

M.O.T.D.

The OS-9 Users Group Newsletter

July/August 1994

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OS-9 Watch:

Be sure to read the fascinating article on OS-9, set-top boxes, and DAVID (Digital Audio/Video Interactive Decoder) in the September 1994 issue of **WIRED** magazine. The issue has a picture of Penn (of Penn & Teller) on the front cover.

MOTD Information

The OS-9 Users Group, Inc. is a not-for-profit organization registered and incorporated in the state of Iowa whose members share an interest in the OS-9 operating system in all of its various forms.

MOTD is the official newsletter of the *OS-9 Users Group, Inc*

The OS-9 Users Group, Inc. has no affiliation with **Microware** or any other organization.

The opinions expressed by the authors of any articles or columns are not necessarily the opinions of the Editor, Publisher, columnist, nor do they reflect the policies of *The OS-9 Users Group, Inc.*

The **MOTD** will be printed a minimum of four times per year.

To receive **MOTD** you must be a member in good standing of *The OS-9 Users Group, Inc.* in accordance to the bylaws.

To become a member in good standing you must pay the yearly dues of \$25.00 US funds (\$30.00 US funds if you live outside the US and Canada) and obey all of the membership rules set forth in the Constitution of The Users Group and the bylaws.

Dues may be made payable to:

**The OS-9 Users Group,
6158 West 63rd Street
Suite 109
Chicago, Il. 60638
U.S.A.**

Memberships run from January 1st through December 31st. Send a SASE for a membership kit which will include a membership form and information about the Users Group as well as a pro-rated price for joining the Users Group in mid year.

Please remember that this is a self help organization, and also a non-profit organization incorporated in the state of Iowa and as such it is directly governed by the laws of that state as well as all federal laws. Accordingly, dues are non-refundable in accordance with both state and federal law.

Reprints or back issues of the **MOTD** are available to members in good standing at the cost of \$1.50 each plus \$0.50 shipping (US funds). Please send a SASE and a list of the issues you wish sent to you.

Here is a short list of current officers

<u>Position</u>	<u>Name</u>
President	Carl J. Boll
Executive Vice Pres	Colin McKay
Director	Ed Gresick
Director	Eddie Kuns
Director	Ken Scales
Vice Pres (Comm.)	Paul Jerkatis
Vice Pres. (OS-9)	Brian Goers
Secretary	Howard Luckey
Librarian	Zack Sessions
M.O.T.D. Editor	Joel Mathew Hegberg

MOTD Contributions

Articles, editorials, "letters to the Editor/Board: Directors", personal ads, graphics, or columns may submitted by using the following means:

E-mail to JoelHegberg@delphi.com. E-mail to 'Sysop' of SandV BBS [(708) 352-0948], E-mail to the OS-9 Users Group os9ug@sandv.chi.il.us or by mail to *The OS-9 Users Group* address in Chicago. All submissions should be in pure ASCII format.

The submission of material does not guarantee publication. All publication of material is subject to review by the Board of Directors and the MOTD Editor, and must not be in conflict with the stated purposes of the Users Group as defined by the constitution and bylaws of the Users Group. The Board of Directors may also establish additional guidelines for acceptance to publication. Submission deadlines are four weeks before actual printing of the **MOTD** issue. *All printed material is subject to nominal editing by the MOTD Editor for clarity.*

Criticism towards making **MOTD** a better publication is welcome. Letters may be addressed to the MOTD Editor and mailed to the Users Group address or sent directly to JoelHegberg@delphi.com. E-Mail can also be sent to the following Delphi members: MITHELEN, CBJ, LUCKYONE, BRIANGOERS, EDDIEKUNS, and COLORSYSTEMS. You may also sent E-mail to os9ug@sandv.chi.il.us.

MOTD Advertising

Commercial advertising is available in **MOTD**. Please send a SASE for current rates. All ads should be submitted as a camera ready copy. We reserve the right to limit the size and quantity of ads.

SandV BBS (708) 352-0948

The SandV BBS is a BBS being maintained by Paul Jerkatis to provide Internet access.

