accesses: 131
AUTOLO.B09	10-Jul-84 4120	Accesses: 137
[76703,467]		
DISKID.B09	23-Jun-84 4315	Accesses: 104
[74255,244]		
DIRFIN.B09	18-Jun-84 2155	Accesses: 51
[71446,1633]		
DKEDV3.B09	02-May-84 7755	Accesses: 88
MPRV2.B09	01-May-84 14130	Accesses: 28
RDFLEX.B09	30-Apr-84 7565	Accesses: 48
UTILS.B09	30-Apr-84 7605	Accesses: 93
[76703,467]		
NEWB09.TXT	27-Apr-84 2285	Accesses: 140
[71446,1633]		
DKED.INS	02-Apr-84 3420	Accesses: 93
DS.B09	02-Apr-84 2235	Accesses: 95
[70446,217]		
HANG.BAS	26-Feb-84 3450	Accesses: 37
[70536,106]		
PRIMES	18-Jan-84 1245	Accesses: 63
[76703,467]		
MAKE.PRO	09-Jan-84 2330	Accesses: 117
[71336,1142]		
STRIPN	07-Jan-84 1735	Accesses: 7
STRIPR	07-Jan-84 2605	Accesses: 3
[76703,467]		
PIPE.BAS	04-Jan-84 1530	Accesses: 186
PIPE.DOC	04-Jan-84 1455	Accesses: 194

DL 2 - 'C' & Pascal :

[75136,626]		
POINT.TXT	03-Nov-85 6930	Accesses: 14
ARGV.TXT	01-Nov-85 4860	Accesses: 9
[72065,1471]		
LOGON.C	11-Oct-85 9985	Accesses: 12
DISPLA.C	31-Aug-85 5890	Accesses: 22
[70145,530]		
SORTD.C	07-Aug-85 1795	Accesses: 52
[73016,1251]		
CAL.PAS	19-Jul-85 3300	Accesses: 42
[75136,626]		
CLOCKR.C	24-Jun-85 1810	Accesses: 66
[72065,1471]		
RCLOCK.C	21-Jun-85 3390	Accesses: 71
[70000,130]		
SPLIT.C	08-Jun-85 1540	Accesses: 56
[76703,467]		
PASCAL.THD	04-Jun-85 1650	Accesses: 32
[72756,3725]		
ASC.C	27-May-85 1930	Accesses: 22
[75136,626]		
RAND.C	04-May-85 165	Accesses: 62
FSPLIT.C	26-Apr-85 1425	Accesses: 38
JJ.TXT	26-Apr-85 665	Accesses: 122
LORDER.C	26-Apr-85 6725	Accesses: 36
ROFH	26-Apr-85 1360	Accesses: 29
TSORT.C	26-Apr-85 6135	Accesses: 33
ARITHC.C	28-Feb-85 6170	Accesses: 54
UC.C	17-Feb-85 32010	Accesses: 53
[70035,546]		
CONVC	25-Dec-84 1685	Accesses: 73

