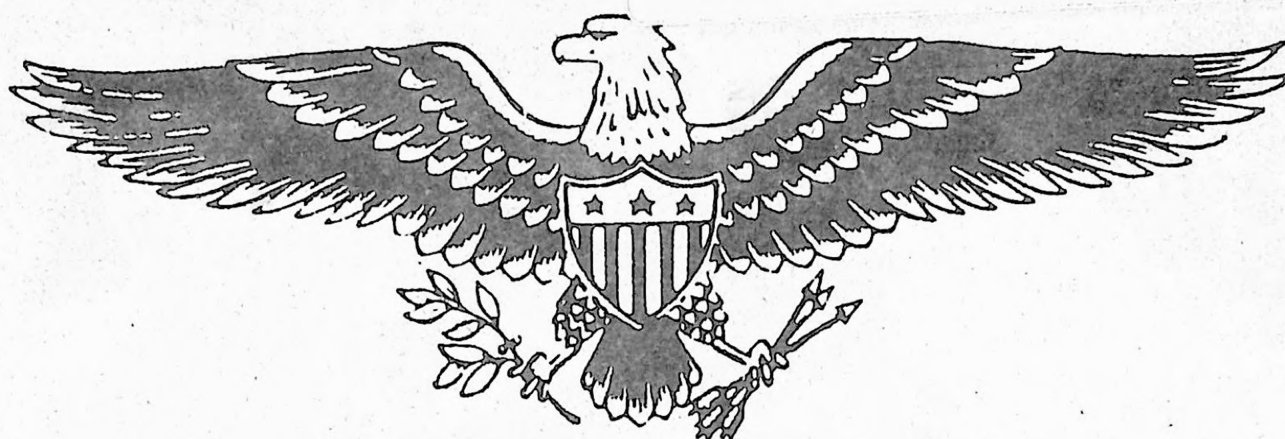




Color Micro Journal

The Color Computer Monthly Magazine

\$1.95 per issue Vol. 1, Issue 7 March, 1984

THIS 'N THAT

6883/6847 Chip Problems,
"Help Wanted",
CoCo Trade-In,
but first

This month's "new" entry in CMJ is a regular Column by Carl Mann which we are calling "Using the Color Computer". Carl's "lifelong interest" is in the applied sciences, with a background which covers things like being a Carnival Worker and a Journeyman Glassblower with several years experience in the Consumer Electronics Service business, and is now working with Nuclear Research Equipment in a Particle Physics R&D job. While he, like many CoCo Owners, is sometimes "frustrated" with the Color Computer, he is "satisfied with the product at the price", to use his words. We think you will find Carl's "free-wheeling", "straight-from-the-shoulder" approach in discussing the use of the Color Computer refreshing, interesting, informative, and thought provoking.

We have also included an article by Peter Dibble on his first look at the CoCo OS-9 System. Peter is the regular "OS-9 Users Notes" Columnist for '68' Micro Journal (CMJ's "proud parent", you might say), is an officer of the OS-9 Users Group, and has been a major force in the 6809 Community in promoting the OS-9 Operating System. We will "steal" appropriate sections of his '68' Micro Column for CMJ from time to time.

Peter also addresses the "Basic09 Installation" problem that many of you have encountered when you bought the RS Basic09 Package. Radio Shack forgot to add the "Industry Standard

USING THE COLOR COMPUTER

Carl W. Mann

"Okay, so now you own a Color Computer. Now what can you DO with it?" A friend of mine told me that he had been forced by his own honesty to ask himself that very question not long ago. He had owned the machine about ten weeks, had done his best to "follow the dancing computer" into Genius Programmerland, become incensed at the juvenile level of the manuals, and at the time of our conversation was ready to sell the machine to a perfect stranger at a substantial loss. Now, Don's no dummy, but he had simply had enough glitz, glamour, and hard-sell to last a long time. He had called the store to get an answer to a rather simple question, and had been given the message (intentionally or not) that went, "Well, if you wanted to do THAT, you should have bought a more expensive machine!". Needless to say, he was furious, and swore to me that he would never buy another product. He was flabbergasted when I fixed his problem (slow execution of a chain of statistical calculations) with a couple of POKES to the SAM addresses.

Every month in this column, I intend to present some aspect of Color Computer ownership. Software, hardware, programming in various languages and under various operating systems, and interfacing are all fair game. The idea is to "get your hands dirty" with enough ideas, experiments, and reviews of CoCo-related products of all kinds. Wherever possible, the emphasis will be on the principle behind the practice; the "why" behind the "what". As a generalist, you see,

COCO OS-9 First Impressions

by Peter Dibble

("OS-9 Users Notes" Columnist;
'68' Micro Journal)

I now have a Radio Shack Color Computer with OS-9. I had hoped that this column would be about my first experiences as a new CoCo/OS-9 Level One user, but I have only had a few hours to play with the new machine and this column is due.

Even just a few hours with the CoCo version of OS-9 is enough to form some

This Month

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LEDS

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Hixson TN 37343

Dear Mr. Nay,

First, thank you kindly for the letter you sent to me last January/February, which was very helpful and informative.

Second, may I wish you all the best with your 'Color Micro Journal', to which I have just subscribed.

Will you consider a 'letters from readers' section sometime? In issue #5, Dr. Pass states that CoCo Basic holds 7 digits only on its floating point. With reference to this, in September 1983 Dr. Dobb's Journal, 16-Bit Software Toolbox by Ray Duncan, Mr. Duncan gives some accuracy and speed comparisons for the following loop (simplified for CoCo).

```
A=1
For I=1 to 2499
A=TAN(ATN(EXP(LOG(SQR(A*A)))))+1
Next I
Print A
```

The answer should be 2500, and Mr Duncan gives a range of (appalling) results, such as

PL/1-86 with 8087	2477.244
Basic 80 Interpreter	2304.860
PL/1-86	1641.758

This has been a great "eye opener"; our office has a Victor 9000 for which we were considering spending C\$1000 to upgrade to an 8087. But, if this is the type of software available, there is no point. A colleague and myself ran some simple runs which you might find of interest.

CYBER 170	2500.000007	1.8 sec.
(Basic) - (60 bit)		
CYBER 170	2500.000009	1.14 sec.
(Fortran)		
CoCo	2500.000009	9.40 mins.
(no poke) - (Ext basic)		
Timex Sinclair 2068	2499.6758	~ 17 mins.
TRS PC2	2499.9873	23 1/2 mins.
TI 99/4A	2500.001003	~ 38 mins.
(console basic)		
TRS PCI (4bit)	2499.999627	~ 92 mins.
(I had to use a double loop on this as loops cannot go more than 99).		

So what price compiler speed? Two points;

1. When 68 Micro states that a compiler has floating point, maybe a test like this would indicate the accuracy of the algorithms to the readership.
2. Is Dr. Pass correct? If so, the above result is fortuitous. How does Basic 09 fare in such a test?

There is no need to respond to this letter, except perhaps through the columns of Color Micro, as you must be an incredibly busy person. All the very best in your new venture.

Yours sincerely
J B Garner

Editors Note:
Thanks for the info, Mr.

Garner. When I received this letter, I sent a copy to Dr. Pass, and one to Ron Anderson, who writes the '68' Micro Journal "FLEX Users Notes" Column, and who has helped in developing or debugging the Floating Point Packages in several of the Pascal and C Compilers that are now available for the FLEX Operating System. I apologize to Ron for not taking the time to "Update" him on just what this discussion was all about (which developed from some of the comments relative to the Math "Precision" problems in using CoCo and OS-9 BASIC). I also saw the remarks in DDJ referred too by Mr. Garner, and shared his surprise.

But don't be misled by the results of the CoCo test (other than the speed, which is rather interesting); as Ron points out in the following letter, some of the angles are getting rather drastic, and this accuracy MAY have "just been lucky at that specific point." As they teach in the Army, if you fire enough bullets, you are bound to hit SOMETHING!

On with the discussion; thanks for the info, Ron.

3540 Sturbridge Ct.
Ann Arbor, MI 48105

'68' Micro Journal
P O Box 849
Hixson, TN 37343

Dear Bob,

Thank you for the copy of the letter

Continued on page 4

CoCo GOES TO WORK

THE CoCo HAS GROWN UP. TODAY YOU'LL FIND IT IN OFFICES AND BUSINESSES ACROSS THE COUNTRY... IT'S NOT JUST FOR GAMES ANYMORE. WITH SEVERAL POWERFUL OPERATING SYSTEMS TO CHOOSE FROM, INCLUDING FLEX, OS-9, AND CP/M, THE APPLICATIONS ARE NUMEROUS—WITH OUR PERIPHERALS, THE POTENTIAL IS UNLIMITED.

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The following software patches are available for the WORD-PAK:

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OS-9 PATCH	\$19.95
TEXPROIII (powerful text editor/processor)	\$49.95

P-C PAK

The P-C PAK is a parallel printer interface and real time clock/calendar cartridge for use with the Radio Shack Color Computer. The board features a fully buffered Centronics compatible parallel port and a four year clock/calendar that keeps track of time from 1/10,000 of a second to months.

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PROTO CoCo	\$10.95 (3/\$20)	

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C-C BUS

The C-C BUS is an expansion bus which connects to the ROM/expansion port of the Radio Shack Color Computer. The bus provides six software selectable slots which can be populated with any combination of accessory boards/cartridges. A typical system might contain a disk controller, parallel printer interface card, WORK-PAK video board, and a real time clock board, all installed and accessible by the CPU. The C-C BUS accommodates two different types of boards: slot dependent (those which are addressed at C000-FEFF, i.e. ROM packs) and slot independent cartridges (those which are addressed at FF60-FFFF).

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LEDS

Continued from page 2

from Mr. J.B. Garner regarding the test of the arithmetic capabilities of various machines and software. This test is typical of the worst kind of mindless benchmark test. The originator of it had no idea what he was asking the computer to do. It is primarily a test of the number of digits precision of the math package. I ran it on the TSC Extended BASIC with the final result of 2500.000000002. This BASIC's 17 digit precision is sufficient for these calculations. As you may remember, the loop in BASIC is:

```
10 A=1
20 FOR I=1 TO 2499
30 A=TAN(ATN(EXP(LOG(SQR(A*A)))))+1
40 NEXT I
50 PRINT A
```

The scientific functions are in pairs that complement or cancel each other. The correct result at the end of the test is the value 2500.000000. The problem is in the use of the ATN function with no regard for the consequences or the difficulty of evaluating ATN(2500). The ATN function has a value of zero for an angle of 0, and it approaches INFINITY for an angle of pi/2 radians or 90 degrees. For this reason, as the tangent of an angle gets very large, the angle itself changes very slowly. To put some numbers to this, the arctangent of 2500 is 1.570396326816. If the test is done in 6 digit arithmetic, the best it can do is 1.57040. Since ATN(2400) is 1.57038 when truncated to 6 digits, it should be fairly apparent that this value doesn't represent the ATN to enough significant digits. TAN

(1.57040) is 2523.170, so that with a 6 digit math package and functions that are accurate to the 6th digit, this single calculation has an error of 23.171

For a 9 digit math package, things are somewhat better. The arctan can be represented to 9 digits, as 1.57039633. The tangent of that value is 2500.019898. With the TSC 17 digit package, the tangent of the arctan of 2500 results in 2499.999998563. Since this error is worse than the final accumulated error I report above for the whole test, the error obviously must "oscillate" above and below the correct value so that the accumulation is very slow.

To prove a point, I ran this test in TSC's 6 digit BASIC and the result was 2684.60. I then eliminated the TAN(ATN(portion of the test, and the result was 2499.90. The full test run in Lucidata Pascal with 9 digit precision resulted in a value of 2497.71970. As I indicated above, this is primarily a test of the resolution of the floating point math. The errors are primarily accumulated rounding errors due to the impossibility of representing the arctangent of large numbers accurately with a limited number of digits.

Yours truly,
Ron Anderson

P O BOX 122
RAROTONGA
COOK ISLANDS.

The Editor,
Color Micro Journal
5900 Cassandra Smith Road,
Hixson, TN 37343

Dear Sir,

My membership renewal for the I.C.C.C contained a copy of your Journal, which I have not seen previously.

I came across two pieces of information, one of which was extremely helpful, and another which was confusing. The helpful item was in the This 'N That column and concerned the Coco 2 disk controller; one could have all sorts of problems without knowing about that. The second one was the article by Jim LaLone, 'Disk Questions', in which he stated; 'Microsoft had to use some tricks to get double density on the 5 1/4" systems (these 'tricks' cause a few problems for the Coco OS-

Continued on page 7

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If articles are submitted on paper, they should be either Typed or Printed Single Spaced with a MAXIMUM Line Length of 4" on normal 8 1/2" x 11" bond or better paper. A good BLACK Ribbon must be used because all paper submitted articles will be photo reproduced. NO hand written articles will be accepted (except required art work which goes with an article). Again, PLEASE use a DARK Ribbon.