Editor's Log

These are exciting times for OS-9! Excitement continues to build as our favorite operating system dominates the upcoming set-top box technologies and the present CD-i entertainment systems. For us long-time users of OS-9, it's proof-positive of what we've known all along, and what Microware has claimed all along. "OS-9 kicks butt in Real-Time!" So, does this mean we'll see a rebirth of OS-9 users, or an influx of OS-9 programmer activity?

As for more OS-9 users, probably not. CD-i and set-top box technologies are embedded OS-9 applications (hidden from the average person). They couldn't care less which OS (or if any OS, for that matter) is running their new electronic gizmo.

As for more OS-9 programmers, definitely. With the advent of CD-i, we've seen many programmers start using OS-9 out of necessity. Many of you may be saying, "Well, where are they?" This is an intriguing question, to be sure. One of the main problems the OS-9 Users Group is trying to tackle is bringing all OS-9 users and programmers around the world together, so we know each other exists. I've heard rumors that even Microware has trouble getting feedback from its OS-9 industrial users. This brings an air of loneliness to OS-9 computing, leaving many wondering where they can turn for help and support. Many programmers are reinventing wheels over and over, when cooperation would help tremendously. In a recent OS-9 Users Group Town Meeting, Eddie Kuns mentioned one of his industrial OS-9 friends wanted to know if reading a PC disk was possible under OS-9. Of course, this has been possible for many years now, but the lack of communication in the OS-9 community acts as a barrier... let's break this barrier together and stay in touch through this newsletter, and the OS-9 Users Group. Write us and let us know how we can better serve you! That's what we're here for.

On August 24th, the OS-9 Users Group held its first ever Town Meeting in Delphi's OS-9 Online area. This was a fantastic success! We had a large turnout of members, many of whom asked important questions to the four OS-9 UG officers in attendance (Colin McKay, Ken Scales, Eddie Kuns, and myself). A transcript of the event was kept and edited for clarity by Colin McKay, and I've placed it at several electronic locations, including Delphi and the Chestnut ftp site (chestnut.cs.wisc.edu). In addition, we now have an official e-mail address where anyone can send questions and suggestions (os9ug@sandv.chi.il.us).

We, the OS-9 Users Group, are committed to maintaining open lines of communication to you, our members. This newsletter, the Town Meeting, our new e-mail address, and our open meetings at fests are all part of this ongoing commitment. Please write us and let us know how we're doing, and if there's anything we can do better. There are many people excited about the future of OS-9... tell a friend about the OS-9 Users Group to make sure they're able to share in the excitement!

Sincerely,

Joel Mathew Hegberg
MOTD Editor

Straight From the Horse's Mouth

by Colin McKay

This month our search for OS-9 in the real world has lead us to Union, Missouri, and the Metamorphosis (formerly NoName) magazine.

Dirt Cheap Computer Stuff Co. Metamorphosis Magazine

Dirt Cheap Computer Stuff Co. (DCCS) is a small business owned by Mark Griffith and his wife, Barbara. Mark is a long-time OS-9 advocate, and has authored many OS-9 packages such as *STerm*, *SysMon*, *SLED* for OS-9 Level II, and many utilities.

In addition to selling software packages and hardware for OS-9 6809 and OS-9 68000 systems, DCCS also produces a magazine called Metamorphosis, targeted primarily at OS-9 users. When Metamorphosis started publication, one of the goals was to produce as much of the magazine as possible using OS-9.

Production

Composition is done on a 68340-based MM/1a computer running OS-9 68000 v2.4. Printing is currently done using an off-site QMS PS-2000 300 dpi laser. There are plans to obtain a 600 dpi laser in the near future.

Articles are generally received in electronic format, either on floppy disk, or via electronic mail. Locally-produced material is edited using the *emacs* editor. *WordPerfect* under MSDOS is also used to produce some material which is saved as a DOS text file and imported into the OS-9 environment.

“Being text-based, rather than requiring a powerful graphics workstation, it is possible to produce a quality magazine with a relatively inexpensive OS-9 hardware setup...”