[75176,2330]			SYSVAL.ASM	23-Aug-84 1735	Accesses: 115
CINSTL.TXT	21-Nov-84 8705	Accesses: 149	UPDN.ASM	23-Aug-84 2145	Accesses: 30
[70366,1376]			CHARRD.A	10-Aug-84 1895	Accesses: 30
BOUNCE.C	01-Oct-84 2265	Accesses: 96	GETUSE.ASM	07-Aug-84 2045	Accesses: 29
GRAFDE.C	01-Oct-84 1070	Accesses: 69	WAKEUP.ASM	07-Aug-84 1905	Accesses: 20
GRAPHI.DOC	01-Oct-84 1765	Accesses: 117	[71336,1424]		
GRAPHI.LBR	01-Oct-84 12785	Accesses: 86	COP.DOC	14-Jul-84 655	Accesses: 24
[71336,1424]			COP.S	14-Jul-84 1850(800)	Accesses: 21
FM.C	06-Jul-84 3640	Accesses: 53	[72345,1347]		
FM.DOC	06-Jul-84 1065	Accesses: 65	LISA.ASM	30-Mar-84 4690	Accesses: 81
FM.S	06-Jul-84 7690	Accesses: 19	[71336,1142]		
USERS.C	06-Jul-84 2980	Accesses: 34	MAPIO.ASM	07-Jan-84 1640	Accesses: 33
USERS.DOC	06-Jul-84 1115	Accesses: 47	UNMAPI	07-Jan-84 1330	Accesses: 10
USERS.S	06-Jul-84 6975	Accesses: 6	[76703,467]		
[76703,467]			INKEY	05-Jan-84 355	Accesses: 65
COS.C	27-Apr-84 1320	Accesses: 176	SCFGEN.BIN	02-Jan-84 6600(2816)	Accesses: 65
EXP.C	27-Apr-84 1245	Accesses: 157	SCFDES.TXT	24-Nov-83 18350	Accesses: 77
FABS.C	27-Apr-84 600	Accesses: 130	DL 4 - OS9 Users Group :		
LOG.C	27-Apr-84 1435	Accesses: 138	[73115,117]		
LOGIO.C	27-Apr-84 625	Accesses: 122	HDEL.B09	11-Nov-85 3160	Accesses: 1
MAKEML.SCP	27-Apr-84 210	Accesses: 132	[71436,344]		
MATH.H	27-Apr-84 1970	Accesses: 161	DICT.C	27-Oct-85 6195	Accesses: 10
MLIB.DOC	27-Apr-84 3295	Accesses: 161	DICT.DOC	27-Oct-85 1105	Accesses: 9
POW.C	27-Apr-84 2055	Accesses: 120	DEASCI.DOC	17-Oct-85 675	Accesses: 6
SIN.C	27-Apr-84 1320	Accesses: 122	DEASCI.PAS	17-Oct-85 865	
SQRT.C	27-Apr-84 1230	Accesses: 122	DEL.DOC	17-Oct-85 760	Accesses: 9
TESTML.C	27-Apr-84 1340	Accesses: 115	DEL.PAS	17-Oct-85 1765	Accesses: 4
CNODES	16-Jan-84 1420	Accesses: 218	DELWC	17-Oct-85 8435	Accesses: 15
WC.BIN	22-Dec-83 19500(8320)	Accesses: 2	DELW.DOC	17-Oct-85 480	Accesses: 14
WC.C	22-Dec-83 2765	Accesses: 119	OS9DT.C	15-Oct-85 1955	Accesses: 22
WC.DES	22-Dec-83 515	Accesses: 16	OS9INC.H	15-Oct-85 6860	Accesses: 7
[71565,1001]			OS9KER.BWR	15-Oct-85 1470	Accesses: 8
CRYPT.C	25-Nov-83 2650	Accesses: 91	OS9KER.DCI	15-Oct-85 11230	Accesses: 6
[76703,467]			OS9KER.DC2	15-Oct-85 1980	Accesses: 5
INDEX.C	24-Nov-83 255	Accesses: 110	OS9SRV.C	15-Oct-85 2760	Accesses: 5
SIEVE.C	24-Nov-83 610	Accesses: 82	OS9UTL.C	15-Oct-85 13295	Accesses: 7
STDIOH.ADD	24-Nov-83 590	Accesses: 153	OS9CON.C	13-Oct-85 2960	Accesses: 6
STRCAT.C	24-Nov-83 250	Accesses: 78	OS9GET.C	13-Oct-85 775	Accesses: 5
TAB.C	15-Nov-83 2705	Accesses: 76	OS9KER.C	13-Oct-85 12490	Accesses: 6
DL 3 - Assembler, et al :			OS9QUL.C	13-Oct-85 1495	Accesses: 6
[75716,42]			OS9RAW.C	13-Oct-85 1085	Accesses: 6
LISTP.ASM	10-Nov-85 12675	Accesses: 5	OS9REC.C	13-Oct-85 9740	Accesses: 5
SPEAK.ASM	05-Nov-85 2690	Accesses: 6	OS9SEN.C	13-Oct-85 11650	Accesses: 5
PDUMP.ASM	03-Nov-85 6145	Accesses: 2	DDIR.ASM	06-Oct-85 3085	Accesses: 26
PDUMP.DOC	03-Nov-85 3840	Accesses: 4	DDIR.DOC	06-Oct-85 695	Accesses: 33
DXSTRP.ASM	02-Nov-85 5250	Accesses: 2	DDISPL.ASM	06-Oct-85 3150	Accesses: 6
[71406,355]			DDISPL.DOC	06-Oct-85 735	Accesses: 8
PIA.ASM	5-Oct-85 1665	Accesses: 10	DATCVT.B09	03-Oct-85 2070	Accesses: 8
PI.ASM	28-Sep-85 1920	Accesses: 15	DATCVT.DOC	03-Oct-85 780	Accesses: 6
[72447,2732]			DC970.ASM	03-Oct-85 4535	Accesses: 2
AUDIO.ASM	17-Sep-85 2310	Accesses: 18	DCOPY.B09	03-Oct-85 7935	Accesses: 17
STRIP.ASM	25-Aug-85 1510	Accesses: 8	DCOPY.DOC	03-Oct-85 725	Accesses: 17
[72437,3306]			DCWDPK.BIN	03-Oct-85 32545(13888)	Accesses: 7
FORMFE.ASM	13-Aug-85 2005	Accesses: 20	SETUID.ASM	29-Sep-85 365	Accesses: 13
UPPER.ASM	13-Aug-85 2010	Accesses: 8	SYSCLL.ASM	29-Sep-85 845	Accesses: 12
[72345,1347]			TERMID.ASM	29-Sep-85 565	Accesses: 13
SYSTAT.ASM	08-Aug-85 8270	Accesses: 30	[74116,3201]		
STATUS.ASM	02-Aug-85 8505	Accesses: 37	SLED.BIN	25-Sep-85 37125(15840)	Accesses: 23
STATUS.BIN	02-Aug-85 1955(864)	Accesses: 12	SLED.C	25-Sep-85 9825	Accesses: 23
SYSTAT.BIN	02-Aug-85 1310(576)	Accesses: 15	SLED4.C	25-Sep-85 7240	Accesses: 22
SYSTAT.DOC	02-Aug-85 10050	Accesses: 87	SLEDMA.DOC	25-Sep-85 11735	Accesses: 39
[71416,406]			SLEDUP.TXT	25-Sep-85 2215	Accesses: 33
COPDIR.ASM	29-Jul-85 3600	Accesses: 15	INTRO.DOC	07-Sep-85 4785	Accesses: 26
[72267,2662]			[71436,344]		
STRIP.ASM	23-Jul-85(23-Jul-85) 1565	Accesses: 15	DISASM.ASM	29-Aug-85 20475	Accesses: 53
[70003,545]			DISASM.DOC	29-Aug-85 635	Accesses: 68
PDEMO1.ASM	21-Jul-85 3585	Accesses: 28	D.C	28-Aug-85 5545	Accesses: 20
PDEMO2.ASM	21-Jul-85 1155	Accesses: 23	D.DOC	28-Aug-85 2580	Accesses: 23
[71416,406]			DATBAS.BIN	28-Aug-85 8145(3488)	Accesses: 7
READ.ASM	30-Jun-85 1815	Accesses: 30	DATBAS.C	28-Aug-85 8265	Accesses: 19
[75246,1372]			[74116,3201]		
P2.ASM	30-Jun-85 1970	Accesses: 19	FIND.BIN	23-Aug-85 12435(5312)	Accesses: 10
[72345,1347]			SLED3.C	23-Aug-85 4885	Accesses: 38
PARK.ASM	25-Jun-85 2250	Accesses: 18	ARCH.BIN	14-Aug-85 8785(3776)	Accesses: 8
QUIT.ASM	25-Jun-85 930	Accesses: 25	ARCH.C	14-Aug-85 3330	Accesses: 10
YAR.ASM	25-Jun-85 3505	Accesses: 13	ARCH.DOC	14-Aug-85 900	Accesses: 32
PLOT.ASM	19-Jun-85 5620	Accesses: 12	FIND.C	14-Aug-85 2945	Accesses: 13
[70426,245]			FIND.DOC	14-Aug-85 1280	Accesses: 24
ADDEDS.DOC	08-Apr-85 5510	Accesses: 66	PLIST.BIN	14-Aug-85 28960(12384)	Accesses: 5
ADDEDS.TXT	08-Apr-85 7690	Accesses: 69	PLIST.C	14-Aug-85 6275	Accesses: 11
[74736,1556]			PLIST.DOC	14-Aug-85 1155	Accesses: 19
MON.ASM	06-Feb-85 900	Accesses: 66	REPL.BIN	14-Aug-85 13345(5696)	Accesses: 6
[70126,267]			REPL.C	14-Aug-85 2945	Accesses: 12
XUPLOA	10-Jan-85 1875	Accesses: 46	REPL.DOC	14-Aug-85 900	Accesses: 22
[72456,3226]			SLED1.C	14-Aug-85 11140	Accesses: 31
HEXBIN.TXT	12-Nov-84 31905	Accesses: 21	SLED2.C	14-Aug-85 9860	Accesses: 30
HEXBIN.DOC	11-Nov-84 7900	Accesses: 14	SLED5.C	14-Aug-85 6400	Accesses: 28
[72345,1347]			SLEDC.DOC	14-Aug-85 2180	Accesses: 49
ATTACH.ASM	25-Oct-84 1290	Accesses: 95	SLEDEF.H	14-Aug-85 4480	Accesses: 34
ATTACH.DOC	25-Oct-84 3050	Accesses: 106	[71436,344]		
[74255,244]			CAT.BIN	18-Jun-85 11715(5024)	Accesses: 15
GET	23-Aug-84 1570	Accesses: 38	[70000,130]		
			MV.C	04-Jun-85 4400	Accesses: 19
			[71436,344]		
			HDIR.B09	02-Jun-85 4650	Accesses: 21
			HDIR.HLP	02-Jun-85 640	Accesses: 16
			PATCH.BIN	02-Jun-85 25710(10976)	Accesses: 8
			PATCH.C	02-Jun-85 2050	Accesses: 15