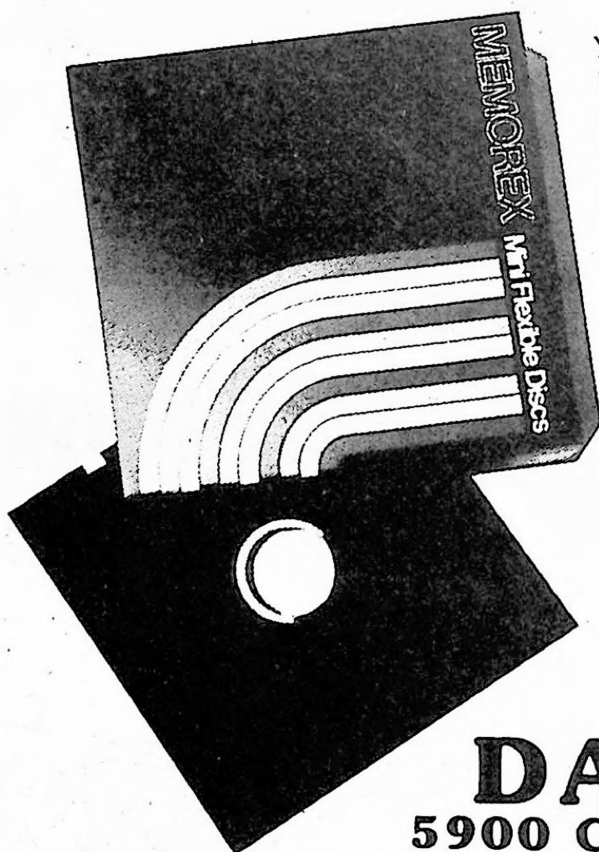
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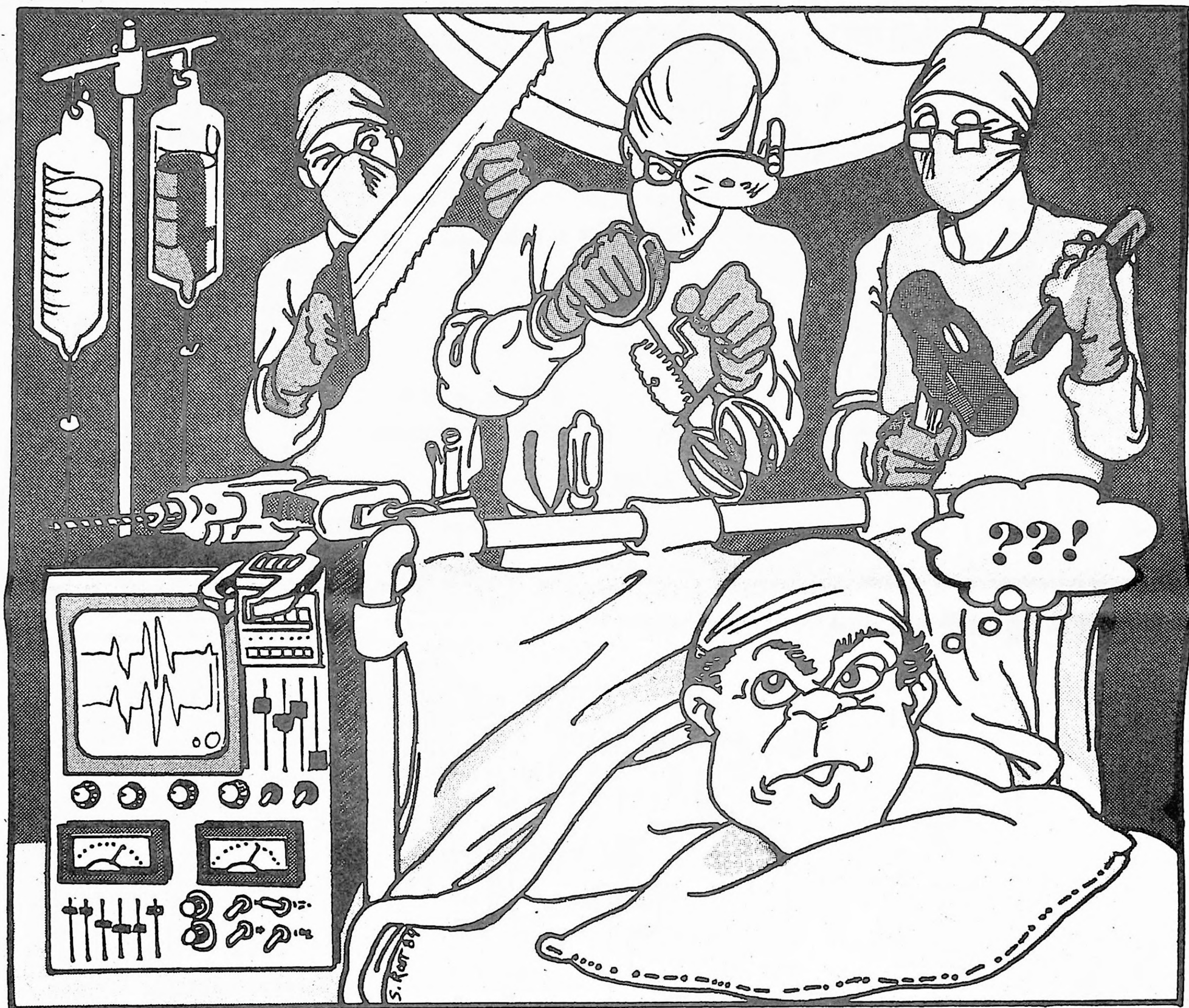
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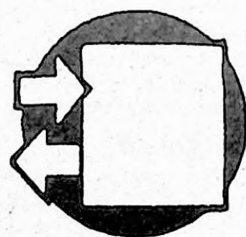


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LEDs

Continued from page 4

9, also)".

As an OS-9 owner-learner, I would have appreciated knowing what the problems are, so as to be prepared, but alas, Mr LaLone wants to keep the secrets to himself.

If you always leave the reader 'hanging in the air', I wonder about subscribing.

Waddaya say?

Sincerely,
Ray S Preston

For those that have not been around since the first issue of **Color Micro Journal**, part of my reply to Ray went like this:

Basically, the "tricks" are that the Disk Transfers at double rates are too fast for a CPU Speed of 0.9MHz, so the Disk Drivers are written so that ALL Interrupts are TURNED OFF during Disk I/O. This causes some problems for OS-9, which is TOTALLY an Interrupt DRIVEN Operating System. You lose Keyboard "type-ahead", the "Clock" misses counts (making it run slow), etc., because of this. There is not much that can be done about it except to use a "Buffered" or DMA Disk Controller (as mentioned in the "This 'N That" Column in the FEB. '84 CMJ).

Other articles that may be of interest relevant to this question are "Why CoCo Can't Read" in the Sept. '83 issue, OS-9 articles in all of the issues, etc.

Dear Bob,

I would like to give my ideas about some comments in your Feb. 84 LEDs section.

I think the newspaper format is good; it goes with the informal way you present things, plus there is a need to keep the cost down. It would be nice if you could stick with Basic09, OS9, etc.; there are three other magazines doing Color Basic and Games. Besides, at \$40.00 a ROM (see Feb/84 page 29 of CMJ), anyone can have extended Basic.

What I would like to see is **Hardware things**, like 128k memory, ACIA's, PIA's. More on how to use Basic09, OS9 and "C". MicroWare is giving us great tools, but we need your help to use them.

I was one of those that sent in \$16.50 for my subscription; a copy of my mail label is below.

To help show my feelings about your magazine, I am renewing for another year. That's more than I can say about some other's.

Frank Dupont

004778 1/85 MJ
Frank Dupont
479 West Willis, #209
Detroit, MI 48201

Sirs:

Enclosed is a check for \$12.50 for a 1 year subscription.

My main concerns are:

The odd ball size and the news print sheets! The articles I have seen are of value and I consider that they will be worthy of preserving in a usable form for sometime to come. Do you have plans to republish the material in a more accessible form? Please discuss in an Editorial Column.

Sincerely,
William F Cary
1147 S Evanston Ave
Tulsa, OK 74104

AC3

P O Box 365
Bolton Landing, NY 12814
(518) 644-9427

Dear Color Micro Journal,

Could you please announce the **Adirondack Color Computer Club** in your magazine. Also could you please add that membership is free unless a

subscription to our news letter is purchased, which would be \$4 a year. They can write for a sample issue and entrance form.

Thank you,
Bill Edwards

New Product Announcements

Tom Nee
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* FLEX is a trademark of Technical Systems Consultants

* OS/9 is a trademark of Microware

The program, **Elite-File**(tm), was created by Bruce Cook, whose **Elite-Calc**(tm) outperforms many widely known spreadsheets. **Elite-File**, like "Calc", takes full advantage of the Color Computer's powerful 6809E micro-processor.

Elite-File is an all machine language program that allows users to define their own data record structures. It also allows those structures to be reformatted without restructuring the entire data base - something not possible in many much more expensive data base managers.

Elite-File can handle:

- (1) up to 2000 characters per record
- (2) up to 4000 records per file
- (3) up to 16 files open at the same time
- (4) up to 255 characters per field name
- (5) up to 255 named fields per record

The program is menu-driven, and uses single key commands.

There may be up to eight fields in the primary key. Subfield definitions may be nested. Record definitions may be copied from file to file.

Records can be edited with a full screen "type over" editor. Record definitions can be copied from file to file. Records can be copied when identical data is to be repeated. Records may be sorted in ascending or descending order by any field. Records can be selected by field content with full logic combination capabilities.

Five math operators are available. Values can be calculated from combinations of field contents. Totals can be displayed or printed.

Print formats can be set by the user. Data may be placed by field name, with custom text, anywhere on the printed page. In addition, data can also be sent to the screen (with format capabilities) or saved as an ASCII file.

Elite-File is compatible with **Elite-Calc** and **Elite-Word**(tm). Both spread sheets and ASCII file address lists may be loaded into random access data files. Repetitive reports may be produced with retrieval programs written on **Elite-Word**, and variable text insert files may be created for **Elite-Word**.

Elite-File is available only on disk, requiring 32K and Disk Basic. The price is \$74.50, plus \$2.00 for shipping and handling.

Additional information on **Elite-File** is available from **Elite Software**, Box 11224, Pittsburgh, PA 15238.

SPELL 'N FIX II NOW FREE

NEW PRODUCT RELEASE - February 6, 1984

In releasing their brand new **SPELL 'N FIX II** proofreader program, Star-Kits Software Systems Corporation announced today that the program will be sent at no charge to anyone who sends Star-Kits a blank disk and a self-addressed stamped disk mailer. The program, as well as all

documentation, will be on the disk, and users may print their own manual from the disk.

In announcing the plan, Star-Kits' president Peter Stark also indicated that **SPELL 'N FIX II users will be encouraged to provide free copies to friends.** The program is accompanied by a request that **satisfied users make their own estimate of the program's worth to them, and then send a proportionate contribution to Star-Kits** to encourage the further development of such programs.

Stark indicated that **SPELL 'N FIX II** had already been advertised at a price of \$69.29, and was superior to many proofreading programs selling for \$200-300 for other computers. He said that the decision to provide **SPELL 'N FIX II** free was a difficult one, but that it was a **better alternative than strong copy protection.** Star-Kits had recently developed an almost break-proof copy protection algorithm, but felt that it would impose too much of a burden on legitimate purchasers. He said, "Based on our experience with the original **SPELL 'N FIX**, we're convinced that many CoCo owners will get copies of the new **SPELL 'N FIX** in a relatively

short time. We're sure they will love it, and only hope that enough of them will actually send us a contribution."

More information on **SPELL 'N FIX II** may be obtained from Star-Kits Software Systems Corporation, P O Box 209, Mt. Kisco NY 10549, or by calling (914)241-0287.

STAR-DOS LEVEL I

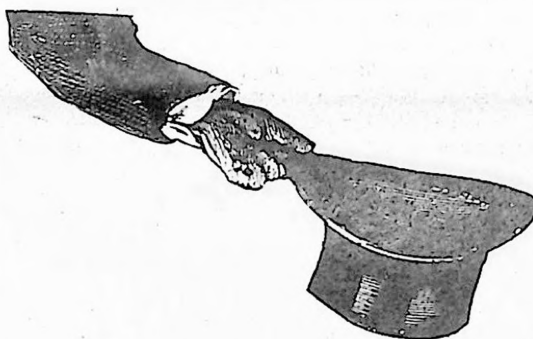
NEW PRODUCT RELEASE - February 6, 1984

Star-Kits Software Systems Corp. today announced the release of **STAR-DOS Level I**, a single-user disk operating system for 6809-based computer systems.

The Level I release is a successor to the **STAR-DOS** which has been available for over a year on the Radio Shack Color Computer. But the Level I version has been rewritten for use on the larger 6809 systems which are popular in industrial, control, and advanced hobbyist applications. This includes SS-50 systems and single-board

FREE!

SPELL 'N FIX II



Hat ↗

Nowadays, when you go to the theatre, you first pay your money and then go to the show ... and hope you enjoy it. But it wasn't always like that. Centuries ago it was the other way around. First you saw the show. Then the performers passed their hats around. If you enjoyed the show, you put money in the hat. The more you enjoyed it, the more you put in.

We're going to try the same approach with software.

INTRODUCING PASS-THE-HAT SOFTWARE

It works like this. Send us a formatted disk along with a stamped, self-addressed mailer. We will use it to send you a copy of **SPELL 'N FIX II**. We also give you permission to copy the disk as much as you want and give copies to all your friends.

After you've had a chance to use it, that's where the hat comes in. We want you to decide for yourself what the program is worth to you, and send us a contribution. (Hint: send a LOT if you really like it!)

WOW! WHAT A PROGRAM!

SPELL 'N FIX II is not just for spelling mistakes — it catches typos too. It really makes sure that your word processing output is perfect. Easy to use too. Reads your text, fixes your mistakes, lets you look up the spelling of bad words in its dictionary file, even lets you add words to the dictionary. Color Computer Magazine called the original **SPELL 'N FIX** "a top-drawer piece of software" ... and **SPELL 'N FIX II** is even better! Originally advertised for \$69.29, it beats the \$200-\$300 dictionary programs for other computers — hands down!