A variety of methods are use to handle graphics in the magazine. The primary determining factor here is how pictures are received. Pictures and graphics received in GIF format are easiest to handle. They are converted directly to PostScript files using *GIFtoPS*, an OS-9 graphics conversion program. These files can then be printed and cut-and-paste techniques used to put them on the page after shrinking or enlarging with a photocopier.

Electronic diagrams are printed using *CirCad*, an OS-9 Electronic Circuit Design package for OS-9 Systems running K-Windows (a G-Windows version is planned). The result is a PostScript file that is suitable for automatic inclusion by the page description language. Other images such as clip art, are printed from other sources and included on the page using manual cut-and-paste methods.

Work is progressing on software tools to reduce or eliminate all pasteup work. Tools for converting graphic images from one form to another and to rotate, clip, and perform other manipulations are being developed. Some of the latest issues reflect these changes, although not all of these tools are currently running under OS-9.

Scanned images are currently produced using a Macintosh computer and a Sun IPC workstation.

Layout

Magazine layout is done using an OS-9 version of the *Basser Lout* document formatting language. *Basser Lout* was ported to OS-9 originally by Ed Gow, but later versions were ported by Mark Griffith. The latest version used, version 2.0.5, includes many new features like automatic hyphenation, and the ability to include encapsulated PostScript files as graphic images. These two items are very useful for magazine publishing. *Basser Lout* was developed by Dr. Jeffrey H. Kingston of the University of Sydney, Australia.

Basically, *Lout* is a high level language that allows you to setup a complete page layout. Things such as borders, column layout, page headers and footers, and so forth, are all defined using a document format file. Each column or article uses a different file. The text for that article is added to the file and any programming codes necessary to complete the article layout are inserted. Each file then is a unique program to generate that article. The same concept is used to create the front and back pages, the table of contents, and so on. See the sample listing of *Lout* code that accompanies this article.

Being text-based, rather than requiring a powerful graphics workstation, it is possible to produce a quality magazine with a relatively inexpensive OS-9 hardware setup, as long as a PostScript printer is available to view the results. On OS-9 machines that do have graphics support, *Ghostsript* can be used to view the output, without the need for a PostScript printer.

Each article is compiled using the *Lout* program into PostScript output code. These files can then be viewed for correctness using *Ghostsript*, or just sent to a PostScript printer. Any changes that are needed are made in the source files, and another test is run. This is done until the article is formatted as desired. Each file is then spell checked, reprinted, and a final run through is made for typos, punctuation errors, and anything else that needs to be corrected. Once this is done and the corrections made, the final pages are printed, advertisements and any other art work pasted up, and then they are finished.

Printing

The master pages are done on 8.5 x 11 20 lb. stock. They are taken to the printers where they are layed up on 11 x 17 pages (four pages to one 11 x 17 sheet, front and back), and the imposition done to get them in the right order when assembled. The finished pages are then assembled by hand, stapled, mailing labels attached, stamped, and put in the mail.

The capability exists to produce the entire Metamorphosis magazine using only OS-9 software and hardware. Mark feels it is important for any magazine or other group that exists to support OS-9 to use only OS-9 products wherever possible. The old saying is, take a look at what kind of car the car salesman is driving. If it is not one of the models he is trying to sell, go someplace else. Mark feels this also applies to the computer world.

Next column will cover the **Sanofi Diagnostics Pasteur Immunoassay System**. This piece of medical equipment is controlled using OS-9000, and makes use of *RAVE* for its graphical display.

Mark Griffith can be contacted at:

Dirt Cheap Computer Stuff Company
1368 Old Highway 50 East
Union, MO 63804

Lout Sample Code

This program generates the table of contents page. What it does, basically, is to create a shaded box on the left side of the page using the size of the lines to define the width of the box. Then, using the append construct (the ||2c line) the right side (a tagged list of items) is appended to the left side of the page that is already generated, separated by 2 centimeters.

```
#
# Lout program to generate the table of contents page for the magazine.
# Also includes the masthead in a box on the left.
#
@Document
  @InitialFont {Palatino Base 9p}
  @InitialBreak {1.2fx}
  @PageNumbers {Yes}
  @FirstPageNumber {3}
  @Columns {Single}
//
@Text @Begin
@CenterDisplay {{Helvetica Bold} @Font {August 1993, Vol. 1 Nbr. 3
+20p @Font {Contents}}}
@Fig { @Box margin {0.1c} paint {light}{
clines @Break {
{Chancery Bold +10p} @Font {Metamorphosis}
@LP
Published monthly by:
The Dirt Cheap Computer
Stuff Company
1368 Old Highway 50 East
Union, Missouri 63804
@LP
Copyright{@CopyRight} 1993
All Rights Reserved
{@Fig {@HLine {2.6c @Wide}}}
@LP
@B{Publisher}
@I{Mark D. Griffith}
@LP
@B{Editor}
@I{Barbara Ann Griffith}
@LP
@B{Contributing Writers}
@LP
#
#Stuff deleted here
#
@LP
{@Fig {@HLine {2.6c @Wide}}}
@LP
This publication is composed,
formatted and master pages
created, entirely on machines
running the OS-9 operating
system.
}}
||2c
```

```

{
#
# Insert the table of contents here
#
@TagList
{ } @TagItem {{Helvetica Bold -5p} @Font {Features}}
{8} @TagItem {@B{Do OS-9 Users Need an Organization?} -- The history and
possible future of the OS-9 Users Group is reviewed by Ed Gresick and
Boisy Pitre.}
{11} @TagItem {@B{Reviews -- Schematic Designers} -- Paul Fitch looks at
two electronic schematic designing programs -- one for OSK and one for RS-
DOS.}
{15} @TagItem {@B{PowerBoost vs. NitrOS9} -- The two 6309 upgrades for OS-9
square off with Alan DeKok in the ring.}
{ } @TagItem {{Helvetica Bold +5p} @Font {Columns}}
{17} @TagItem {@B{The Art Of Programming} -- Shaun Marolf's second article in
his series on programming.}
{ } @TagItem {{Helvetica Bold +5p} @Font {Departments}}
{4} @TagItem {Editorial}
{5} @TagItem {Mail Call!}
{9} @TagItem {From the Jargon File -- Hanlon's Razor}
{7} @TagItem {News Clips}
{19} @TagItem {On A Lighter Side -- The Technician's 10 Commandents}
{20} @TagItem {Trouble-Shooting -- This month, Robert Gault tells us how to
fix
a flaky CoCo3}
{21} @TagItem {Classifieds}
@DP
@DP
@DP
@DP
{ } @TagItem {@Fig { @Box margin {0.1c} {
@CenterDisplay {+2p @Font {@B{On the Front Cover}}
@LP
The schematic drawing featured on this month's cover was created using the
@B{CirCad} electronic design program reviewed later in this issue.
}}}}
@EndList
}
@End @Text

<EOF>

```

(See following page for sample output of this code.)

August 1993, Vol. 1 Nbr. 3

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The NoName Magazine

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Telephone calls can be made to (314) 583-1168. Please leave a message and your call will be returned.

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

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On the Front Cover

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

Introducing...

Interviews with OS-9 leaders...

by Joel Mathew Hegberg

A short while ago, I was thinking to myself about all the interesting people we have using OS-9. They have so many diverse backgrounds, interests, and beliefs, yet they all love OS-9. I know most of them pretty well, since I talk to many of them rather frequently. Yet, I'm sure many people would be very interested to read an interview of their favorite OS-9 personality. So, that's how this article has come into existence. If you have a particular OS-9 person in mind whom you would like to see interviewed, please send me a letter (mail or e-mail) and I'll see what I can do!

This being the first interview, I suppose I should answer questions before expecting anyone else to answer mine. Boisy G. Pitre was kind enough to play the role of the Interviewer and ask some very probing questions. My thanks to him!

Introducing... Joel Mathew Hegberg
Interviewed by: Boisy G. Pitre

Accomplishments: Commercial software (CheckBook+, Etha-GUI, Write-Right!); Columnist for 68' Micros magazine; Editor of MOTD; hard-working college student.

Q: At what age were you introduced to computers? What was your very first computer?