PATCH.HLP	02-Jun-85 990	Accesses: 23	[71336,1142]		
SIEVE.B09	31-May-85 545	Accesses: 7	MKDIRA.DOC	23-Mar-84 730	Accesses: 36
XLISP.BIN	16-Apr-85 58895(25152)	Accesses: 30	TEXCOM.BAS	23-Mar-84 885	Accesses: 22
XLKMAP.C	16-Apr-85 7155	Accesses: 12	WORDS.ASM	23-Mar-84 3470	Accesses: 19
XLLIST.C	16-Apr-85 12110	Accesses: 9	WORDS.A.DOC	23-Mar-84 1175	Accesses: 17
XLMath.C	16-Apr-85 8595	Accesses: 10	FLXBIN.BAS	21-Mar-84 2925	Accesses: 8
XLOBJ.C	16-Apr-85 18810	Accesses: 8	FM.BAS	21-Mar-84 400	Accesses: 15
XLPRIN.C	16-Apr-85 3975	Accesses: 6	FM.DOC	21-Mar-84 785	Accesses: 16
XLREAD.C	16-Apr-85 9330	Accesses: 8	INSERT.BAS	21-Mar-84 815	Accesses: 10
XLSTR.C	16-Apr-85 20	Accesses: 25	INSERT.DOC	21-Mar-84 785	Accesses: 12
XLSubR.C	16-Apr-85 12490	Accesses: 7	LIST.DOC	21-Mar-84 745(320)	Accesses: 27
PIL.LSP	15-Apr-85 4515	Accesses: 22	LISTN.DOC	21-Mar-84 650(288)	Accesses: 15
PT.LSP	15-Apr-85 3960	Accesses: 5	MODEM.BIN	21-Mar-84 3080(1344)	Accesses: 22
T.LSP	15-Apr-85 3525	Accesses: 7	NINSRT.BAS	21-Mar-84 1215	Accesses: 8
XLBIND.C	15-Apr-85 1395	Accesses: 5	PAD.BAS	21-Mar-84 805	Accesses: 16
XLDMEM.C	15-Apr-85 10195	Accesses: 5	PAD.DOC	21-Mar-84 790	Accesses: 24
XLEVAL.C	15-Apr-85 6735	Accesses: 4	PPC.BIN	21-Mar-84 13555(5792)	Accesses: 6
XLFIQ.C	15-Apr-85 5390	Accesses: 5	PPC.C	1-Mar-84 3835	Accesses: 36
XLIO.C	15-Apr-85 1805	Accesses: 4	PPC.DOC	21-Mar-84 760	Accesses: 39
XLISP.C	15-Apr-85 1545	Accesses: 13	PRINT.DOC	21-Mar-84 650	Accesses: 16
XLISP.DOC	15-Apr-85 29200	Accesses: 31	STRIPZ.BAS	21-Mar-84 530	Accesses: 10
XLISP.H	15-Apr-85 5985	Accesses: 14	STRIPZ.DOC	21-Mar-84 760	Accesses: 13
COGOXY.ASM	31-Mar-85 4470	Accesses: 24	TC.BIN	21-Mar-84 9860(4224)	Accesses: 20
COGOXY.DOC	31-Mar-85 5795	Accesses: 20	TC.C	21-Mar-84 1985	Accesses: 25
COL.BIN	31-Mar-85 7490(3200)	Accesses: 4	TC.DOC	21-Mar-84 635	Accesses: 27
COL.DOC	31-Mar-85 710	Accesses: 10	UNWRDS.BIN	21-Mar-84 7395(3168)	Accesses: 4
COL.PAS	31-Mar-85 1050	Accesses: 10	ACIAMI.DOC	19-Mar-84 705	Accesses: 35
COMPRS.BIN	31-Mar-85 3370	Accesses: 8	ACIAMO.DOC	19-Mar-84 745	Accesses: 18
COMPRS.DOC	31-Mar-85 650	Accesses: 17	ANSIXY.DOC	19-Mar-84 750	Accesses: 12
CRYPT.DOC	31-Mar-85 685	Accesses: 7	ATRCHG.DOC	19-Mar-84 760	Accesses: 9
CRYPTA.ASM	31-Mar-85 1925	Accesses: 4	EQUFIX.DOC	19-Mar-84 790	Accesses: 10
CRYPTA.BIN	31-Mar-85 335(160)	Accesses: 2	HCOPY.DOC	19-Mar-84 790	Accesses: 13
CRYPTA.DOC	31-Mar-85 1260	Accesses: 6	HDEL.DOC	19-Mar-84 790	Accesses: 4
CRYPTC.BIN	31-Mar-85 17905(7648)	Accesses: 2	HELP.DOC	19-Mar-84 2190	Accesses: 19
CRYPTC.C	31-Mar-85 3460	Accesses: 7	ILEAV.DOC	19-Mar-84 780	Accesses: 5
CTITC.B09	31-Mar-85 1110	Accesses: 9	INKEY.DOC	19-Mar-84 775	Accesses: 16
CTITC.DOC	31-Mar-85 650	Accesses: 10	INSTAL.DOC	19-Mar-84 1055	Accesses: 13
CLOCK.DOC	30-Mar-85 685	Accesses: 23	JBENCH.DOC	19-Mar-84 605	Accesses: 7
CHVNAM.B09	29-Mar-85 920	Accesses: 8	KILL13.DOC	19-Mar-84 615	Accesses: 5
CHVNAM.DOC	29-Mar-85 740	Accesses: 12	MODBLD.DOC	19-Mar-84 985	Accesses: 7
CLOCK.ASM	29-Mar-85 3830	Accesses: 9	MODEM.DOC	19-Mar-84 760	Accesses: 74
CAT.C	28-Mar-85 1320	Accesses: 15	MODLST.DOC	19-Mar-84 785	Accesses: 6
CAT.DOC	28-Mar-85 1115	Accesses: 21	NETWRK.DOC	19-Mar-84 5685	Accesses: 17
CB.BIN	28-Mar-85 18880(8064)	Accesses: 1	PRINTB.DOC	19-Mar-84 650	Accesses: 3
CB.C	28-Mar-85 8950	Accesses: 22	PWD.DOC	19-Mar-84 3145	Accesses: 19
CB.DOC	28-Mar-85 145	Accesses: 27	QDIR.DOC	19-Mar-84 1015	Accesses: 15
CHGPWD.B09	28-Mar-85 4225	Accesses: 11	REHOOK.DOC	19-Mar-84 910	Accesses: 6
CHGPWD.DOC	28-Mar-85 530	Accesses: 13	REMOTE.DOC	19-Mar-84 785	Accesses: 26
CHGTRM.B09	28-Mar-85 23420	Accesses: 12	RESRAT.DOC	19-Mar-84 915	Accesses: 6
CHGTRM.DOC	28-Mar-85 660	Accesses: 16	SIEVE.DOC	19-Mar-84 665	Accesses: 9
CHKBOK.B09	28-Mar-85 2475	Accesses: 24	SYSCAL.DOC	19-Mar-84 660	Accesses: 16
CHKBOK.DOC	28-Mar-85 1400	Accesses: 23	TEXCOM.DOC	19-Mar-84 660	Accesses: 12
CHKFIL.B09	28-Mar-85 1130	Accesses: 12	DICT.BIN	11-Mar-84 10780(4608)	Accesses: 10
CHKFIL.DOC	28-Mar-85 730	Accesses: 17	DICT.DOC	11-Mar-84 1105	Accesses: 39
CHKNG.C	28-Mar-85 8645	Accesses: 14	SPELL.BIN	11-Mar-84 7395(3168)	Accesses: 12
CHKNG.DOC	28-Mar-85 3050	Accesses: 18	SPELL.C	11-Mar-84 4240	Accesses: 37
[76703,467]			SPELL.DOC	11-Mar-84 1065	Accesses: 36
ADVENT.BIN	22-Mar-85 74510(31808)	Accesses: 30	UNWRDS.C	11-Mar-84 3425	Accesses: 24
[71436,344]			UNWRDS.DOC	11-Mar-84 930	Accesses: 26
AVGVAR.B09	12-Mar-85 1950	Accesses: 7	WORDS.BIN	11-Mar-84 2160(928)	Accesses: 6
BASUTL.B09	12-Mar-85 290	Accesses: 14	WORDS.C	11-Mar-84 1720	Accesses: 26
BASUTL.DOC	12-Mar-85 1115	Accesses: 9	WORDS.DOC	11-Mar-84 670	Accesses: 25
BINCOM.B09	12-Mar-85 865	Accesses: 9	DICT.C	21-Feb-84 6275	Accesses: 36
BINCOM.DOC	12-Mar-85 680	Accesses: 6	[76703,467]		
BLANKO.B09	12-Mar-85 440	Accesses: 5	SQSH.ASM	20-Feb-84 12915	Accesses: 8
BLANKO.DOC	12-Mar-85 675	Accesses: 5	SQSH.DOC	20-Feb-84 1240	Accesses: 15
BTSPLT.B09	12-Mar-85 935	Accesses: 12	STRIPN.BAS	20-Feb-84 1730	Accesses: 8
BTSPLT.DOC	12-Mar-85 890	Accesses: 11	STRIPN.DOC	20-Feb-84 625	Accesses: 9
BUILD.ASM	12-Mar-85 2975	Accesses: 23	STRIPR.BAS	20-Feb-84 2655	Accesses: 4
BUILD.DOC	12-Mar-85 1040	Accesses: 31	STRIPR.DOC	20-Feb-84 635	Accesses: 6
[76703,467]			SYSCAL.ASM	20-Feb-84 755	Accesses: 22
ADVENT.DOC	10-Mar-85 895	Accesses: 49	TAB.BIN	20-Feb-84 3390(1472)	Accesses: 1
[71436,344]			TAB.C	20-Feb-84 2200	Accesses: 9
ADJ.ASM	03-Mar-85 9075	Accesses: 11	TAB.DOC	20-Feb-84 990	Accesses: 15
ADJ.BIN	03-Mar-85 1955(864)	Accesses: 5	MODULE.BIN	19-Feb-84 19100(8160)	Accesses: 1
ADJ.DOC	03-Mar-85 1295	Accesses: 18	MODULE.C	19-Feb-84 1625	Accesses: 25
ADVNT1.DAT	03-Mar-85 17790	Accesses: 36	MODULE.DOC	19-Feb-84 945	Accesses: 26
ADVNT2.DAT	03-Mar-85 6165	Accesses: 29	MUSIC.BAS	19-Feb-84 8195	Accesses: 14
ADVNT3.DAT	03-Mar-85 5475	Accesses: 29	MUSIC.DOC	19-Feb-84 2030	Accesses: 22
ADVNT4.DAT	03-Mar-85 3140	Accesses: 30	MV.BIN	19-Feb-84 6160(2656)	Accesses: 24
ADVNT5.DAT	03-Mar-85 5295	Accesses: 28	NETWRK.BAS	19-Feb-84 5550	Accesses: 12
ADVNT6.DAT	03-Mar-85 17620	Accesses: 26	PRINT.BAS	19-Feb-84 6215	Accesses: 12
ALIAS.BIN	03-Mar-85 11070(4736)	Accesses: 3	PRINT.BIN	19-Feb-84 1235(544)	Accesses: 2
ALIAS.C	03-Mar-85 2400	Accesses: 15	PWD.ASM	19-Feb-84 21875	Accesses: 26
ALIAS.DOC	03-Mar-85 775	Accesses: 21	QDIR.BAS	19-Feb-84 665	Accesses: 23
ACIAMI.DOC	17-Feb-85 705	Accesses: 11	REHOOK.BAS	19-Feb-84 1650	Accesses: 14
ACIAMO.DOC	17-Feb-85 745	Accesses: 4	REMOTE.ASM	19-Feb-84 1515	Accesses: 41
ACICML.ASM	17-Feb-85 5700	Accesses: 3	ESRAT.BAS	19-Feb-84 680	Accesses: 3
ADDUSR.BIN	17-Feb-85 28305(12096)	Accesses: 2	SIEVE.BAS	19-Feb-84 545	Accesses: 11
ANSIXY.ASM	17-Feb-85 4960	Accesses: 7	SPLIT.BIN	19-Feb-84 20330(8704)	Accesses: 6
ANSIXY.DOC	17-Feb-85 755	Accesses: 7	PLIT.C	19-Feb-84 1365	Accesses: 19
APPEND.ASM	17-Feb-85 13550	Accesses: 8	SPLIT.DOC	19-Feb-84 645	Accesses: 25
APPEND.DOC	17-Feb-85 1195	Accesses: 11	MVC	18-Feb-84 3180	Accesses: 25
ARC.BIN	17-Feb-85 16275(6944)	Accesses: 4	MV.DOC	18-Feb-84 1080	Accesses: 31
ARC.C	17-Feb-85 18630	Accesses: 13	TUBE.BIN	18-Feb-84 9240(3968)	Accesses: 7
ARC.DOC	17-Feb-85 365	Accesses: 15	TUBE.C	18-Feb-84 6105	Accesses: 35
ASCIFY.BIN	17-Feb-85 6190(2656)	Accesses: 1	TUBE.DOC	18-Feb-84 2245	Accesses: 39
ASCIFY.PAS	17-Feb-85 1545	Accesses: 5	SORT.BIN	14-Feb-84 2465(1056)	Accesses: 8
ATTRCG.B09	17-Feb-85 2785	Accesses: 9	SORT.C	14-Feb-84 1580	Accesses: 36
ACIAMO.ASM	03-Feb-85 15120	Accesses: 11	SORT.DOC	14-Feb-84 740	Accesses: 50
[72746,3451]			HELP.ASM	12-Feb-84 3345	Accesses: 26
BIN2BC.ASM	23-Oct-84 6735	Accesses: 21	HELP.BIN	12-Feb-84 925(416)	Accesses: 12
TESTBL.ASM	23-Oct-84 2235	Accesses: 9	HX.ASM	12-Feb-84 14945	Accesses: 11
			HX.DOC	12-Feb-84 2100	Accesses: 15
			ILEAV.BAS	12-Feb-84 1345	Accesses: 10