COMPARISON CHART

	Radio Shack Color Dictionary 26-3265	Original SPELL 'N FIX	New SPELL 'N FIX II
Checks SCRIPSIT (R) files	YES	YES	YES
Checks other text processor files	NO	YES	YES
Checks Basic data files	NO	YES	YES
Checks files larger than memory	NO	YES	YES
Full upper and lower case display	NO	NO	YES
Add words from dictionary	NO	YES	YES
Delete words from dictionary	NO	YES	YES
Custom dictionaries possible	NO	YES	YES
Comes with error-free dictionary	NO	YES	YES
Usable for foreign languages	NO	YES	YES
Checks and fixed in one pass	NO	NO	YES
Shows suspect words in context	YES	YES	YES
Usable with just one diskette	NO	YES	YES
Looks up words in dictionary	YES	NO	YES
Looks up words while correcting	NO	NO	YES
DIR command allowed during run	NO	YES	YES
Uses standard Basic file format	NO	YES	YES
Price	\$59.95	\$49.39	FREE

(Note: SCRIPSIT is a trademark of Tandy Corporation)

STAR-KITS
SOFTWARE SYSTEMS CORPORATION

PO BOX 209 J MT KISCO, NY 10549 (914) 241-0287

Color Micro Journal

computers from a variety of vendors.

The modularity of STAR-DOS allows easy interfacing to a variety of hardware, including up to ten floppy or Winchester drives. It has been specially configured to be compatible with current software; almost all 6809 programs written for linked-chain disk operating systems (such as Technical Systems Consultants' Flex) will run under STAR-DOS without modification. This includes a variety of language compilers and interpreters, editors and assemblers, word processing programs, financial programs, and debugging packages. Programs which work with STAR-DOS are available from STAR-KITS and dozens of other sources.

STAR-DOS Level I is available both for individual purchase and for licensing to equipment manufacturers. The end-user price in single quantities is \$75, which includes an extensive programmer's manual with sample programs and utilities.

More information on STAR-DOS Level I may be obtained from STAR-KITS Software Systems Corporation, P O Box 209, Mt. Kisco NY 10549, or by calling (914) 241-0287.

USING THE COLOR COMPUTER

Continued from page 1

I do a little of everything, from threaded interpretive languages to soldering, and everything in between. I'm still growing; I hope to find some readers growing with me.

I answer letters when they include a **stamped, self-addressed envelope**. No guarantees as to whether or not I'll be able to answer your particular question - but if I can't, I'll most likely find someone who can. If that doesn't work, I'll find the answer myself, and let you know when I do.

I rate products (reviews, etc.) on a 0 - 100% basis in several categories: efficacy (does it do the job?), ease of use (is it "dumb", "smart", or really "intelligent"? Is it "crash-resistant?"), quality of the unit's documentation (organized or scrambled? Sketchy, thorough, or just wordy? Accurate or otherwise?) as well as in terms of general interest and potential utility or entertainment value. Hardware gets rated on construction quality and safety (to operator and

computer); graphics, sound, and "playability" factors are applied to games. Educational software is run by a certified teacher for comment and criticism.

This past month has been a big one in my little lab for multiple machine-language programs running simultaneously. The net effect, in my case, was a 64K CoCo that would have preferred to think of itself as a mainframe. Just why, what, and how are another story, but the main problem was one of addressing each program so that it would not overlap in memory with its neighbor. Such a conflict over memory "acreage" invariably results in everybody losing. Fortunately, there are ways of figuring out how long a ML program is, where it starts, and where it is intended that the machine begin doing what the program instructs it to do. These ways involve information that the CoCo stores for its private use at the time the ML program is loaded. These methods are different for tape and disc, but a couple of BASIC programs will do the job.

For tape-based systems, the job is easy. Type in and RUN this short program:

```
10 CLS:PRINT"POSITION YOUR ML TA  
PE AND PRESS"  
20 PRINT@ 42, "<PLAYBACK>."  
30 INPUT "PRESS <ENTER> TO CONTI  
NUE. ";A$  
40 A$=INKEY$:IF A$=""THEN GOTO50  
50 CLOADM  
60 SA=PEEK(487)*256+PEEK(488)  
70 EA=PEEK(126)*256+PEEK(127)  
80 XA=PEEK(157)*256+PEEK(158)  
90 PRINT"START= ";SA,"HEX= ";HEX  
$(SA)  
100 PRINT"END= ";EA,"HEX= "HEX  
$(EA)  
110 PRINT"ENTRY= ";XA,"HEX= "HEX  
$(XA)  
120 END
```

What we've done is to catch CoCo "in the act" of "counting on its fingers". The information we seek is stored in the opening "bleep"s of the tape, in the part called the "leader" or "header". (Not to be confused with the non-magnetic "leader" of blue or yellow which precedes the actual tape.) The "header" first tells CoCo, "Machine code coming!", which CoCo "understands" by virtue of the instructions in its ROMs. The data that follows is stored in memory address pairs (126/127), (157/158), and (487/488) as binary code. The reason two addresses are used for each instruction is that it takes 16 "places", or "bits", to represent all of the 65,536 possible addresses that the 6809 microprocessor (MPU for short) has to choose from. CoCo is, by definition, an "eight-bit" machine, but it can be made to "behave" in a 16-bit fashion when necessary by viewing the contents of two adjacent memory locations as a single 16-bit quantity. In this case, for example, memory location (487) is understood to hold the "most significant" or "high order" bits of the starting address data. Location (488) holds the "least significant" or "low order" bits of the same number. Taken together, they make CoCo capable of 16-bit operation in an 8-bit environment. (Could we do 32-bit emulations the same way? I wonder...)

Disc based CoCo systems operate in a similar, but somewhat different

STAR — KIBBITS

This month I have some good news and some not-so-good news. First the not-so-good news.

This is my last Star — Kibbits column. I have really enjoyed the chance to sound off on my favorite little computer each month, but the pressures of meeting a monthly deadline are getting to me (as you've probably noticed from my missing last month's.) I've gotten some very encouraging comments from some of you readers about this column, but I am afraid that the time has come to say goodbye.

Now for the good news.

PASS-THE-HAT SOFTWARE

A few months ago I tried an experiment. Instead of selling our Commterm communications program for the CoCo and MC-10, I decided to give it away free, but ask users to send us some money if they liked the program and used it. In reviewing the program for HOT CoCo Magazine, Douglas Swank called that the "Pass-the-Hat" sales method. I hope he doesn't mind if I borrow the name and extend the idea to SPELL 'N FIX II as well.

It's too early to tell whether we're going to lose our shirts on this idea, but my hope is that enough people will send us a contribution to make it possible for us to continue. It is a gamble and only time will tell whether we are making the right decision or not, but with today's high cost of doing business it is clear that we must change our marketing methods if Star-Kits is to survive.

If you would like to get your free copy of SPELL 'N FIX II, send us a disk with a stamped mailer. (Send a cassette for Commterm). We will return the disk with the program. The operations manual is also on the disk, and you can print it out yourself. We also give you permission to make copies and pass them out to your friends.

In return, we ask that each user decide what the program is worth and send us a contribution. Hopefully, you'll think it's worth a lot, but even a small contribution is better than nothing.

WHAT DO YOU THINK?

What's your opinion of this hare-brained scheme? Do you think we're ready for the loony bin? Should we do it for our other software as well? I'd love to hear from you!

DOUBLE — SIDED DISKS

We are selling a complete disk system with a disk controller, a double-sided 40-track drive, cabinet, power supply and all cables, all for \$400. The advantage, of course, is that the double-sided drive gives you the capacity of two regular drives for just slightly more than only one.

If you currently have a double-sided drive, send us a large self-addressed stamped envelope and we will send you free details on how to use it with your CoCo.

That's it for this month — see you next time.

SPELL 'N FIX II

Regardless of whose text processor you use, let SPELL 'N FIX find and fix your spelling and typing mistakes. It reads text faster than you can, and spots and corrects errors even experienced proofreaders miss. It is compatible with all Color Computer text processors. Part of our Pass-the-Hat program. Send a disk and stamped mailer for your free copy. Older SPELL 'N FIX I is now priced at \$49.99 tape or disk. Both include a 20,000 word dictionary.

HUMBUG® — THE SUPER MONITOR

A complete monitor and debugging system which lets you input programs and data into memory, list memory contents, insert multiple breakpoints, single-step, test, checksum, and compare memory contents, find data in memory, start and stop programs, upload and download, save to tape, connect the Color Computer to a terminal, printer, or remote computer, and more. HUMBUG on disk or cassette costs just \$39.95, special 64K version for FLEX or STAR-DOS 64 costs \$59.95, MC-10 version \$29.95.

STAR-DOS

A Disk Operating System specially designed for the Color Computer, STAR-DOS is fully compatible with your present Color Computer disk format — it reads disks written by Extended Disk Basic and vice versa. STAR-DOS for 16K through 64K systems costs \$49.90.

DBLS for Data Bases

DBLS stands for Data Base Lookup System. A super-fast system for searching for a selected record in a sequential disk file. Supplied with SPELL 'N FIX's 20,000 word dictionary as a sample data file — lets you look up the spelling of any word in under FOUR seconds. Priced at \$29.95. Requires STAR-DOS.

CHECK 'N TAX

Home accounting package combines checkbook maintenance and income tax data collection. Written in Basic for either RS Disk or Flex, \$50.

REMOTERM

REMOTERM — makes your CoCo into a host computer, operated from a remote terminal. \$19.95, disk or cassette.

COMMTerm

A terminal program for your CoCo or MC-10. Part of our Pass-the-Hat software program. Send a cassette and stamped envelope for your free copy.

NEWTALK

NEWTALK — a memory examine utility for machine language programmers which reads out memory contents through the TV set speaker. \$20, disk or cassette.

SHRINK

SHRINK — our version of Eliza, in machine language and extremely fast. \$15, disk or cassette.

EDUCATIONAL SOFTWARE

Introduction to Numerical Methods — college level course on computer math, \$75.00, disk or cassette.

We accept cash, check, COD, Visa, or Master Card. NY State residents please add appropriate sales tax. Add \$3 to above price for AMDEK 3" disk versions.

(FLEX is a trademark of Technical Systems Consultants, Inc. Everything else in this ad is a trademark of Star-Kits.)

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DYNAMIC ELECTRONICS

NEW PRODUCTS

96K EXPANDERS

Operating in the upper 8K of the ROM memory area, these hardware cartridges and modules allow you to use both 32K memory banks in 64K computers. There is nothing to load and this software is obtained by EXEC 57701. Easily transfer information from one bank to the other without using any of your computer's RAM.

96KX-C ... Cartridge for cassette systems or disk drives with cartridge selectors..... \$49.95

96KX-M ... Module that mounts inside the computer becoming a permanent part of your system..... \$59.95

64K to 128K UPGRADES

If you have a 64K computer you can upgrade it to 128K.

Wired assembly includes 8-64K chips with sockets for your 64K chips, bank select control board with a 3 position toggle switch for either software or hardware bank selection. When used with our 96KX you have the equivalent of 4-32K computers. State board type when ordering. No trace cutting. Soldering not required for most boards.

ME128-64..... \$199

NOTE: Other memory expanders are available from 32K to 128K

DYNAMIC COLOR NEWS Monthly Newsletter

Engineering notes on the Color Computers written in nontechnical terms. Learn how the computer works, Basic & machine language programming, operating hints, expansion techniques, etc. \$15 a year, Sample \$1.