A: *I was introduced to computers when I was eleven years old. I was in sixth grade and my school had 16 Color Computers networked via the cassette ports to one main CoCo system with a disk drive. Soon after I wanted my own computer, so I sold my Atari 2600 game system to buy a Commodore Vic-20 computer. there were many things I liked about the CoCo and the Vic-20, so I learned to program in BASIC on both of them. After a couple years, I bought a Color Computer 2, and later a Color Computer 3.*

Q: What was your very first computer program?

A: *That's a tough one to remember. I was very interested in HOW computers worked, rather than just learning what words to type in to play a song or count to ten. My first programs were ones that may seem pointless (and probably were, like "J-BASIC"... a BASIC interpreter that was written in BASIC), but the experience in writing those types of difficult programs gave me a depth of understanding about computers I doubt I could have achieved otherwise. My harshest critic has always been myself, and it was always important to push myself a little further... I've always had to prove to myself what I think I can accomplish.*

Q: What is your programming style? Haphazard? Structured? Object oriented?

A: *When I started programming (under BASIC), the term "structured" was never mentioned in any of the books I was learning from. I would say my first programs were quite haphazard, but I started learning structured techniques on my own. Under BASIC, I would have my certain subroutines that could be called from anywhere within the program using a set of "standard" variables (standard only to myself). For instance, my keyboard routine always started at line #900, and would use the variable IN\$ to contain the entered text. ML (Max-Length) could be given a value to limit the maximum length of the entered text. By further thinking about how to modularize my programs, I developed the fundamentals of structure. Now my style is quite structured, in part from my formal college training.*

Q: How do you feel when you hear other people are getting good use out of your programs?

A: To be honest, that is what I program for. I am always truly touched when someone takes the time to let me know they enjoy what I have created. I used to write game programs on my VIC-20 and CoCo2 computers, but didn't really know many other people in computers to share my creations with. So, I was constantly showing off my new programs to my younger sister, who seemed to enjoy playing the games. That was a good boost for me, and since that time I've been very blessed to become a recognized name by so many people. This has been great for me, personally, because I'm able to distribute my software to a larger audience and converse with the people who enjoy it.

Q: What is your programming forte? Utilities? Applications? System software? Games?

A: I would say Utilities/Applications. I did dabble in game programming for a while (and still do, occasionally), but I much prefer being able to write software that does amazing things without worrying if the action is fast enough, will digitized sound slow down the game-play, and all those other time-critical game programming decisions. This is not to say I don't focus on improving the speed and efficiency of my programs! It's just the different approach that I seem to enjoy.

Q: What programming languages and development tools do you employ when writing commercial grade or public domain software?

A: A few years ago, I graduated to C programming. It is by far the best language for writing software that I have used so far (and I've used quite a few, including BASIC, COBOL, FORTRAN, RPG III, and several assembly languages). As for development tools, aside from the standard libraries (like CGFX.L), I write my own software to help me along. Even with the libraries, I generally use only the very elementary functions, since I have not always been privy to the newer versions of libraries. The result is I've written my own pull-down menu, push-button, scroll-list, etc. routines rather than relying on a library function written by someone else. To be honest, I wouldn't have it any other way. I feel that employing my own customized routines gives my software a distinctive look-and-feel that sets it apart from other software.

Q: Do you have a computer programming mentor? If so, who?

A: I know this will sound like a cop-out, but my mentor does not exist in reality. Rather he's in my mind's eye, whose qualities are taken from many different computer programmers. Unfortunately, computer programming is not like other careers where mentors are extremely visible and prolific. Thinking about some programmers I admire who have contributed to my mental-mentor are James Jones (for his depth of knowledge on such a wide range of programming topics), Mike Haaland (for his attention to user interfaces, graphics, and his wonderful personality), and my university professor Sally Betz (for her eloquence in explaining the complexities of computer programming in a way that the novice can understand, yet keeps the attention of the more advanced students).

Q: We know Joel Hegberg the computer programmer, but give us a glimpse of Joel Mathew Hegberg the person. Tell us about yourself. What are your other interests and hobbies?