INKEY.ASM	12-Feb-84 675	Accesses: 22	[70366,1376]		
INSTAL.ASM	12-Feb-84 2460	Accesses: 17	BOUNCE.S	12-Sep-84 18070	Accesses: 66
INTRDR.BIN	12-Feb-84 24950(10656)	Accesses: 1	SCREEN.S	12-Sep-84 7780	Accesses: 49
INTRDR.C	12-Feb-84 2115	Accesses: 14			
NTRDR.DOC	12-Feb-84 1060	Accesses: 25	[70035,546]		
JBENCH.BAS	12-Feb-84 1600	Accesses: 5	CHAR.S	03-Sep-84 6475	Accesses: 22
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LATEST.BIN	12-Feb-84 15095(6464)	Accesses: 6	[76703,467]		
LATEST.C	12-Feb-84 4115	Accesses: 20	RS2OS9.BAS	04-Jun-84 3705	Accesses: 543
LATEST.DOC	12-Feb-84 805	Accesses: 26			
LIST.BIN	12-Feb-84 925(416)	Accesses: 43	[73125,770]		
LISTN.BAS	12-Feb-84 410	Accesses: 11	PNP.OS9	24-Jan-84 3280	Accesses: 86
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MODLST.BAS	12-Feb-84 940	Accesses: 14	UART.SRC	08-Jan-84 990	Accesses: 189
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ATRCHG.BAS	11-Feb-84 2000	Accesses: 12	OS9GEN.TXT	21-Dec-83 915	Accesses: 290
EQUFIX.BAS	11-Feb-84 1210	Accesses: 7	DL 7 - Telecommunications :		
EXTRCT.BIN	11-Feb-84 8625(3680)	Accesses: 3	[71446,1030]		
EXTRCT.C	11-Feb-84 4595	Accesses: 17	RAULOG.B09	01-Nov-85 5040	Accesses: 5
EXTRCT.DOC	11-Feb-84 535	Accesses: 18			
FLXBIN.DOC	11-Feb-84 885	Accesses: 6	[74026,3235]		
FNANCE.BAS	11-Feb-84 1310	Accesses: 17	KERMIT.TXT	26-Oct-85 8980	Accesses: 13
GRAFT.BIN	11-Feb-84 6780(2912)	Accesses: 8			
GRAFT.C	11-Feb-84 3190	Accesses: 15	[70126,267]		
GRAFT.DOC	11-Feb-84 1065	Accesses: 20	AUTOLO.B09	17-Oct-85 2795	Accesses: 15
HCOPY.BAS	11-Feb-84 2280	Accesses: 19	HITERM.B09	17-Oct-85 2555	Accesses: 13
			MENU.B09	17-Oct-85 4740	Accesses: 13
			[74076,1215]		
			OTERM.TXT	04-Oct-85 1280	Accesses: 42
			[71436,344]		
			S65511.DOC	18-Sep-85 7190	Accesses: 39
			[72345,1347]		
			S65511.ASM	16-Sep-85 8575	Accesses: 19
			[72065,1471]		
			OFFDTR.BEX	01-Sep-85 1155	Accesses: 3
			OFFDTR.C	01-Sep-85 1280	Accesses: 12
			[70035,546]		
			CTERM.BEX	13-Aug-85 19660	Accesses: 41
			CTERM.DOC	13-Aug-85 2370	Accesses: 74
			CTERM.C	30-Jul-85 11090	Accesses: 48
			[70126,267]		
			STRIP1.B09	30-Jul-85 345	Accesses: 10
			UI00.BAS	30-Jul-85 375	Accesses: 15
			XUPL.SRE	30-Jul-85 400	Accesses: 16
			[71416,406]		
			GETCHA.ASM	30-Jun-85 1045	Accesses: 24
			PUTCHA.ASM	30-Jun-85 1015	Accesses: 23
			[72420,1757]		
			VTERM.ASM	29-Jun-85 20195	Accesses: 128
			VTERM.BIN	29-Jun-85 4880(2112)	Accesses: 37
			VTERM.DOC	29-Jun-85 1140	Accesses: 176
			VTERM.HLP	29-Jun-85 3305	Accesses: 80
			[71416,406]		
			TERMIN.DOC	28-Jun-85 5950	Accesses: 71
			TERMIN.HEX	28-Jun-85 5705	Accesses: 25
			USER.ASM	28-Jun-85 1025	Accesses: 12
			[76703,467]		
			XCOM9.BEX	09-Jun-85 12675	Accesses: 81
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			XCOM9.DOC	06-Jun-85 4580	Accesses: 316
			XCOM91.TXT	05-Jun-85 385	Accesses: 95
			XCOM92.TXT	05-Jun-85 1025	Accesses: 75
			XCOM93.BIN	05-Jun-85 13665(5856)	Accesses: 78
			XCOM94.BIN	05-Jun-85 13665(5856)	Accesses: 6
			XCOM95.TXT	05-Jun-85 900	Accesses: 91
			XCOM96.TXT	05-Jun-85 1280	Accesses: 84
			XCOM97.TXT	05-Jun-85 34050	Accesses: 89
			XCOM98.TXT	05-Jun-85 17280	Accesses: 62
			XCOM99.TXT	05-Jun-85 2820	Accesses: 49
			XCOM9A.TXT	05-Jun-85 3460	Accesses: 49
			XCOM9B.TXT	05-Jun-85 130	Accesses: 52
			XCOM9C.TXT	05-Jun-85 4225	Accesses: 47
			XCOM9D.TXT	05-Jun-85 12800	Accesses: 52
			XCOM9E.TXT	05-Jun-85 20225	Accesses: 43
			XCOM9F.TXT	05-Jun-85 27395	Accesses: 53
			[75376,3273]		
			SETPAR	24-May-85 5930	Accesses: 45
			LTERM	21-May-85 10880	Accesses: 79
			[71416,406]		
			PATCH.B09	12-May-85 150	Accesses: 47
			XMODEM.B09	15-Mar-85 14280	Accesses: 196
			[75126,333]		
			TT.ASM	04-Mar-85 16645	Accesses: 80
			[76011,333]		
			KERMIT.DOC	21-Feb-85 1845	Accesses: 132
			KERMQU.C	21-Feb-85 500	Accesses: 48
			UXKERM.MAN	21-Feb-85 10865	Accesses: 40
			KERMCO.C	30-Jan-85 2385	Accesses: 71
			KERMGE.C	30-Jan-85 375	Accesses: 54
			KERMIT.C	30-Jan-85 47030	Accesses: 57
			KERMSE.C	30-Jan-85 1355	Accesses: 41
			SGTTY.H	30-Jan-85 7665	Accesses: 46
			[70126,267]		
			HITERM.DOC	28-Jan-85 10265	Accesses: 104
			UPLFIL.WPK	28-Jan-85 3040	Accesses: 53
			[71416,406]		
			DETERM.BAS	11-Jan-85 9365	Accesses: 57