VIDEO REVERSER

Solderless installation. IC mounts on VDG chip and provides 1) All characters reversed, (2) Reversed all capitals, & (3) Normal display. 3 Position switch mounts in 1/4" hole..... \$19.95

MULTIPROGRAM MANAGER (MPM) new

Allows you to load and stack up to 5 programs in a 32K or 64K computer. When used with our 96KX a 64K computer can stack 5 programs in each 32k memory bank. Select the one you want to run from the menu. All programs can be saved at once and reloaded as one large program for future use. Works on both cassette and disk systems..... \$14.95

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Hartselle, AL 35640

manner. The data we seek is best extracted via string manipulation techniques, since it exists as elements of the File Allocation Table and directory entries on the disc. Extended Color BASIC possesses excellent string-manipulation facilities. The Color Computer's ability to access its disc files directly from BASIC is, likewise, excellent for our purpose. Combining these attributes enables us to pick off exactly the right bytes from the appropriate parts of the disc. (The finer points of disc I/O will be properly treated in a later column; please stay tuned.) In the meantime, type in and run this BASIC program to squeeze the start, end, and EXEC addresses out of your ML disc:

```
10 'PROGRAM TO FIND START, END,
20 'AND TRANSFER ADDRESSES OF
30 'A DISC ML FILE:
40 'WRITTEN BY JIM D'OTTAVI
50 'MARMORA, NJ 08223
60 'ENHANCED BY C.W. MANN
70 'NEWBURYPORT, MA 01950
80 CLEAR 300:DIMA(5):CLS:S=1:TB=
0:FI=1
90 INPUT"ENTER FILENAME/EXT";F$:
IF F$="" THEN PRINT"EXECUTION ST
OPPED":STOP
100 INPUT"ML DISC IN DRIVE #?";D
N$
110 DN=VAL(DN$)
120 IF DN>4 THEN GOTO 100
130 IF DN>0 AND DN<5 THEN F$=F$+
"+DN$
140 INPUT"OUTPUT TO LINE PRINTER
? (Y/N)";R$
150 IF LEFT$(R$,1)="Y" THEN UN=-
2:ELSE UN=0
160 PRINT#UN,"FILENAME IS: ";F$
170 OPEN "D ",#1,F$
180 BP=1:GOSUB 340
190 IF A(1)<>0 THEN 450
200 BC=A(2)*256+A(3):SA=A(4)*25
6+A(5)
210 IF FI THEN FA=SA:FI=0:GOTO23
0
220 IF LA+1<>SA THEN GOSUB 430:F
A=SA
230 LA=SA+BC-1
240 TB=TB+BC+5
250 SC=FIX(TB/256):BP=(TB)-(SC*2
56)+1
260 S=SC+1
270 GOSUB 340
280 IF A(1)=0 THEN 200
290 IF A(1)<>&HFF OR A(2)<>0 OR
A(3)<>0 THEN 450
300 TA=A(4)*256+A(5)
310 GOSUB 430
320 PRINT#UN,"XFER =";TA,HEX$(TA
)
330 CLOSE:END
340 GOSUB 410
350 FOR I=1 TO 5
360 IF BP>128 THEN BB=BP-128:DI
$=D2$ ELSE BB=BP
370 A(I)=ASC(MID$(D1$,BB,1)):BP=
BP+1
380 IF BP>256 THEN BP=1:S=S+1:G
OSUB 410
390 NEXT I
400 RETURN
410 FIELD#1,128 AS D1$, 128 AS D
2$:GET #1,S
420 RETURN
430 PRINT#UN,"START=";FA,HEX$(F
A):PRINT#UN,"END =" ;LA,HEX$(LA)
440 RETURN
450 PRINT"SORRY, THIS ISN'T A BI
NARY FILE!"
460 PRINT"PLEASE CHECK THINGS OU
T AND RUN THIS PROGRAM AGAIN IF
YOU NEED MORE HELP WITH YOUR FIL
ES":STOP
```

It's handy to have scribbled the data thus obtained in, say, the inside front cover of the appropriate software manual, where it's readily accessible. I like to do so immediately following the ritual backup I make of any newly purchased software. (DO always back it up first! A bombed backup can be replaced, but a bombed master... And the lost time...!)

In upcoming articles, we'd like to do things like comparing the three or four currently available disc controllers and their "native" operating systems. Maybe we can "take the top off" a few different disc drives, and compare how well (and why) they tick. Lots of software products now on the market claim to do the same thing: let's pick 'em apart, try to crash 'em, and see just what gives the "best bang for the buck". And we'd like to hear from you. We're just home folks here, and this is YOUR column. Write in or call with your suggestions, comments, ideas, gripes, etc; we'll do what's right by you.

Send Letters, Comments, etc., to

Carl W. Mann
c/o Color Micro Journal
P.O. Box 344
Hixson, TN 37343

COCO OS-9 First Impressions

Continued from page 1

first impressions. First, that really is OS-9 in there. All the standard commands and utility programs are included. Even XMODE, which didn't come with my Level Two system, was on the CoCo OS-9 disk. I am impressed with the performance of the CoCo. I am used to a two megahertz GIMIX system, and the CoCo is distinctly slower than that; but, I bet Basic09 on a CoCo would give an IBM-PC running its version of Basic a good race. I hope I have a chance to do some benchmarks soon.

For a user moving from Color Basic to OS-9 the change must be wonderful, but confusing. OS-9 brings out much of the power hidden in that little off-white box. It also demonstrates the limitations of the Color Computer. After this column I intend to concentrate on positive aspects of the CoCo, but right up front I have to say that my new CoCo is a sit-down lawnmower with the soul of a Grand Pre racer. I want to get my complaining out of the way early, so this column is elected.

On the hardware side, I guess my complaints can be summarized as: this computer seems to have been designed to sell for under a thousand dollars. It is really unfair for me to think that this computer should have DMA (Direct Memory Access) for its disk I/O and a chip to do its serial I/O. By doing those tasks in software Radio Shack hurt OS-9's performance, but they also kept the cost of the computer down.

Certainly, my main reaction to the Radio Shack version of OS-9 was pleasure, but that didn't keep me from finding a few things to complain about. In my last column I hinted that the disk driver included with CoCo OS-9 doesn't adhere to OS-9 standards. I

COMPILER EVALUATION SERVICES

The S.E. MEDIA Division of Computer Publishing Inc., is offering the following
'SUBSCRIBER SERVICE':

COMPILER COMPARISON AND EVALUATION REPORT

Due to the constant and rapid updating and enhancement of numerous compilers, and the different utility, appeal, speed, level of communication, memory usage, etc., of different compilers, the following services are now being offered with periodic updates.

This service, with updates, will allow you who are wary or confused by the various claims of compiler vendors, an opportunity to review comparisons, comments, benchmarks, etc., concerning the many different compilers on the market, for the 6809 micro-computer. Thus the savings could far offset the small cost of this service.

Many have purchased compilers and then discovered that the particular compiler purchased either is not the most efficient for their purposes or does not contain features necessary for their application. Thus the added expense of purchasing additional compiler(s) or not being able to fully utilize the advantages of high level language compilers becomes too expensive.

The following COMPILERS are reviewed initially, more will be reviewed, compared and benchmarked as they become available to the author:

PASCAL "C" GSPL WHIMISCAL PL/9

Initial Subscription - \$39.95
(includes 1 year updates)
Updates for 1 year - \$14.50

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5900 Cassandra Smith, POB 794
Hixson, TN 37343
615 842-4601

didn't make a strong statement because I didn't know from personal experience. I can tentatively confirm the information now -- the CCDisk disk driver doesn't seem to refer to the parameters set in the disk device descriptors.

The documentation that came with OS-9 was also a disappointment. I expected entirely new books explaining the trickier aspects of OS-9 so any fool could understand it. The manuals I got are just prettied-up versions of the Microware manuals with some parts missing. The documentation seems to have been very quickly done. I checked out the section on device descriptors first thing; the manual includes a full description of the device descriptor with no indication that some parameters don't work on the CoCo. Most of the information from Microware's manuals about adapting OS-9 to a new system are missing from Radio Shack's OS-9 documentation.

My complaints may sound significant, but they are not. The hardware limitations of the Color Computer are no worse than one would expect in a low-cost computer. The limited disk driver is only waiting to be replaced by a more general one. If no one else writes one, I may do it myself. The documentation problem is an invitation to people like me. If OS-9 on the CoCo continues to be as big a success as it has been, books will appear about it in fairly short order.

Notes on Compuserve

I spent over two hours reading through the messages in the new OS-9 SIG on Compuserve. That bulletin board

is really picking up! People are beginning to buy Basic09 for the CoCo and are having trouble installing it. Some messages went something like: I installed Basic09 on my system and it doesn't work -- HELP. I can't imagine how anyone is able to figure out what went wrong from that kind of complaint; I certainly couldn't. Several other people gave more detailed descriptions of their troubles. It sounded to me like they were having troubles with directories.

When you start OS-9 running it will find a directory called /D0/CMDS on your system disk. This is the directory OS-9 will always execute programs out of unless you explicitly direct it to another directory. Specifically, if you give the command

BASIC09

OS-9 will look for an executable file called BASIC09 in the /D0/CMDS directory. If it finds the program, everything is fine; otherwise, OS-9 will search the default data directory (initially /D0) for a file called BASIC09. If BASIC09 is found in the data directory it will be taken as a shell command file, and a shell will be started up to execute the commands. If that file turns out to be full of the machine code for Basic09, the shell will be understandably confused. If you copy Basic09 from its distribution disk to the root directory for your system disk (which is what the command:

copy /D1/basic09 Basic09

will do) your shell will get wrapped around the axle in about the way I just described. The way to avoid that problem is to put Basic09 in your execution directory with a command like:

~~~~~

## F&D Associates

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New Plymouth, Ohio

45654

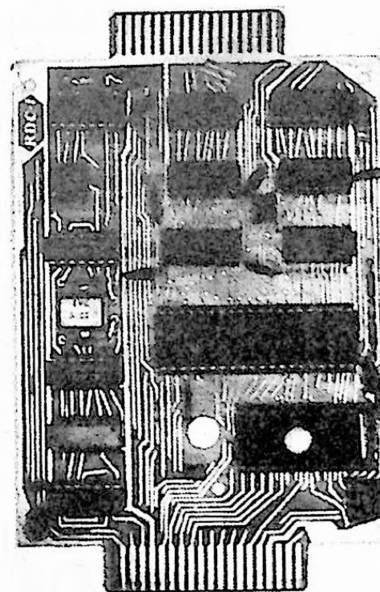
614-592-5721

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### RDC-1 Disk Controller Board

- Gold edge connectors
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- Completely Radio Shack compatible
- Works with OS-9
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- Accepts 24 or 28 pin ROM or EPROM
- All digital, no adjustments



Build it yourself or buy assembled and tested. The RDC-1 is a proven reliable, economical alternative to the Radio Shack disk controller. Assembly manual and complete schematics are included. Repair service available.

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| RDC-1GAS | Assembled/tested with case  | \$169.95 |
| RDC-1G   | bare board, doc, separator  | \$54.50  |
| CCFLXCON | FLEX conversion disk & doc  | \$39.95  |
| DEBROM   | Disk Ex Basic ROM (1.1)     | \$35.00  |
| BDCASE   | case for board              | \$7.50   |
| 1793     | FDC CHIP                    | \$32.00  |
| 1793-II  | FDC for Color Comp. II      | call     |
| FADBUG-C | 2716 EPROM monitor & manual | \$25.00  |

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~~~~~


copy /D1/basic09 /D0/CMD5/basic09

The system disk on my CoCo is very full. If I had any number of my own programs on that disk it would overflow. When that happens it is time to divide the files on that disk between two disks. One way to split things up is to put Basic09 and a few other programs that are frequently used with Basic09 on a disk by themselves, and replace the system disk with the special Basic09 disk when it is time to use Basic. There is nothing wrong with the idea, but there is a nice pitfall waiting here too. Directories are files, and, to save time, OS-9 remembers where the files you are using are on disk. When you boot OS-9 it determines where the directory /D0/CMD5 is and will look right there next time it needs to find a program. If you pull out the system disk and put in your special Basic09 disk, OS-9 will read the location on the Basic09 disk where the /D0/CMD5 directory was on the system disk. In the best case you will get a meaningful error, but you may not. The way to get around this problem is to remember to change your execution (and perhaps your data) directory when you change the disk it is on. That is:

Take the system disk out,
Put the Basic09 disk in, and
type **CHX /D0/CMD5**

which will cause OS-9 to find the /D0/CMD5 directory again. Of course, if you decide to call the execution directory on your Basic disk something other than CMD5, that's fine; just change the execution directory appropriately. For example:

OS9: **CHX /D0/BASIC.CMD5**

If you put Basic09 on a disk separate from many of your other programs you may find yourself unable

to get at some important program while you are using Basic09. There are at least three ways to solve this problem.

OS-9 lets you load programs into memory and keep them there. You don't want to load too many because main memory is a very limited resource, but sometimes it can prove very useful to have a program or two in memory. If you insert your Basic09 disk,

OS9: **/D0/CMD5/load /D0/CMD5/basic09**
(note that I specified the full directory name instead of changing the execution directory -- either way will work, but this way I won't need to change the directory back), then remove the Basic disk and put the system disk back in. Now Basic09 is in main memory. You can see Basic09 in the output of the MDIR command, and the MFREE command will show that there is much less free memory in the system than there was before you loaded Basic09. Now, if you type

OS9: **basic09**
you will find yourself in basic much faster than when it had to be loaded from disk. To get rid of the copy of Basic09 in main memory use the UNLINK command:

OS9: **UNLINK basic09**

If there is some small number of small programs you want to use from within Basic09 you can load them into memory while the system disk is mounted. For example:

OS9: **LOAD copy**

OS9: **LOAD list**

remove the system disk
insert the basic disk

OS9: **CHX /D0/CMD5**

and perhaps change the data directory

OS9: **CHD /D0/BASIC.PROGS**

then start basic09

OS9: **BASIC09**

If, for one reason or another,

neither of these tricks will serve, you can change the execution directory from within Basic09. For example, starting from a time when Basic09 is running with the basic disk on drive /D0:

replace the basic09 disk with the disk with the programs you need

B: **chx /D0/CMD5** or whatever
do what needs to be done, then, before exiting from basic, replace the basic disk in the drive.

The Basic09 CHX command only changes the execution directory within Basic09, and any programs that are run from it. When you exit from Basic09 the directories that were active before you started Basic09 will be active again.

Thank You GIMIX

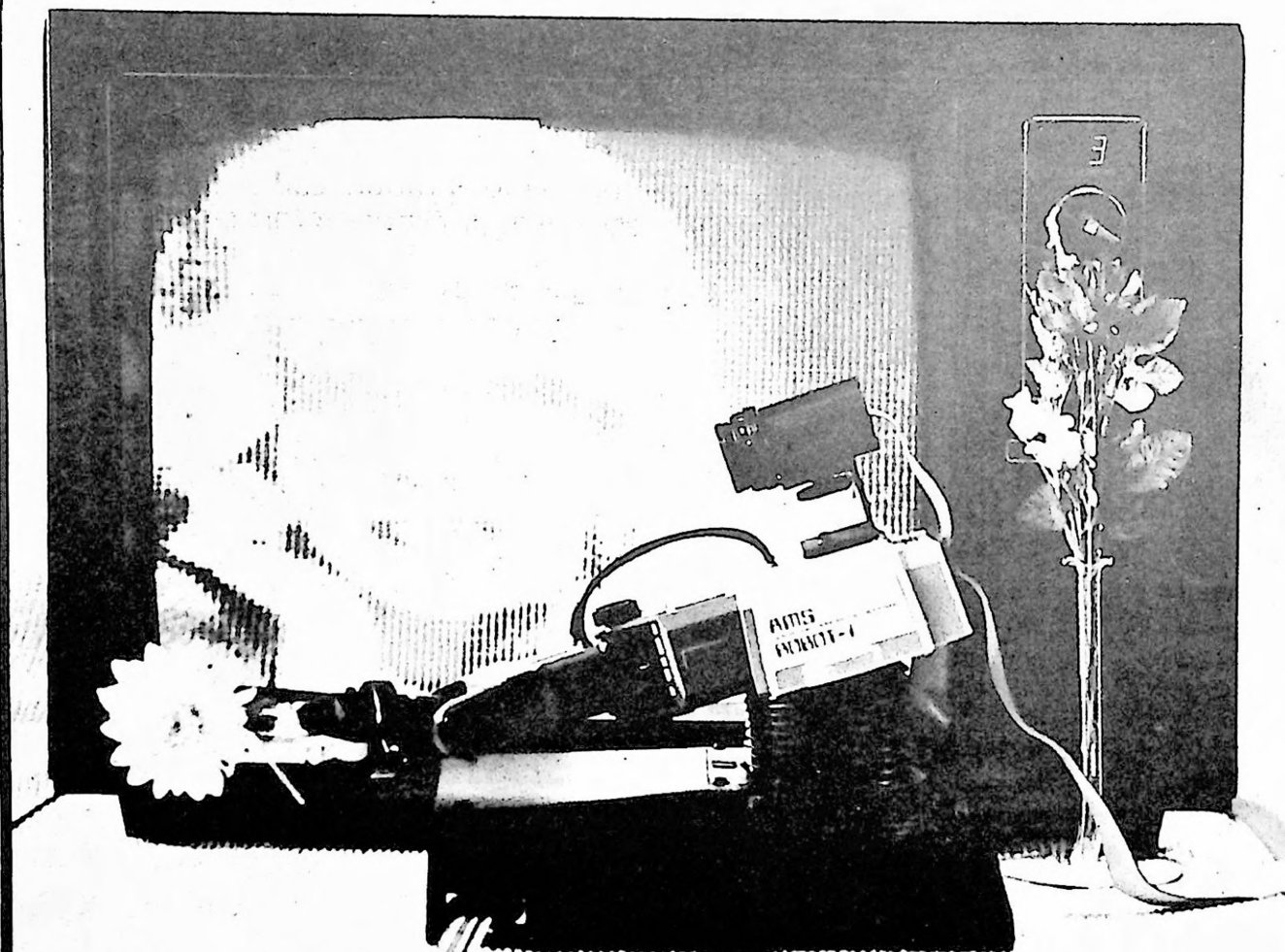
Ever since the CoCo version of OS-9 was announced with a different disk format from all other versions of OS-9, the users of large OS-9 systems have been grumbling about the incompatibility of our disk formats and the CoCo format. GIMIX has released a new floppy disk driver for their systems that supports reading and (if you have a 40 track drive) writing disks in CoCo OS-9 format. I am very grateful, and I am sure I represent many other OS-9 users when I thank GIMIX for their efforts.

A Handy Shortcut

I always use 32K when I run Dynastar, and I almost always use 24K for the Microware Assembler. I am seldom content to use the minimum memory requirement given in the module header for any program. I have

Continued on page 19

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```

72 EXITIF EOF($InPath) THEN found:=FALSE \ ENDEXIT
73 GET $InPath.Mhead
74 GET $InPath.Msize \ GET $InPath.Mofs
75 SEEK $InPath.Index+Mofs
76 Mhead:=
77 REPEAT
78   GET $InPath.Char
79   Mhead:=Mhead+CHR$(LAND(char,97))
80 UNTIL char=127
81 UNTIL Mhead=Msize
82 RETURN