A: There are times when I have to get away from computers for a while. Usually, this means getting together with some friends to play games, see a movie, or just go on a long bike ride. Camping is one of my favorite summer activities. My family has always gone on camping trips since I was very young, and I enjoy the tranquility of the outdoors immensely. Amusement parks are also towards the top of my fun list.

I also really enjoy reading... both about computer programming and a wide range of other topics. I have a passion for Astronomy and like to keep in touch with the latest findings and

theories. My favorite author, and the person I respect most in the field, is Stephen Hawking. If he were a professional Astronomer or Astrophysicist, he would be my mentor. Aside from non-fiction, I also love reading fantasy novels -- books similar to The Hobbit.

Q: What are your thoughts regarding the current shift from structured programming to object oriented programming?

A: I've actually spent a couple semesters programming on an IBM AS/400 system, which is a completely object oriented based system, including the OS. It was a unique experience, to be sure. In retrospect, I believe object oriented programming can be taken too far. I believe object oriented programming complements structured programming, but does not replace it. I view it as merely another tool with which programmers can help bring their abstract ideas into existence.

Q: Do you personally use the programs you write?

A: Yes, I do. If I don't like and use a program I've written, it doesn't get released. Generally, however, my main motivation in writing a program is due to the lack of software for a specific task that I want to do. So, if I write a program to fill the void, it becomes the only software there is to use anyway. For me, I prefer using slick user interfaces to get things done quickly and to show off my computer to my friends. Since I focus on the user interface when writing my software, I tend to enjoy using it over other software.

UG activity

On Thursday, June 9, 1994 three officers of the UG attended The Real Time Computer Show held in the Chicago area at the Arlington Park Hilton. The show was sponsored by the participating companies and produced by Concept Development, Inc.

The attendees were Carl Boll, president, Brian Goers, vice president OS-9 6809, and Howard Luckey, secretary. Brian had arranged with a representative of Concept Development, Inc. for the UG to have a free booth at the show. There were a hundred vendors signed up for the show and each booth cost \$400.00. The show ran from eight thirty in the morning until three in the afternoon and a free lunch was thrown in for all attendees and vendors. This is the kind of show where vendors show their products, software and hardware, to attendees to make contacts in the hope of making future sales.

That was our function, to make the UG visible and to make contacts for future members. We had two systems at our booth showing various kinds of software for the personal user of OS-9. Unfortunately we were unable to have an OS-9000 system running.

Toward the end of the show they announced that two hundred and sixty-seven attendees had signed up and that two hundred and forty showed up.

Howard Luckey,
OS9UG Secretary

Programmer's Input

I have been attempting to learn C for about 2 years! Every time I start I either have no time or the books are the worst. Well I have found a book that is very helpful for learning C in an OS-9 environment. The book is Practical C Programming by Steve Oualline. It's published by O'Reilly & Associates, Inc. (World class UNIX books). It is written with a slant toward UNIX, although some (UGH) DOS is explained.

Because OS-9 is pretty similar to UNIX, the whole book is much more helpful than any of the four or five DOS based books I purchased! This book is for beginners, but moves you all the way to advanced functions, structures, serial I/O, pointers, and bitwise operators. It also covers style, and how to use the MAKE utility. This book is packed with help and covers K&R C with ANSI in a comfortable fashion. This book actually explains a linker and what libraries are in a plain English conversation (good figures too!). Worth the \$29.95!

SUPPORT THE OS-9 USERS GROUP!!!

- Mike Rowen

VENDOR LISTINGS

The MOTD carries vendor names, addresses, and phone numbers as a service to both our readers and OS-9 vendors. If you are a vendor of OS-9 related hardware or software, you may request to be listed by simply sending a letter to the editor at the Users Group address. There is no charge for being listed in this area. (Vendors who are members are underlined.)