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[70126,267] T2.XON	09-Dec-84 5775	Accesses: 106
[70040,104] M2.ASM	21-Nov-84 5865	Accesses: 159
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[70075,456] XTERM.TXT	28-Oct-84 3070	Accesses: 102
[76703,467] INTEL.TXT	28-Oct-84 715	Accesses: 39
[70000,764] XMODEM.DOC	24-Oct-84 26920	Accesses: 113
[72766,155] CMODEM.TXT	17-Sep-84 6020	Accesses: 127
[71655,234] S6551.ASM	11-Mar-84 3325	Accesses: 56
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[76703,467] XMODEM.BIN	04-Dec-83 24600(10496)	Accesses: 80
[71565,1001] PROT.CPM	25-Nov-83 7655	Accesses: 80
[76703,467] KONMOD.C	25-Nov-83 2765	Accesses: 170
MODEM.DES	25-Nov-83 235	Accesses: 339
XMODEM.DES	25-Nov-83 1265	Accesses: 295
INTELG.C	24-Nov-83 2285	Accesses: 145
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BBSFIX.TXT	16-Jun-85 1695	Accesses: 98
BBS.DOC	15-Jun-85 27010	Accesses: 199
BBS1.B09	14-Jun-85 2180	Accesses: 84
BBS10.B09	14-Jun-85 900	Accesses: 71
BBS11.B09	14-Jun-85 2435	Accesses: 66
BBS12.B09	14-Jun-85 2690	Accesses: 63
BBS13.B09	14-Jun-85 900	Accesses: 66
BBS14.B09	14-Jun-85 2820	Accesses: 63
BBS15.B09	14-Jun-85 1410	Accesses: 63
BBS16.B09	14-Jun-85 2820	Accesses: 61
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BBS19.B09	14-Jun-85 515	Accesses: 65
BBS2.B09	14-Jun-85 5635	Accesses: 64
BBS20.B09	14-Jun-85 5380	Accesses: 61
BBS21.B09	14-Jun-85 640	Accesses: 63
BBS22.B09	14-Jun-85 4225	Accesses: 62
BBS23.B09	14-Jun-85 2180	Accesses: 62
BBS24.B09	14-Jun-85 1920	Accesses: 62
BBS25.B09	14-Jun-85 385	Accesses: 63
BBS26.B09	14-Jun-85 1920	Accesses: 62
BBS27.B09	14-Jun-85 4480	Accesses: 58
BBS28.B09	14-Jun-85 1280	Accesses: 58
BBS3.B09	14-Jun-85 515	Accesses: 57
BBS4.B09	14-Jun-85 3330	Accesses: 62
BBS5.B09	14-Jun-85 1410	Accesses: 60
BBS6.B09	14-Jun-85 770	Accesses: 60
BBS7.B09	14-Jun-85 770	Accesses: 61
BBS8.B09	14-Jun-85 385	Accesses: 58
BBS9.B09	14-Jun-85 900	Accesses: 61