```

Path	3	25	60	70	74
Head	3	19	20	81	
OutPath	4	31	54	56	
char	4	28	29	30	32 40 41 42 44 45 46
	70	79	80	82	
found	4	22	60	72	
10	9	11			
20	11	13			

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Lucidata

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Lucidata

COPYCAT

Pascal NOT required

Allows reading TSC Mini-FLEX, SSB DOS68, and Digital Research CP/M Disks while operating under FLEX 1.0, FLEX 2.0, or FLEX 9.0 with 6800 or 6809 Systems. COPYCAT will not perform Miracles, but, between the program and the manual, you stand a good chance of accomplishing a transfer. Includes Utilities to List Directories, Copy Files, and convert Text Files when required. Also includes a Utility for investigating Physical Compatibility problems. Programs supplied in Modular Source Code (Assembly Language) to make it easier to solve unusual problems.

F and CCF 5" - \$50.00
F 8" - \$65.00

Computer Systems Consultants

FLEX DISK UTILITIES

Eighteen (18) different FLEX Utilities that should be a part of every FLEX Users Toolbox. Ten BASIC Programs to:

Compare, Merge, or Generate Updates between two BASIC Programs, check BASIC Sequence Numbers, compare two unsequenced files, and 5 Programs for establishing a Master Directory of several Disks, and sorting, selecting, updating, and printing paginated listings of these files.

The other 8 Programs provide .CMD Files which allow:

Copy a File with CRC Errors, so it can possibly be salvaged; Test Disk for errors; Compare two Disks; a fast Disk Backup Program; Edit Disk Sectors; Linearize Free-Chain on the Disk; print Disk Identification; and Sort and Replace the Disk Directory (in sorted order).

ALL Utilities include Source (either BASIC or Source Code). An EXCELLENT Value!

F and CCF - \$50.00

Southeast Media

SPELLB "Computer Dictionary"

OVER 120,000 words!

No more "Let your fingers do the walking through the Dictionary" while you are entering Text with your favorite Editor or Word Processor. SPELLB is more than just "another Spelling Checker"; it allows you to look up a word from within your Editor or Word Processor so that you KNOW it is right WHEN YOU TYPE IT IN with the SPH.COM Utility (which operates in the FLEX Utility Space). Yes, it ALSO allows you to check and update the Text after you are finished; along with allowing you to ADD WORDS to the Dictionary, "Flag" questionable words in the Text for evaluation later, "View a word in context" before changing or ignoring, etc. SPELLB first checks a "Common Word Dictionary", then the normal Dictionary, then a "Personal Word List", and finally, any "Special Word List" you may have specified. SPELLB also allows the use of Small Disk Storage systems.

F and CCF - \$129.95

Great Plains Computer Co.

SPELL

Fast Computer Dictionary -- allows directly changing the Text File, adding words to the dictionary, etc. 75,000 words in less than 400 sectors.

F, CCF, OS/9 - \$125.00
U - \$175.00

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WORD PROCESSORS

Alford and Associates

SCREDDOR III

EXTREMELY Powerful Screen-Oriented Editor/Word Processor. Almost 50 different commands; EXCELLENT Documentation (over 300 pages), including a full Tutorial Section to help you learn how to use the system. Features Cursor-based editing, dynamic Screen Formatting (what you see is what you get), Multi-Column display and editing, "decimal align" columns (AND add them up automatically, if wanted), define multiple keystroke macros, even and odd page number headers and footers, imbed printer control codes in text, full justification series of commands, full "help" support, store common command series on disk for future use, etc. Easy "Set-Up" (for example, you just hit the key you want to use for a specific function, such as "cursor up", and the System reads an stores that key - no digging into tech manuals for codes, etc.); use supplied "set-ups", or remap the keyboard to what you are used too. Except for proportional printing, this package will DO IT ALL!

6800 or 6809 FLEX or SSB DOS, OS-9 - \$175.00

Great Plains Computer Co.

STYLOGRAPH

A full-screen oriented WORD PROCESSOR -- (now runs on the Data-Comp and FHL Color FLEX Systems; uses the 51 x 24 Display Screens). Full screen display and editing (i.e., what you see is what you get); supports the Daisy Wheel proportional printers.

SPECIAL CCF - \$195.00

F and O - \$295.00

U - \$395.00

Great Plains Computer Co.

MAIL MERGE

Greatly extends the power and flexibility of STYLOGRAPH. Allows Multiple Text files to be printed out as one large document. Provides for merging information into the Text File during printing (such as different names and addresses), etc.

F, CCF, O - \$145.00
U - \$195.00

DATA BASE MANAGEMENT SYSTEMS

Westchester Applied Business Systems

XIMS

Possibly one of the most powerful Database Management Systems' available, this machine language program is small enough to operate on a single sided 5" disk, yet provides the speed of M.L. and power limited only by the user's imagination. This Relational DMS supports Sequential, Hierarchical, and Random Access File Structures, and has Virtual Memory capabilities for those Giant Data Bases. Easy-to-use English Language Command Structure.

XIMS - F and CCF - \$179.95

XIMS+ (w/ utils) - F and CCF - \$249.95

Manual only - \$19.95

Westchester Applied Business Systems

XIMS Utilities

These are part of XIMS+, includes SET which provides TTYSET Type of controls within the DMS, PLOT produces horizontal graphs of data, COPYDEF defines new files with existing formats, REVISE allows modification of field definitions, OUTPUT provides an ASCII output of a DMS File, INPUT loads a File from user generated text, PURGE erases all Data from a File, FORM displays the print format, SIZE provides no. of records and sectors info, and FILES outputs a file name matrix of a given file extent.

XIMS Utils. (requires XIMS V1.1) \$79.95

Great Plains Computer Co.

INFOMAG DEMS

An XBASIC, Menu Driven, DBMS with "Built-In" Audit Tracking, Extremely Powerful Report & Format Capabilities, etc. This Time Proven DEMS will become the "Work Horse" of your Software Stable.

F and CCF \$295.00

U \$395.00

ACCOUNTING PACKAGES

Great Plains Computer Co.

Accounting Packages

Accts Rec., Accts Payable & Gen Ledger -- A FULL Accounting Package that can be used together, or as separate packages; provides the IRS required Audit Tracking. (XBASIC, based on the "Osborne Business Programs.")

F and CCF - ea. Program \$295.00

U - ea. Program \$395.00

Universal Data Research, Inc.

Accounting and Database Manag. Sys.

Note: ALL UDRI Accounting and DBM Progs. Require FLEX and XBASIC. These are Time Tested programs from an old, established, software house.

Color Computer FLEX Systems

DBM Part 1 - \$49.95 DBM Part 2 - \$49.95

Church Contributions - \$49.95

Single Entry Gen Ledger - \$49.95

Balanced Billing System - \$49.95

A/R \$99.95 A/P \$99.95 Gen Ledger \$189.00

Inventory 2 \$69.00 Payroll \$99.95

FLEX and UniFLEX -- Note: Requires XBASIC or basic

A/P F - \$295, U - \$395

A/R F - \$295, U - \$395

Gen Ledger F - \$295, U - \$395

Inventory 2 F - \$295, U - \$395

Payroll F - \$295, U - \$395

DBM F - \$350, U - \$450

Computer Systems Consultants

FULL SCREEN INVENTORY/MRP

The Full Screen Inventory System provides a means of maintaining small inventories. Using a linked, keyed random file structure based upon the item field, it keeps the file in alphabetical order for easier inquiry. With the FIND command, the user may locate and/or print all records matching on partial or complete item, description, vendor, or attributes. Items in backorder or below minimum stock levels may be located and/or printed thru the same process. Printed output may be produced in item or vendor order. A materials requirement planning (MRP) capability for manufacturing environments is included to allow the maintenance and analysis of Hierarchical assemblies of items in the inventory file. It requires TSC's Extended BASIC.

F and CCF - \$100.00, U - \$150.00

Availability Legends --

F = FLEX, CCF = Color Computer FLEX

O = OS-9, CCO = Color Computer OS-9

U = UniFLEX

CCD = Color Computer Disk

CCT = Color Computer Tape



"FLEX is a trademark of Technical Systems Consultants
"OS9 is a trademark of Microware

FREE DISKETTE With Each \$50 Purchase

SOUTH EAST MEDIA

5900 Cassandra Smith Rd., Hixson, TN 37343

(615) 842-4601

COLOR COMPUTER FLEX™ OS9™ Software

BUSINESS FORECASTING

The Virginia Company **Bizpack**

Bizpack is a DESKTOP/PLAN type of Program which is oriented towards **Time Series Analysis** of Business Situations in providing information on which to base common business decisions. This program is used for storing accounting, numeric, and financial data, which can then be used for analyzing, planning, budgeting, forecasting, etc. While "Electronic Spreadsheets" are extremely useful in many situations, **Bizpack** excels in businesses when there are numerous expense columns, revenue sources, significant business indicators, large numbers, erratic week-to-week and month-to-month fluctuations, etc. **Bizpack** helps determine statistical relationships, establish trend lines, "smooth" data via moving averages, analyze seasonal data, adjust for inflation, lag data one or more periods in Statistics or Column functions, plot data, etc. The Program displays information on the screen as Columns of Information with each Row conforming to a defined Period of Time (weeks, months, years, etc.), and is very easy to use (data is easy to enter, change, and modify; commands can be renamed to suit the users requirements; unlimited ability to create specialized commands using common BASIC Statements; etc.). Requires **TSC's Extended BASIC**.