<u>Vendor Name</u>	<u>Address</u>	<u>Phone Number</u>
<u>AmiMajik Productions-Software</u>	<u>4850 Calwango Blvd; Ste #7; Toloca Lake, CA 91902</u>	<u>(818) 761-4135</u>
<u>Ark Systems USA</u>	<u>P.O. Box 28; Santa Clara, CA 95052</u>	<u>(408) 244-5358</u>
<u>Blackhawk Enterprises</u>	<u>P.O. Box 10652; Enid, OK 73708-0652</u>	<u>(405) 234-2347</u>
<u>Bob van der Pool Software</u>	<u>P.O. Box 365; Portkall, ID 83858 or</u> <u>P.O. Box 57; Wynndel, BC, Canada V0B 2N0</u>	<u>(804) 888-5772</u>
<u>Burke & Burke</u>	<u>P.O. Box 733; Maple Valley, WA 98038</u>	<u>(206) 482-1814</u>
<u>ColorSystems</u>	<u>P.O. Box 540; Castle Hayne, NC 28249</u>	<u>(819) 875-1708</u>
<u>Computer Design Services</u>	<u>2550 Sandy Plains Road; Marietta, GA 30066</u>	<u>(404) 973-2170</u>
<u>Collect</u>	<u>448 South 90th Street; Milwaukee, WI 53214</u>	<u>(414) 258-2888</u>
<u>Dalmar</u>	<u>P.O. Box 78-5238; Summit Bridge Road; Middletown, DE 18788</u>	<u>(302) 878-2555</u>
<u>Dirt Cheap Computer Stuff Co.</u>	<u>1368 Old Highway 50 East; Union, MO 63094</u>	<u>(314) 588-1168</u>
<u>Disks</u>	<u>1710 Dupatie; St. Laurent, Quebec, Canada H4L 4A8</u>	<u>(514) 747-4851</u>
<u>Farna Systems PB</u>	<u>P.O. Box 821; Warner Robins, GA 31088-0821</u>	<u>(912) 828-7858</u>
<u>Frank Hogg Laboratories</u>	<u>204 Windomere Road; Syracuse, NY 13206</u>	<u>(315) 468-7384</u>
<u>Hawksaft</u>	<u>244 S. Randall Road; Elgin, IL 60123</u>	<u>(708) 742-3084</u>
<u>JWT Enterprises</u>	<u>5755 Lockwood Blvd.; Youngstown, OH 44512</u>	<u>(216) 758-7884</u>
<u>Kee-Ten</u>	<u>187 Greenacres Road; Tonawanda, NY 14150</u>	<u>(716) 837-9188</u>
<u>Microware Systems Corporation</u>	<u>1808 N.W. 114th Street; Des Moines, IA 50322</u>	<u>(515) 224-1828</u>
<u>Northern Exposure</u>	<u>7 Greenbore Cres.; Ottawa, Ontario, Canada K1T 1W8</u>	<u>(813) 738-8328</u>
<u>'08 Online</u>	<u>221 E. 17th #31; Marysville, CA 95901</u>	<u>(916) 734-4284</u>
<u>Peripheral Technologies</u>	<u>1488 Terrall Mill Road #870; Marietta, GA 30067</u>	<u>(404) 973-2158</u>
<u>StrongWare</u>	<u>P.O. Box 381; Matthews, IN 42957</u>	
<u>Sub-Etha Software</u>	<u>P.O. Box 152442; Lubbock TX 79616 or</u> <u>938 North Twelfth Street; DeKalb, IL 68115-2518</u>	<u>(815) 748-8838</u>
<u>Window Systems</u>	<u>2407 Lime Kiln Ct.; Louisville, KY 40222</u>	



BBS Listings



<u>BBS Name</u>	<u>Location</u>	<u>Baud Rates</u>	<u>Phone Number</u>
Applied OS-9 BBS	Florida	300-2400	(407) 327-6346
Atlanta Computer Society BBS	Atlanta, GA.	300-2400	(404) 636-2991
ChiCoCo	Chicago, Il.	300-2400	(312) 735-3355
Citadel BBS	Pennsylvania	300-9600	(717) 871-9543
Color Galaxy Milky Way	California	300-14,400	(415) 883-0696
Crystal Palace	Michigan	300-14,400	(616) 979-1858
Cup of CoCo	Carpentersville, Il.	300-2400	(708) 428-0436
Erie County CoCo Club	Buffalo, NY	300-2400	(716) 649-1368
Golden CoCo BBS	Houston, TX	300-2400	(713) 941-1542
KZIN BBS	Surrey, BC, Canada	300-2400	(604) 589-5545
Ocean Beach BBS	San Diego, CA	300-14,400	(619) 224-4878
Rainbow Connection	New Jersey	300-14,400	(201) 967-1061
SandV	LaGrange Park, Il.	300-9600	(708) 352-0948
Southern Alberta Bulletin	Alberta, Canada	300-2400	(403) 329-6438