Lloyd I/O is a computer engineering corporation providing software and hardware products and consulting services.

19535 NE GLISAN • PORTLAND, OR 97230 (USA)
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New Product!

CRASMB™ CROSS ASSEMBLER NOW AVAILABLE FOR OS9/68000

LLOYD I/O announces the release of the CRASMB 8 Bit Macro Cross Assembler for Microware's OS9 disk operating system for the 68000 family of microprocessors. In recent increasing demand for the OS9/68000 version of CRASMB, LLOYD I/O has translated its four year old CRASMB for the OS9/6809 and FLEX/6809 to the OS9/68000 environment.

CRASMB supports assembly language software development for these microprocessors: 1802, 6502, 6800, 6801, 6303, 6804, 6805, 6809, 6811, TMS 7000, 8048/family, 8051/family, 8080/85, Z8, and the Z80. CRASMB is a full featured assembler with macro and conditional assembly facilities. It generates object code using 4 different formats: none, FLEX, Motorola S1-S9, and Intel Hex. Another format is available which outputs the source code after macro expansion, etc. CRASMB allows label (symbols) length to 30 characters and has label cross referencing options.

CRASMB for OS9/68000 is available for \$432 in US funds only. It may be purchased with VISA/MASTERCHARGE cards, checks, US money orders, or US government (federal, state, etc.) purchase orders. NOTE: please add \$5 shipping in the USA and use your street address for UPS shipments. Add \$30 for all overseas orders. CRASMB for OS9/6809 and FLEX/6809 cost \$399 plus shipping.

You may contact Frank Hoffman at LLOYD I/O, 19535 NE Glisan, Portland, Oregon, 97230. Phone: (503) 666-1097. Telex: 910 380 5448, answer back: LLOYD I O. Easylink: 62846110. See list of distributors below.

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Japan: Microboards (0474) 22-1741 Seikou (03) 832-6000
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WHO IS THIS GUY?

by Bruce Warner

Every time we go to a new place people ask who is this guy (or women). It's no different in the publishing industry and certainly no different in the OS-9 community. So I'll tell you a little about myself.

I come from Baltimore, Maryland (a long, long time ago — well, maybe not that long). I graduated high school in the 60s and joined the Navy. I've been in the Navy for 18 years now, and am looking forward to my upcoming transfer to the Fleet Reserve (you really don't retire at 20 years), more because of the times I've had to leave my family behind and travel all over the world. I've been married for 12-1/2 years and we have no children (my wife says I'm the only kid our house can hold).

My first computer was a present from my wife for Christmas 1980. Since then I've owned about 8 of them. Some just long enough to upgrade and resell.

In 1983, I went back to school and obtained a degree in computer programming. That's a far stretch from my Navy field in Journalism. Anyway, that led me to the Northern Virginia Color Computer Club. At a meeting during the summer of 1983, I volunteered to take on the office of president until the elections were held in September. I've been the president ever since (I know how Dale Puckett feels). Over the last few years I've written reviews for Rainbow and Hot Coco, and I've written one article for Rainbow for beginners of OS-9.

Just three weeks ago, Dale Puckett informed me of Tim's resignation and asked if I'd like to be the editor of

MOTD. After some discussion, I said yes and called Brian Lantz to firm up the details.

My computer systems are rather complex. My primary system consists of:
Radio Shack Color Computer 2
J&R Electronics 256K Banker
two TEAC, DSDD, 1/2 height floppies
drives

five meg hard disk (RGS Micro that is now out of business)

five meg hard disk from LR Tech (that's right, TWO hard drives!!!)

USI Pi2 green monitor

OKIDATA 92 printer

Disto Super Controller with Display80 card

Display 80 includes:

Real Time Clock

Parallel port

80 column card

Hayes 300 SmartModem

Radio Shack Multi-Pak interface

During the day, I'm stuck with the IBM (I've Been Misled) variety of personal computers. Let's just say it's a relief to come home to my Color Computers and OS-9.

That's about all there is to tell. I hope this helps you to know a little more about me and my background. The one thing I want to stress is that I too am an OS-9 user, and I too am a Color Computer owner. If you ever feel I'm falling down on any OS-9 computer, write to me at:

OS-9 Users Group

Attn: MOTD Editor

9743 University Ave.

Suite 330

Des Moines, Iowa 50322

Minutes of the Annual Meeting

OS-9 Users Group

November 2, 1985

The Meeting was called to order at 7:15 p.m.