F and CCF - \$135.00
with Source - \$250.00

*** SPECIAL ***

Purchase **XBASIC** and **Bizpack** together for \$221.50
--- a Savings of \$13.50 ---

Computer Systems Consultants

TABULA RASA SPREADSHEET

TABULA RASA is similar to DESKTOP/PLAN and provides for the generation and maintenance of tabular computation schemes often used for analysis of business, sales, and economic scenarios. Its menu-driven user interface provides these capabilities even to those users with no programming experience. Its extensive report-generation capabilities allow the user to generate professional results with minimum effort. It requires **TSC's Extended BASIC**.

F and CCF - \$100.00, U - \$200.00

Computer Systems Center

DYNACALC

THE Electronic Spread Sheet for 6809 Computer Systems. An extremely POWERFUL Business Tool, this Program will find an unlimited number of "non-business" applications, also (for example, a Full Junior College Electronics Curriculum was set up using **DYNACALC**). Advanced features like "Table Lookup" make Income Tax work easy; Column or Row Sorting for numerous applications; etc. Completely "Memory Resident", Machine Language, this Program is **FAST**. Provides **STANDARD FLEX** Text File output for use with BASIC, Word Processors, Pascal, "C", etc. Also available for Data-Comp and FHL FLEX systems using the 50 x 24 Displays.

F and SPECIAL CCF - \$200.00
U - \$395.00

ODDS AND ENDS

Computer Systems Consultants

FULL SCREEN FORMS DISPLAY

This package supports any Serial Terminal with cursor control of Memory-Mapped Video Displays. The package substantially extends the screen Input/Output capabilities of **TSC's Extended BASIC** programs by providing a simple, table-driven method of describing and using full screen displays. These table entries are easy to set up and maintain, and are normally stored on disk and read as required. A simple, interactive means of generating the forms and the data field definitions is provided.

F and CCF - \$50.00, U - \$75.00

Computer Systems Consultants

FULL SCREEN MAILING LIST

The Full Screen Mailing List System provides a means of maintaining simple mailing lists. Using a random fill structure based on the first character of the name field, it maintains the file in alphabetical order for easier inquiry. With the **FIND** command, the user may locate all records matching on partial or complete name, city, state, zip, or attributes. Printed listings and output to labels may also be produced on the same selective basis. It requires **TSC's Extended BASIC**.

F and CCF - \$100.00, U - \$110.00

COLOR COMPUTER SOFTWARE

Stearns Electronics

FORTH

Intrigued by **Forth**??? Here is a **FORTH** package tailored to the **Color Computer**! This package is supplied on Tape, with instructions for transferring it to disk if you wish. Written primarily in machine language, it's speed is unparalleled. A full Semigraphic-8 Editor is provided, along with "goodies" like Graphics and Sound Commands, Printer Commands, Auto-Repeat and Control Keys, etc. If you are interested in Learning **FORTH**, a **Trace Feature** is provided which is invaluable. If you are a **FORTH Pro**, this package provides CPU carry Flag accessibility, Fast Task Multiplexing, Clean Interrupt Handling, etc. (Or; you won't "out grow" the Basic capabilities of this Implementation). Combine this package with **Leo Brodie's EXCELLENT Book "Starting FORTH"**, and you will be a **FORTH Expert** before you know it (and have a lot of fun doing it!).

Color Computer TAPE - \$58.95

Custom Software Engineering, Inc.

Color Computer **GRAPHIC SCREEN PRINT** Programs
Dumps any "PMODE" Screen to the Printer with the BASIC **USR** Function. Shift the Printout Left or Right or Reverse Print (Dark for Light Screen and Vice Versa). All Programs on Tape.

GSPR for R.S. LP-VII/VIII & DMP 100/200/400 \$7.95
GSPRE for Epson w/ Grafrax and Grafrax + \$9.95
GSPRG for Gemini 10 and 15 \$9.95
GSPRP for the Prowriter Printers \$9.95

Custom Software Engineering, Inc.

DATE-O-BASE CALENDAR Program

A Menu Driven **EXTENDED BASIC** Program which allows the entry of up to 12 Memos per Day, each of which may contain up to 28 Characters, for any day of the Month between the years 1700 and 2099. A **Graphic Calendar** shows which days contain Memos, and a "Key Word" Search is provided which can be output to the Screen or Printer.

TAPE DATE-O-BASE CALENDAR
(Each Tape File will hold up to 400 Memos) \$16.95
DISK DATE-O-BASE CALENDAR
(4,000 Memos at 300/Month per Disk) \$19.95

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1-800-338-6800
For Ordering

Custom Software Engineering, Inc.

That's INTEREST-ing

Interested in **INTEREST** (the Money Kind)? An **EXTENDED BASIC** Program that will help you deal with numerous problems requiring interest calculations. Present Value, Rate of Return, Current Bond Yield and Rate of Return to maturity, Loan Repayment Amortization Schedules, etc.

TAPE - \$29.95

Custom Software Engineering, Inc.

DISK DATA HANDLER 64K

Custom Software Engineering, Inc.

DISK DOUBLE ENTRY

DISK EXTENDED BASIC Accounting Program w/ Mach. Lang. Routines. A "Traditional" Accounting Package for Small Business, Clubs, Churches, Personal Use, etc. Up to four levels of subtotals with Trial Balance, Income Statement, and Balance Sheet Reports. DDE allows up to 300 accounts and a Trial Balance of \$9,999,999.99. Transactions may be up to 14 lines long, and comments and explanations may be freely used. Accounts are traceable to the journal transaction, which may include comments. Screen reports allow review of past transactions and current balances.

DISK - \$44.95

Computer Systems Center

DYNASHARE

-- Multi-User, Multi-Tasking with **FLEX** --

Southeast Media is now shipping **DYNASHARE FROM STOCK** - the multi-user, multi-tasking capability of **DYNASHARE** allows **FLEX** users the advantages of more sophisticated and time saving computer usage without having to buy or learn a new Language or Operating System syntax. **DYNASHARE**, as its name implies, allows true "time-sharing" operation under the popular **FLEX** operating system, and also allows each user to run two simultaneous jobs (multi-tasking); even on single-user systems. For example, while in **EDIT**, you can

list another file or examine a directory. Or, you might look up an item in a Data Base while a Sort is in progress! **DYNASHARE** also provides some fringe benefits that will be greatly appreciated by **FLEX** users, including type-ahead, command line editing, and instant response to "escape".

DYNASHARE is the painless method! Use your existing **Flex** computer by simply adding 64K of RAM for each user and/or task. Fact is, you still use **FLEX** just like you always have! **DYNASHARE** is not intended as competition to **UniFLEX**. It does not improve on the speed of **FLEX**, and does not offer password protection or other niceties of a full-blown multi-user system. What **DYNASHARE** does do is give **FLEX** users a low-cost way to use existing software in a multi-user, multi-tasking environment, so your existing **FLEX** versions of **BASIC**, **XBASIC**, editors, assemblers, disassemblers, sort/merge packages, word processors, compilers, **DYNACALC** spread-sheet package, and so on are still good.

NOTE -- The initial release of **DYNASHARE** is for **SWTPC S/09** Computers, but versions will also be available for other popular extended-memory (up to 1024K) systems, such as **HELIX** and **GIMIX**. A minimum of 128K of RAM will be required with **ALL** versions. **DYNASHARE** requires 64k of RAM for each active task; thus a 256k system could allow foreground-background operation on two terminals, or foreground-only operation on four terminals.

AVAILABLE NOW from Southeast Media - \$200.00

AUTHORS - PROGRAMMERS

QUALITY SOFTWARE NEEDED

FLEX - **UniFLEX** - **OS/9** - **Color Computer**

For the past several months, we at the **Southeast Media Division of Computer Publishing, Inc. (CPI)**, the parent company of '68' **MICRO JOURNAL** and **COLOR MICRO JOURNAL**, have debated expanding our software distribution business. Many other magazines have been doing so for years (in fact, **MOST** were in the Software Distribution Business BEFORE they began to publish a Magazine). Presently there are many fine examples of software that has been developed by YOU, our readers, that will never see the "light of day" due to the Cost of Advertising and **TIME** and **COST** involved in the production, distribution, and Customer SUPPORT of that software unless SOMEONE, with enough exposure and the willingness to continually advertise, runs with the ball.

Software is the "backbone" for the **REAL** utilization of any Computer System, and ours are no exception! This has been no simple decision. While we realize that there could be some conflict with some of our advertisers, we ALSO hear a **LOUD** and **CONTINUOUS** cry for **HELP** from our Readers. From day one, the foremost concern of '68' **MICRO JOURNAL** has been it's **READERS!** Therefore, our **Southeast Media Division** will accept, for appraisal for possible Distribution, 6809 software; Games, Utilities, Software Development, Business Application Programs, etc.

In the past there has been too much software offered that was not quite ready. We will strive to eliminate that element. But, right up front, we tell you only that we will do our very best; nothing more. Also, we will strive to keep cost to a bare minimum, while securing for the author a fair return in royalty payments, promptly paid, and in customer support for his product.

Of course, we will expect, no -- **DEMAND**, that the author keep the product free of errors (bugs), and maintain it in a prompt and business like manner. Also we shall require that authors be willing to furnish 'source' for those programs that justify, by price and utility, inclusion of same. The lack of source code, properly commented, is a continual complaint we hear. Not all programs will be sold with source; but where necessary, we will insist that it be included.

In some instances the program may be small or short and not justify itself as a "single" sale product. In this event it will be combined with other like programs, and offered as a package. In that event, the royalties will be split between the various authors.

If you have software that you feel will qualify under this program, please contact one of the people below. Remember, if your software has any problems or "funnies" -- **GET IT STRAIGHT BEFORE YOU CONTACT US!!** Also get your source code in proper shape and well commented; there is too much 99% code already drifting around.

If your software is **READY** contact:
Bob May, **Don Williams**, or **Tom Williams**

Southeast Media is a division
of **Computer Publishing, Inc. (CPI)**,
a family of 100% 6800 support facilities.

Availability Legends --

F = **FLEX**, CCF = **Color Computer FLEX**
O = **OS-9**, CCO = **Color Computer OS-9**
U = **UniFLEX**
CCD = **Color Computer Disk**
CCT = **Color Computer Tape**

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"FLEX is a trademark of Technical Systems Consultants
"OS9 is a trademark of Microware

Color Micro Journal

MINER BY LARRY LANDWEHR

"Like his father before him, Sid is a coal miner. Working hundreds of feet below ground it is Sid's job to blast the rock so that the coal seam is exposed. See if you can direct Sid to the most productive areas. How many lumps of coal can you collect before you run out of dynamite? Young and old alike will enjoy this hi-res all machine language game from the author of "IN ASSEMBLY LANGUAGE".

CAT# DM018 16k \$14.95 (CAN) \$12.95 (US)

EXECCART BY PETER KARWOWSKI

EXECCART is a M/L program that allows you to copy ROMPAC programs to tape. They can then be loaded back into a 64K CoCo and examined or modified. You can run most of your ROMPAC's from disk without ever having to remove the disk controller. This saves tremendous wear and tear on the contacts. EXECCART may also be used to add a loader to your own programs to turn on 64K and to copy your BASIC ROMs into RAM so that you can make modifications.

CAT# DM009 64K \$17.95 (CAN) \$14.95 (US)

THE SPOOLER BY PETER KARWOWSKI

Whenever you use your printer, your computer is totally dedicated to feeding it. This isn't such a problem when you just want to print out a couple of lines, but LISTING a long program can be very boring. If you have better things to do than sit around waiting for the printer, then "THE SPOOLER" is just what you need. THE SPOOLER will work on ANY TRS-80 Color Computer from a 16K right up to 64K with disks. Extended BASIC is NOT required.

CAT# DM010 16K \$12.95 (CAN) \$10.95 (US)

TRIMAN

NEWERROR BY PETER KARWOWSKI

NEWERROR will provide four extra functions and abilities for your Color Computer.

1. Give you an audible error warning.
2. Provide full english error messages.
3. Add the ON ERROR GOTO command to BASIC
4. Allow simulated errors for debugging.

As an added bonus we include a second M/L program that you can add to your own BASIC programs to provide them with the ON ERROR GOTO feature. You may use this program even in programs you sell.

CAT# DM008 16K \$19.95 (CAN) \$16.95 (US)

SCREEN BY JOHN MIRAK

Four much needed features are added to Basic with this new machine language utility program from Australia.

1. Automatic line numbering
 2. Line by line program listing
 3. Motor on/off from the keyboard.
 4. Your choice of light or dark, orange, green or black screen with light or dark orange or green characters.
- Works with Basic, Ext Basic & Disk Basic

CAT# DM015 16K \$12.95 (CAN) \$10.95 (US)

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CANADA L8L 4Y9
PHONE 416-529-1319

**DEALER
INQUIRES
WELCOME**

SWISS ARMY KNIFE BY RALPH BLOCH

One of our most prolific authors (PRETTY PRINTER-P.U.F.F.-LIBRARY) has come up with another winner. As the namesake of this program has many blades so SAK has many functions. The disk owner will find it indispensable for diagnosing and fixing the many gremlins that attack a disk system. It will work on any number of tracks and can even read FLEX disks. By copying one sector at a time you can often save an otherwise uncopyable disk.

CAT# DM553 32K \$29.95 (CAN) \$25.50 (US)

SUPER EDIT BY LARRY LANDWEHR

This powerful new utility program from the author of "IN ASSEMBLY LANGUAGE" adds many new editing commands to Basic. You can PRINT one screenful at a time, DELETE a line or lines, JOIN several lines together and hide your programs, or FIND strings and variables. Also included are commands to INSERT, COPY, MOVE & REPLACE one line or a block of lines. Super edit works with Extended Basic but Extended Basic is not required.