OCN (OS-9 Community Network) BBS sites:

Dave Spicer	Ft. Rucker, Al.	300-9600	(205) 598-2100
Mark Johnson	Long View, WA.	300-2400	(206) 425-5804
Newton White	Decator, GA.	300-14,400	(404) 636-2991
Chas Stokes	Coraopolis, PA.	300-9600	(412) 264-9787
Brian Steward	Chicopee, MA.	1200-16,800	(413) 593-3944
Kerry Kowalski	Whitelaw, WI.	300-2400	(414) 694-4115
Ken Patience	Toronto, ON, Canada	300-9600	(416) 469-0611
Harold Kistner	Springfield, MO.	300-14,400	(417) 887-6048
Dennis Mott	Spokane, WA.	300-2400	(509) 325-6787
Tim Jones	Austin, TX.	300-9600	(512) 280-6578
Ken Flanagan	Prince George, BC, Canada	300-9600	(604) 564-8869
Jim Sartain	Minneapolis, MN.	300-2400	(612) 869-7795
John Reece	San Diego, CA.	300-2400	(619) 272-3643
Terry Goode	Huston, TX.	300-2400	(713) 941-1542
Doug James	Midlothian, VA.	300-2400	(804) 744-9260
John Wight	Honolulu, HI.	300-9600	(808) 735-3776

OS-9 Users Group

OS-9 Periodicals

by Ed Jones

<u>MAGAZINES</u>	<u>PUBLISHER</u>	<u>COST</u>	<u>ADDRESS</u>
The International OS9 Underground	Alan Sheltra	\$18.00 USA \$23.00 Canada (12 issues) (one year)	Fat Cat Publications OS9 4650 Cahuenga Blvd. Ste#7 Toluca Lake, CA 91602 (818) 761-4135 (voice) (818) 365-0477 (Fax) (818) 769-1938 (Modem)
Metamorphosis (Previously the NoName Mmagazine)	Mark Griffith	\$24.00 USA \$32.00 Canada (12 issues) (one year)	Dirt Cheap Computer Stuff 1368 Old Highway 50 East Union, MO 63804 (314) 583-1168 (voice)
The World of 68' Micros	Farna Systems	\$23.00 USA \$30.00 Canada (8 issues) (one year)	Farna Systems PB Macros P.O Box 321 Warner Robins, GA 31099-0321 (912) 328-7859 (voice)
Up Time	JWT Enterprises	\$15.00 USA \$18.00 (12 issues) (one year)	JWT Enterprises Canada 5755 Lockwood Blvd. Youngstown, OH 44512 (216) 758-7694 (voice)
<u>DISK MAGAZINES</u>	<u>PUBLISHER</u>	<u>COST</u>	<u>ADDRESS</u>
Nine Times	JWT Enterprises	\$34.95 USA \$35.95 Canada (6 issues) (one year)	JWT Enterprises 5755 Lockwood Blvd. Youngstown, OH 44512 (216)758-7694 (voice)
MicroDisk	Farna Systems	\$40.00 USA \$44.00 Canada	Farna Systems PB Warner Robins, GA 31099-0321 (912)828-7859 (voice)
<u>NEWSLETTERS</u>	<u>PUBLISHER</u>	<u>COST</u>	<u>ADDRESS</u>
MOTD (Message of the Day) * Price includes membership fee	OS-9 Users Users Group, Inc.	\$25.00 USA and Canada. * \$30.00 others (4 issues/yr)	OS-9 Users Group, Inc. 6158 West 63rd Street Suite #109 Chicago, IL 60638
OS9 Newsletter	Bellingham OS-9 Users Group	\$10.00 USA (12 issues) (one year)	OS-9 Newsletter 3404 Illinois Lane Bellingham, WA 98226-4238