President Dale L. Puckett introduced persons at the head table, including:

Dave Kaleita, Software Exchange Committee Chairman

George Dorner, Treasurer

Brian A. Lantz, President Elect

William Turner, Vice President Elect

Peter Dibble, Vice President

President appointed Esther Puckett to take the minutes of the meeting in the absence of Dave Gibson, Acting Secretary and Secretary Elect.

President accepted the Treasurer's Report from George Dorner who told the group:

1. Envelopes were available for anyone wanting a detailed financial report by mail.

2. Interest drawing bank account was opened in August, 1983. Approximate balance January 1, 1984 was \$1891. Approximate balance January 1, 1985 was \$8000.

3. Group has a lawyer and he is now establishing our not for profit status with the IRS.

4. Group Income comes from membership dues, disk orders and contributions.

5. Major Group expenses include distribution of MOTD, the newsletter, telephone expenses and Compuserve expenses.

6. On October 12, 1985, the Group's balance was 3496.88 following a net income of \$23000 and \$19000 expenses.

7. Could use services of a member who is a CPA to help prepare information for IRS.

President then accepted a report from Dave Kaleita, Chairman of the Software Exchange Committee. Kaleita told the group:

1. Group was now charging \$3.00 each for 5-inch disks.

2. All contributed software must be in Public Domain.

3. Members may receive entire library on six double-sided, double-density, 80-track floppy disks.

4. He and Carl Kreider were sending new software to Compuserve for distribution on OS-9 SIG.

5. Compuserve section is now open to all Compuserve users.

6. Library now contains 45 distribution disks — up from zero two years ago.

7. Eight inch disks are now available for \$8.00.

Vice President Peter Dibble who has been busy working on PhD at University of Rochester asked not to report.

President accepted report from Joe Dubuc, Chairman of the Membership Committee. Dubuc reported:

1. Group grew to fast and its original data base software could not keep up. He rebuilt the data base with new software.

2. Group had 1,060 members before the Annual Meeting.

3. If you have problems with the database, report them to him on Compuserve if possible. Also, please include your phone number. If you write, please print.

4. Group has 180 members overseas.

5. Noted that you must renew your membership to continue receiving MOTD and asked members to be sure to select the number of the disk from the software library they want to receive with their renewal.

President presented a plaque donated by DaleSoft to Dubuc naming him as a VIP of the OS-9 Users Group in 1985.

Dubuc planned to leave Des Moines before the Microwave Brunch Sunday morning. At that brunch Puckett presented an additional VIP plaque to Dave Kaleita, Software Exchange Committee Chairman and an MVP plaque to George Dorner, Treasurer for the past two years. An additional VIP plaque will be presented to Tim Grovac, Editor of MOTD.

President called for a report concerning the Resolutions Committee from Chairman William Turner. He described one proposal that the committee planned to take to Microwave and told how the group could effectively interface with all vendors in the future.

President introduced people in the audience who would be selling tickets for the group's raffle and invited everyone to visit the Hospitality Suite in Room J2418 after the meeting. He then:

1. Presented an overview of the group's activities during the past two years. He highlighted the group's Incorporation, the number of members overseas, response to the newsletter, MOTD, and the success of the Software Exchange Library.

2. Read the Articles of Incorporation which had been filed Friday, November 1, 1985 with the Secretary of the State of Iowa.

3. Made the group's lawyer, John Gajdel, an honorary member of the group.

President called on Bob Rosen, Chairman of a Special Committee appointed to study offers from two companies interested in publishing MOTD, for a report and recommendation. Rosen reported:

1. Group had received offers from Lonnie Falk, President of Falsoft, Inc., publisher of THE RAINBOW magazine and Don Williams of CPI, Inc., publisher of 68 Micro Journal.

2. Recommended and Moved that the group accept the offer from Falsoft.

Rosen's motion was seconded by Frank Hogg. Brian Lantz and Dale Puckett gave details of the Falsoft proposal. Comments were made by Brian Capooch, the group's first President, Dave Kaleita and others in the audience. Kaleita wanted Falsoft to print "The Official Magazine of the OS-9 Users Group" on the front cover of THE RAINBOW. Lonnie Falk addressed the concerns and said that "perhaps he would put the credit Kaleita requested in the publication's masthead. Don Williams addressed the group and emphasized the benefits of the CPI offer. Williams stated that he would be happy to go along with the desires of the group and would cooperate in any way he could, noting that he had made his offer because he thought the group could not afford to publish MOTD on a regular basis. George Dorner read both proposals to the group and addressed the motion. William Turner addressed the motion stating that the increase in the size of MOTD under the Falsoft proposal would better meet the group's objectives.

President accepted a motion to vote on Rosen's motion. It was seconded and passed.

President asked for a voice vote on the motion to accept the Falsoft Proposal. Motion passed unanimously. There were no dissenting votes.

Dale L. Puckett vacated the chair and passed the gavel to President Brian A. Lantz.

President appointed Puckett as first director at large.

Board approved Lantz's appointment of George Dorner as Chairman of the Finance Committee; Joe Dubuc as Chairman of the membership committee and Bob Rosen as Chairman of the Public Relations Committee.

President called for a report from Software Committee Chairman Dave Kaleita who made motion that the price of disks be raised to \$5.00 for a five inch disk, \$8.00 for an eight inch disk and a maximum of \$10 times the number of disks for the library archive set. Discussion followed with President noting that the board could take this action but they presented it before the group as a courtesy. Motion passed, unanimously.

President called on report from Vice President William Turner. Turner proposed:

1. OS-9 Users Group should put on its own seminars and suggested that local groups form in metropolitan areas.

2. Group establish a committee to referee algorithms submitted by members. Proposed the committee start with subroutines useful to all and then expand to referee submissions to the program library.

President called for a motion to approve reports. Motion made, seconded and passed.

President urged members to communicate with him and other board members and let their desires be known. He reminded the group of the raffle, reminded the group of their growth during the past two years and urged them to continue to work together as a community. He said that he hopes to make the OS-9 Users Group a Unified Voice for the people that use OS-9.

President accepted a motion that the meeting adjourn at 9:40 p.m. Motion was seconded. Motion passed.

Meeting Adjourned.

Respectfully Submitted,
Esther Puckett, Acting Secretary

Treasurer's Report

George Dorner

The bank balance at St. Paul Federal was \$4580.35 on our November 12 statement, and the checkbook balance showed \$2599.23. This did not include some receipts from memberships and orders taken at the Princeton RainbowFest and the Microwave Seminar in Des Moines. Since Steve Odneal officially became the OS-9 UG Treasurer as of the Des Moines meeting and our bank statements are issued on the twelfth of the month, this report will only cover our operations as reflected on this end through November. Steve has opened an account in Kansas City, and I will have transferred all funds to it by the time you read this. He hopes to be able to handle the banking better than we could here, mainly in the matter of foreign checks and receiving payments by bank cards.

On November 6, 1983 Terry Strachley transferred \$2149.92 from our bank in Montecito, CA to the account here. Almost no expenses had been incurred from the first income from memberships at that time. Since then the Software Library has grown amazingly under the direction of Dave Kaleita and the MOTD has matured in the hands of Tim Grovac. These two ventures provide most of our cash flow. The rest is for supplies, postage, and communications. Elsewhere, there should appear a column I wrote for the last MOTD. In it I muse about the funding of this group and point out where some changes may need to occur. Brian and the new crew have already implemented a number of changes which should help us stay sound fiscally, but even with no paid help and the \$25 membership fee, it will be thin. I figure that the carryover from last year plus the receipts from this year just about have us even at the moment.