CAT# DM016 16k \$19.95 (CAN) \$16.95 (US)

BONES BY MARK MORAN

This original dice game is fun for the whole family. Play by yourself, against the computer or with your friends. Although simple enough for the youngest player the adults will find it addictive.

CAT# DM011 16K \$12.95 (CAN) \$10.95 (US)

Now you can 'Roll Them Bones' on the MC10. We have transferred this popular game without losing any of it's features.

CAT# DM101 4K \$12.95 (CAN) \$10.95 (US)

MUSIC EDITOR BY PATRICIA SHELTON

This program will take regular sheet music and convert it to "play by number" music. You enter the words, notes and chords from the keyboard and the program will output, to the screen or printer, an easy to read version for C or G type organs. Your files can be edited and saved to disk or tape. Easily produce a songbook of your own favorite tunes.

CAT# DM012 16K \$12.95 (CAN) \$10.95 (US)

HOME INVENTORY BY JEFF PYNE

Home Inventory was written for the average home owner to simplify the tedious task of weeding through his possessions. This small database will save an organised list of brand names, serial numbers, values, dates of purchase etc. This could prove to be your most valuable program if you ever have to deal with an insurance company so be sure you have a copy of the programs output in a save place in case of fire or theft. Ext Basic required-Printer optional

CAT# DM013 16K \$12.95 (CAN) \$10.95 (US)

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modified the module headers of several programs so they will automatically request the amount of memory I usually request for them. Debug can be used to do this. The commands which will modify Dynastar (DS) to default to its maximum memory size (32K) instead of the minimum (8K) are:

OS9: load ds

OS9: debug

DB: 1 ds

DB: . .th To point at the permanent storage size in the module header. The value of this byte is \$20

DB: =7F

DB: =FF

DB: Q The change is made so quit debug

Test ds to make certain the new default is working. I first made certain I could edit a large file, then invoked procs from within ds and noted that ds was using 128 pages.

If you want to make the change permanent, use the following sequence:

OS9: save /D0/temp ds

OS9: verify U </D0/temp >/D0/CMDs/ds2
Check its attributes

OS9: attr /D0/CMDs/ds2

You will find that the execute and public execute attributes are missing, so turn them on

OS9: attr /D0/CMDs/ds2 e pe

Save the old version

OS9: rename /D0/CMDs/ds old.ds

Install the new one

OS9: rename /D0/CMDs/ds2 ds

THIS 'N THAT

Continued from page 1

read me" File that is normally included on OS-9 Program Disks which explains how to install the Program in your System (in fact, MOST Programs include and "Installation" Procedure File or two, which does the Installation automatically). They did not even include a sheet of instructions explaining how to do it. OS-9 "old-timers" have no problem, but most of the CoCo Sales are not going to experienced OS-9 Users.

Speaking of **Basic09**; Dale Puckett's Book on "Using basic09" (NOT the correct title, I don't think) should be available around the end of Feb. The book will sell for \$18.95, and will be available from **Southeast Media** (800-338-6800) or **Microware**, as well as other places. Call and reserve or get one ASAP; we will have a full review as soon as it hits the shop.

6883/6847 Problems

Have you been working away on a pet project (usually about 2 AM in the morning) and had your CoCo "go to sleep" on you, for no particular reason? It seems that there is a problem in the 6883/6847 Chips that allow the refresh to get out of sync once in a long while. To the technical types, the problem looks like bad memory (which it is, but NOT due to the Memory Chips). Rumor has it that the problem was first identified by the DRAGON Computer Design Team. Motorola has been working on the problem, and a new set a Chips should be available about the time you are reading this Column.

As we understand the symptoms, the

Computer just suddenly "blows up"; the Program is gone, and a reset is required to get back on line again. It can happen at any time, and once brought back up, everything is normal. A "heat" related problem will usually show up again shortly after bringing the System back up (if the system was not shut down long enough for things to cool down again), where this problem is totally RANDOM. Something like this can drive the Service personnel up a tree; if you can't get the Computer to fail, what do you repair?

"Help Wanted"

We have been experiencing a similar problem with the OS-9 Operating System, but I am not sure it is related (partially because it **ONLY** happens with OS-9). Let me throw this one out for your consideration; maybe we can gather enough information to come to a logical solution.

The specific problem is that often during an OS-9 Disk Format operation, and once in a LONG while during an OS-9 "Copy" operation, the TV Screen goes to garbage and the "System" is **GONE**; no Keyboard, no Display, no NOTHING! When this happens during the format, it is **ALWAYS** during the "Verify" process; the couple of times it happened during a copy, it **COULD** have been during Verify - there is no way to tell. Adjusting the Disk Drive RPM definitely helps the situation, but does NOT eliminate it.

We have the same problem with different Disk Drives (with Qume Thinlines or normal Drives, Single or Double Sided, Tandons, TEACs, etc.), Disk Controllers (using Radio Shack, J&M, and/or F&D), and various and asundry CoCo's; so I think we can

safely rule out **HARDWARE** as a source for the problem. Since it appears to be some type of Disk READ Error that causes the problem, we were beginning to suspect the "CCDISK" Module, **UNTIL**

We have just recently "married" a Radio Shack "Multi-Pak Interface" and Zenith ZVM-121 Green Screen Monitor with the **PBJ 80-Column Word-Pak Cartridge**. We expect to have a full review of the **Word-Pak Unit** next month, but I will say right now that if you are looking for 80-Column capability for the CoCo, this one will more than fill the bill. We have the Software "Drivers" for the normal Radio Shack Operating System, the Data-Comp FLEX, and the RS OS-9 DOS, and **ALL** appear to work like a champ. It is great to see a "Finished Product" for a Review, for a change; **Word-Pak**, with the supplied Software, fits the CoCo Systems like a glove.

Why mention the "Word-Pak" Unit here? Because, while using the **PBJ Word-Pak**, I noticed that the TV Display went "blooey" during a format, but the 80 Column Monitor was **OK**, and I **STILL** had full control of the Computer and **OS-9**! Interesting!! Word-Pak replaces the CCIO Module, which is the Keyboard and Display portion of OS-9 (among other things)?? What does IT have to do with Disk Errors? Is the problem in the "CCIO" Module, and the way it handles errors? Hopefully some of you "sharpies" have already solved this problem; if so, let us know. If you don't have a **SOLUTION**, but **DO** have the problem, let us know what **YOU** know about it; again, if we can get enough information, **SOMEONE** can find a solution.

Continued on page 20

XDMS

Data Management System

The XDMS Data Management System is available in three levels. Each level includes the XDMS nucleus, VMGEN utility and System Documentation for level III. XDMS is one of the most powerful systems available for 6809 computers and may be used for a wide variety of applications. XDMS users are registered in our database to permit distribution of product announcements and validation of user upgrades and maintenance requests.

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As you may be aware, we have been



using a GIMIX System here in the office for a few years, and have recently updated it to the GIMIX III System with all of the "Smart Boards" (CPU Card and Serial I/O Ports) with the special OS-9 Lvl II Operating System (GMX III), and now have 512K RAM on board. To say that this Computer System "sings" is an understatement. The GIMIX System is the "Cadillac" of the SS-50 Bus Machines; all Gold-Plated Connectors, Super Power Supply, etc. (The GIMIX III System will be the basis for the 68000 [not a 68008] CPU Card which should be available this Fall, also; it is being designed around the present "Smart" I/O Boards and DMA Disk Controller, and will be running the new 68K version of OS-9.) Anyway, if you are looking to move up, this is worth investigating, because most of your CoCo FLEX and/or OS-9 Software will set right on the GIMIX System. It will also provide expansion capability up through the 68000, 47MB Hard Disk, etc. as your requirements grow.

Also, see Peter Dibbles' remarks in his column this month about the GIMIX Software Utility that lets you Read and Write Radio Shack OS-9 Disks on the

GIMIX Computer; it sure has been a big help here in the office (when I made up the **PBJ Word-Pak OS-9 System Disk** for the 80 Column Monitor, I just copied the standard OS-9 "dir" Command onto that disk, and have a normal 80 Column Display - no problems).

--- RUN ---

Converting COCO BASIC to OS-9 BASIC09 Part III

Continued from last Month

by E. M. (Bud) Pass, Ph.D.

Computer Systems Consultants, Inc.
1454 Latta Lane, Conyers, GA 30207
Telephone Number 404-483-1717/4570

INTRODUCTION

BASIC09 is an interpretive language developed by Microware for their OS/9 operating system. Parts of it resemble BASIC and PASCAL, although it does not support a proper subset of either language. Tandy is now marketing a version of BASIC09 for OS/9 on the TRS-80 Color Computer.

An earlier article by this author in this magazine discussed the conversion of programs from TRS-80 Color Computer Disk Extended BASIC to BASIC09. At that time, graphics support was not documented for BASIC09 on the Color Computer. Recently, this information has become available, allowing the description of BASIC09 graphics support.

The BASIC09 graphics support package (GFX) is described below. The Color Computer Extended Basic graphics commands are reviewed briefly. Then, the problems involved in the conversion of the graphics portions of Color Computer Extended Basic programs are described.

BASIC09 GRAPHICS INTERFACE

The support of high-resolution color graphics is supported by BASIC09 on the Color Computer thru a module called GFX. It allows the user to access the joysticks and color graphics hardware of the Color Computer without resorting to writing custom programs or interfacing directly to the graphics and joystick hardware. GFX is called with a BASIC09 statement of the following format:

RUN GFX(function,parameter1,...)

In which "function" represents the function to be performed and "parameter1" represents the first of zero or more parameters providing additional information to GFX.

GFX supports the following two basic graphics modes:

128*192 pixels, four-color
256*192 pixels, two-color

It treats the display as a 128 by 192 or 256 by 192 point grid, with the origin at the lower left corner of the screen, as viewed from the normal position. The horizontal (or X) coordinate is addressed from 0 to 255 and the vertical (or Y) coordinate is addressed from 0 to 191. Note that the row numbering system is reversed from the system used by most other terminals and computers, including the text-mode cursor control provided by OS/9 on the Color Computer, which place the origin at the upper left corner of the screen.

GFX actually invokes OS/9 device driver functions and supports few of its own functions. It does not support text mode at all, except to provide a function to temporarily restore the screen format to the original format of 32*16 text mode, which the program may then use, as required, before restoring the graphics screen format. Tables of special OS/9 control codes appear at the end of this section.

Each of the GFX "function" options are described briefly below. Note that the "Mode" option must be used first and the "Quit" option must be used last, in order to properly maintain buffer control and screen mode control. Some of the GFX options refer to "Color", the use of which will be summarized at the end of this section.

RUN GFX ("Alpha")

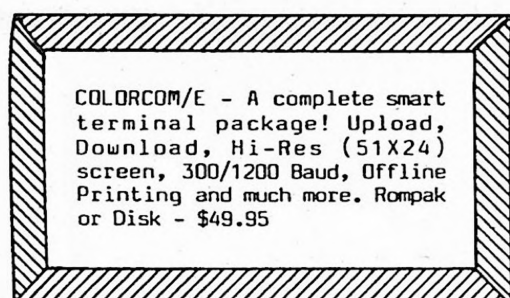
The "Alpha" option switches the screen temporarily back to 32*16 text mode. The text and high-resolution color graphics buffers are separate, and the contents of the alternate buffer are maintained. Either the "Mode" or the "Quit" option must be used to continue or to terminate the use of GFX, respectively.



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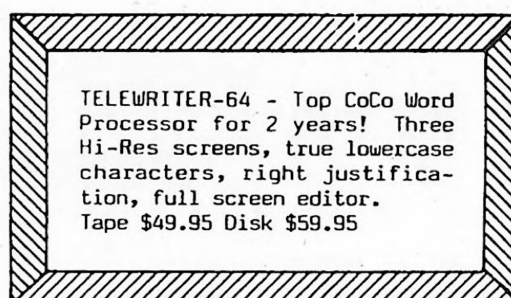
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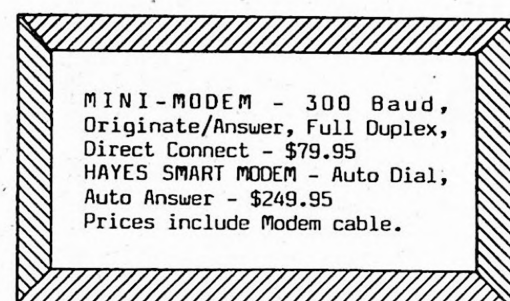


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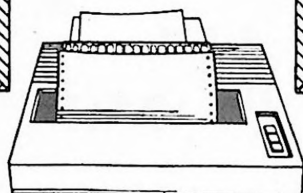
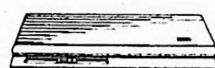


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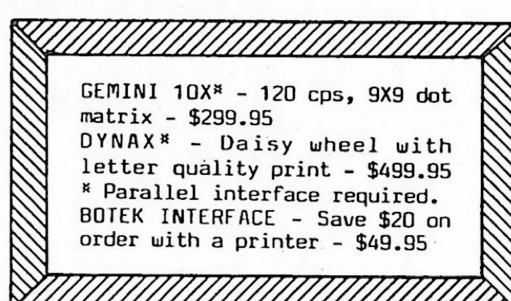
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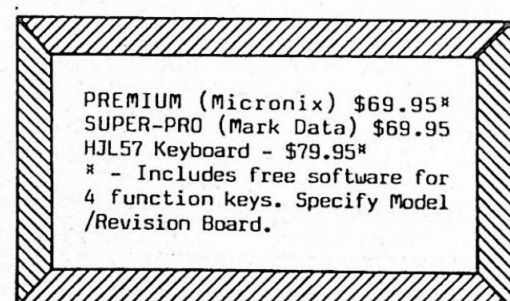


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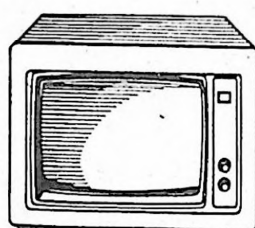


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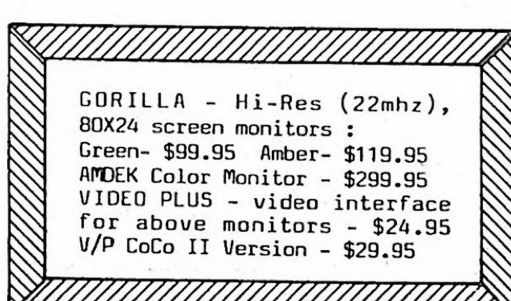
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RUN GFX ("Circle",Radius)
 RUN GFX ("Circle",Radius,Color)
 RUN GFX ("Circle",X,Y,Radius)
 RUN GFX ("Circle",X,Y,Radius,Color)
 The "Circle" option simulates the drawing of a circle on the screen with a given radius. If the "Color" parameter is provided, the circle will be drawn with that color; otherwise, it will be drawn with the current foreground color. If the center position (X,Y) is not provided, the imaginary graphics cursor position is used.