A major improvement should be realized in our communications with new

members and with those who are inquiring about the group. Arrangements have been made with a commercial mail forwarding company in Des Moines to mend the weakest link in our operation during the last two years. Now all mail will be forwarded on a regular basis and we will not have to prevail (or wait!) on any volunteers in Des Moines for this duty. I again want to thank those of you who were mistreated by that weak link and by some of the other communications caused by shuttling your mail around the country to get you enrolled as a member and to get your diskettes ordered. I thought about actually naming those whom I feel got the worst treatment because of our (mostly my!) foul-ups, but I decided that would be a downer to end on here.

Instead, I want to give lots of thanks to those of you who were tolerant of our faults during the past two years and especially those of you who sent your phone numbers so I could call and make up. Also, many thanks to those of you who said nice things about the fledgling efforts of the Group. And special thanks to Jim Schmidt, Tim Grovac, Dave Kaleita, J. Frank Fields, the members of the Chicago OS-9 UG, to Dale, Peter, Dave, and, most of all, to Joe Dubuc down there in Yukon, OK, which I hope to visit sometime.

I think things will go lots better this year. The new officers already have more hands involved in the work to be done to make this organization viable and to bring OS-9 to the recognition which we all think it deserves. I hope to keep my hand in there helping, but with the time I will gain from passing the torch on this job, I may even get back to writing programs and peering into my 68K machine.

HOW TO JOIN THE OS-9 NATIONAL USERS GROUP

The National OS-9 Users Group has been formed to foster communication between the users of OS-9. Our plans and expectations include the establishment of several means for members to communicate their interests, concerns, questions, and software to others. Presently the specific activities of the Group include the Group's Newsletter, MOTD (message of the day), a bulletin board system on Compuserve, a users software library with 36 volumes, and an annual User Group meeting usually held in Des Moines, Iowa.

When you join the Users Group, you will receive a free disk of OS-9 software and a copy of the latest MOTD. You will also be eligible to buy for cost only any of the 38 software library disks. This software is setup on disks for either the standard SS-50 or Radio Shack format. Be SURE to advise them on the enclosed application form which version you want.

The OS-9 Users Group is independent of Microware Systems Corp. and may not be reached through their offices or phones.

To join the OS-9 Users Group, send check or money order for \$25.00 to the OS-9 User Group address along with the Membership Application below.

NAME _____
ADDRESS _____
CITY, STATE ZIP _____
COUNTRY (IF NOT USA) _____
PHONE NUMBER _____
COMPUSERVE NUMBER _____
TYPE & LEVEL OF OS-9:
_____ STANDARD SS-50
_____ COLOR COMPUTER
_____ LEVEL ONE
_____ LEVEL TWO
HARDWARE MFG _____
FLOPPY DISK SIZE: _____ 5" _____ 8"
IS IT OK TO DISTRIBUTE YOUR NAME WITH A LIST OF THE USER GROUP MEMBERS?
_____ YES _____ NO
WOULD YOU LIKE TO WORK ON ANY COMMITTEE OR GROUP?
_____ YES _____ NO
IS THIS A RENEWAL?
_____ YES _____ NO
CARD # _____
EXP. DATE _____
SIGNATURE _____



OS-9 Users Group Software Library Volumes - 08/07/85

No.	Done?	Title:	Format:	Who?
0.03	Y	New Member Intro	+++ (40 track, ss)	CK
1.00	Y	Spelling Checker	(35 track, ss)	CK
2.00	Y	Spelling Dictionary	(40 track, ss)	CK
3.01	Y	Word Processing Utilite	+++ (35 track, ss)	CK
4.01	Y	Programming Utilities	+++ (35 track, ss)	CK
5.00	Y	File Processing Utilite	+++ (35 track, ss)	CK
6.01	Y	Adventure Game (source)	(40 track, ss)	CK
7.01	Y	Adventure Game (object)	(40 track, ss)	CK
8.00	Y	General Interest (demo, games, finance)	(35 track, ss)	CK
9.00	Y	C Programmer's Tool Kit	(35 track, ss)	CK
10.00	Y	Math & Electronics 1	(35 track, ss)	CK
11.00	Y	Word Processing Utilite (disk #2)	(35 track, ss)	CK
12.00	Y	Programming Utilities (disk #2)	(35 track, ss)	CK
13.00	Y	File Processing Utilite (disk #2)	(35 track, ss)	CK
14.02	Y	File Maintenance	(35 track, ss)	CK
15.01	Y	Communication	(35 track, ss)	CK
16.00	Y	Hardware Customizations	(35 track, ss)	CK
17.00	Y	BasicOS Programmer's Tool Kit	(35 track, ss)	CK
18.00	Y	System Utilities	(35 track, ss)	CK
19.01	Y	Languages 1: XLisp (source)	(40 track, ss)	CK
20.00	Y	XLisp (object)	(35 track, ss)	CK
21.00	Y	File maintenance (disk #2)	+++ (35 track, ss)	CK
22.00	Y	Programming Utilities (disk #3)	(35 track, ss)	CK
23.00	Y	File Processing Utilite (disk #3)	(35 track, ss)	CK
24.00	Y	General Interest (disk #2)	(35 track, ss)	CK
25.00	Y	Word Processing Utilite (disk #3)	(35 track, ss)	CK
26.00	Y	C Language Math Library	(35 track, ss)	CK
29.00	Y	File Maintenance (disk #3)	(35 track, ss)	CK
30.00	Y	File Processing Utilite (disk #4)	(35 track, ss)	CK
31.00	Y	Hardware Customizations (disk #2)	(35 track, ss)	CK
32.00	Y	Hardware Customizations (disk #3)	(35 track, ss)	CK
33.00	Y	System Utilities (disk #2)	(35 track, ss)	CK
34.00	Y	Hardware Customizations (disk #4)	(35 track, ss)	CK
35.00	Y	System Utilities (disk #3)	(35 track, ss)	CK
36.00	Y	General Interest (disk #3)	(35 track, ss)	CK
37.00	Y	Communication (disk #2)	(40 track, ss)	CK
38.00	Y	Programming Utilities (disk #4)	(35 track, ss)	CK
39.00	Y	Communication (Morae)	(disk #3) (40 track, ss)	CK
40.00	Y	System Utilities (disk #4)	(35 track, ss)	CK
42.00	Y	Coco Graphics	(35 track, ss)	CK

NOTES: 1) Above formats describe STANDARD (non-CoCo) versions. All RS CoCo versions are 40 track, single-sided, double-density.

2) All STANDARD (non-CoCo) format disks are single-density.

+++ 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).

OS-9 SOFTWARE LIBRARY ORDER FORM

DISK #	TITLE	FORMAT (RS,STANDARD)	SIZE (8 or 5)	PRICE

TOTAL:-----

NAME:-----
ADDRESS:-----
CITY,STATE:-----
ZIP CODE:-----

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