RUN GFX ("Clear")
 RUN GFX ("Clear",Color)
 The "Clear" option clears the screen to the background color. If the "Color" parameter is included, the foreground and background color is set to it. The invisible graphics cursor is set to position (0,0).

RUN GFX ("Color",Color)
 The "Color" option changes the foreground and background color.

RUN GFX ("Gcolor",Code)
 RUN GFX ("Gcolor",X,Y,Code)
 The "Gcolor" option returns the color code of the pixel at (X,Y) or at the current imaginary graphics cursor position.

RUN GFX ("Gloc",Vdisp)
 The "Gloc" option returns the address of the graphics buffer as an Integer. This may be used to help support fast, low-level, access into the graphics buffer with the use of the PEEK and POKE BASIC09 commands.

RUN GFX ("Joystk",Stick,Fire,X,Y)
 The "Joystk" option returns the status of one joystick, in terms of the potentiometers and fire button associated with it. The value for each of the potentiometers is 0 to 63, and of the fire button is 0 or nonzero.

RUN GFX ("Line",X2,Y2)
 RUN GFX ("Line",X2,Y2,Color)
 RUN GFX ("Line",X1,Y1,X2,Y2)
 RUN GFX ("Line",X1,Y1,X2,Y2,Color)
 The "Line" option simulates the drawing of a straight line on the screen. If the first coordinate is not provided, the current graphics cursor position is used as the starting position. If the "Color" parameter is provided, the line is drawn with its foreground color; if it is not, the line is drawn with the current foreground color. After the line has been drawn from the current graphics cursor position (or from (X1,Y1)) to (X2,Y2), the imaginary graphics cursor is set to (X2,Y2).

RUN GFX ("Mode",Format,Color)
 The "Mode" option switches the screen mode from alphanumeric or graphics mode to a graphics display mode (6847 mode 13 or 14) and selects the foreground and background colors and the color set. The second parameter selects two-color (0) or four-color (1) format. The current invisible graphics cursor is set to position (0,0). Since the command requests 6144 bytes of memory from OS/9 for the graphics buffer if not already allocated, it must be called before any other GFX options are used.

RUN GFX ("Move",X,Y)
 The "Move" option sets the imaginary graphics cursor to position (X,Y).

RUN GFX ("Point",X,Y)
 RUN GFX ("Point",X,Y,Color)
 The "Point" option points the invisible graphics cursor to (X,Y) and sets the pixel there to the foreground color. If the "Color" parameter is specified, the foreground color and background color is set to it.

RUN GFX ("Quit")
 The "Quit" option changes the screen back to alphanumeric mode and requests OS/9 to deallocate the 6144 byte graphics buffer.

OS/9 Control Codes

As noted above, the OS/9 screen driver actually implements many of the functions accessible to BASIC09 directly or thru GFX. The following control codes provide terminal emulation functions in text mode and in graphics mode:

Code	Parameters	Mode	Function
\$01			text home up
\$02	X Y		text set cursor
\$03			text erase line
\$06			text cursor right
\$07			text alarm
\$08			text cursor left
\$09			text cursor up
\$0A			text cursor down
\$0C			text home and clear
\$0D			text return
\$0E			grfx temp set text mode
\$0F	Mode Color		text set graphics mode
\$10	Color		grfx clear to color
\$11	Colorset		grfx select colorset
\$12			grfx set text mode
\$13			grfx erase
\$14			grfx home down
\$15	X Y		grfx set cursor

Color Micro Journal

\$16	X Y	grfx draw line
\$17	X Y	grfx erase line
\$18	X Y	grfx set point
\$19	X Y	grfx erase point
\$1A	Radius	grfx draw circle

where: text X and Y values have offset \$20 with origin at upper left corner,
 graphics X and Y values have no offset with origin at lower left corner,
 Mode has value 0 for 256*192 and value 1 for 128*192,
 Colorset and Color codes are below,
 and "\$" indicates hexadecimal base.

Color Table

Several of the codes described above use a parameter called Color, the use of which is detailed below, in terms of Mode parameters.

Color Codes	256*192 Format (0)	
	Foreground	Background
00	Black	Black
01	Black	Green
04	Black	Black
05	Black	Buff

Color Codes	128*192 Format (1)	
	Foreground	Background
\$00	Green	Green
\$01	Green	Yellow
\$02	Green	Blue
\$03	Green	Red
\$04	Buff	Buff
\$05	Buff	Cyan
\$06	Buff	Magenta
\$07	Buff	Orange
\$08	Black	Black

\$09	Black	Dark Green
\$0A	Black	Medium Green
\$0B	Black	Light Green
\$0C	Black	Black
\$0D	Black	Green
\$0E	Black	Red
\$0F	Black	Buff

OS/9 Special Keyboard Functions

Since the Color Computer keyboard is so limited, the OS/9 keyboard driver supports the use of certain two-key character codes. Although they are not strictly related to the use of graphics in BASIC09, they are presented below to indicate how to input certain control characters described above and certain printable characters not allowed by Color Computer Extended BASIC.

Keys	Codes	Function
Clear-A/Z	\$01-\$1A	Control-A/Z
Clear-Brk	\$1B	EOF
Clear-0	none	Toggle Alpha Lock
Clear-1	\$7C	Vertical Bar
Clear-7	\$5E	Caret
Clear-8	\$5B	Left Bracket
Clear-9	\$5D	Right Bracket
Clear--	\$5F	Underline
Clear-,	\$7B	Left Brace
Clear-.	\$7D	Right Brace
Clear-#	\$7E	Tilde
Clear-/	\$5C	Reverse Slash
Clear-A		Repeat Buffer
Clear-D		Display Buffer
Clear-E		Shell EOF
Clear-W		Wait For Children
Shift-Brk	\$03	Abort Current Task
Shift- 	\$18	Destr. Left Cursor
Shift-A/Z		Upper Case Letters

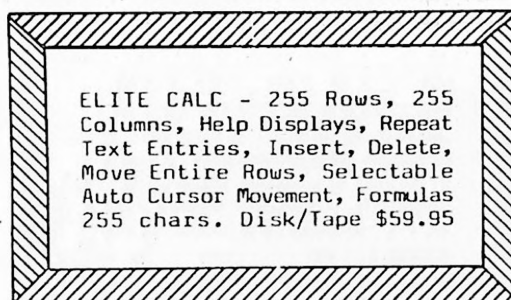


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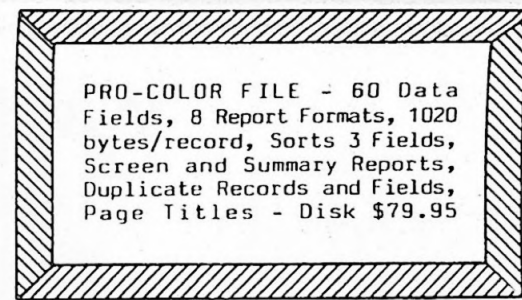


SPREADSHEET

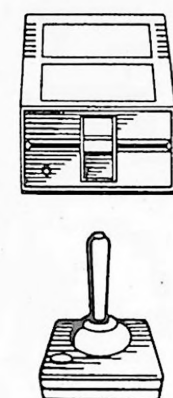
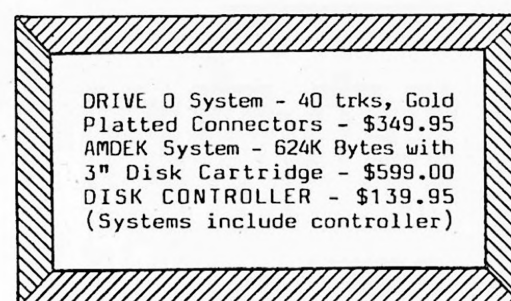


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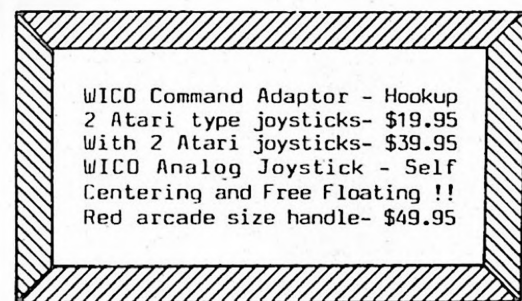
DATA BASE MANAGER



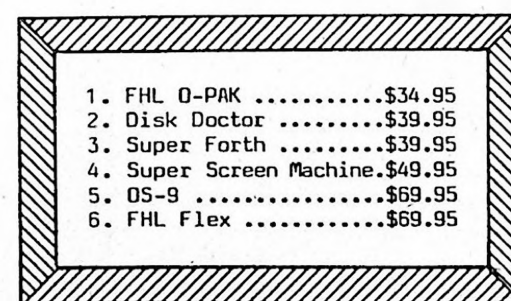
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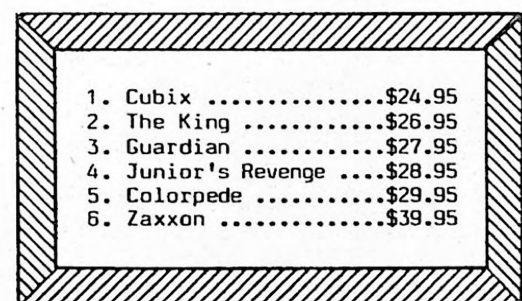


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COLOR COMPUTER EXTENDED BASIC GRAPHICS STATEMENTS

TRS-80 Color Computer Extended BASIC supports graphics directly, as the language extensions were written for the Color Computer, although many of the extensions are very similar to Microsoft and Tandy extensions for other BASIC implementations. It actually supports a text mode and six graphics modes, with the other graphics modes provided by the 6846 VDG remaining unsupported by Extended BASIC, although Color Computer programs have potential direct access to the 6847 and (at least theoretically) are able to access the other graphics modes themselves. The text mode supports the standard printable and many control ASCII characters, plus the usual TRS-80 style block graphics, plus a limited color selection. The graphics modes are described below, but include certain low-resolution and high-resolution screen formats, with the number of permissible colors generally inversely proportional to the graphics resolution.

The screen formats supported by TRS-80 Color Computer Extended BASIC and the color codes used in the statements and functions are summarized near the end of this section. The origin for all graphics operations is the upper left corner of the screen.

CIRCLE (X,Y),R,C,H,W,S,E

This statement simulates the drawing of a circle, ellipse, or arc on the screen. (X,Y) represents the coordinates of the center of the figure, R is the radius, C is the color code to be used, HW is the aspect ratio (height/width), S is the starting point, and E is the ending point.

CLS (C)

This statement clears the current screen to color C. It is used only in low-resolution semigraphics-4 mode.

COLOR F,B

This statement sets the foreground color to F and background color to B.

DRAW command-string

This statement performs a possibly-complex sequence of operations based upon the contents of the command-string. The graphics cursor may be moved, lines may be drawn, the colors of the lines may be changed, etc.

GET (X1,Y1)-(X2,Y2),A

GET (X1,Y1)-(X2,Y2),A,G

This statement copies graphics data from the graphics area defined by upper corner (X1,Y1) and lower corner (X2,Y2) into dimensioned area A. The specification of "G" causes more

complete graphics information to be stored into A than otherwise. Normally, the contents of A are used at some later point in a PUT statement.

JOYSTK (N)

This function returns a value representing the location of one of the four joystick potentiometers. The values of N are as follows:

- 0 horizontal left
- 1 vertical left
- 2 horizontal right
- 3 vertical right

The values are refreshed only when N is zero. The "fire" button associated with each joystick may be read only with a "PEEK" function, as they are not directly supported by Color Computer Extended BASIC.

LINE (X1,Y1)-(X2,Y2),PSET
LINE (X1,Y1)-(X2,Y2),PRESET
LINE (X1,Y1)-(X2,Y2),PSET,B
LINE (X1,Y1)-(X2,Y2),PRESET,B
LINE (X1,Y1)-(X2,Y2),PSET,BF
LINE (X1,Y1)-(X2,Y2),PRESET,BF

This statement simulates drawing a line, box, or filled-in box on the screen. If PSET is specified, the figure will be drawn using the foreground color. If PRESET is specified, the figure will be drawn using the background color. (X1,Y1) defines one end-point of the figure and (X2,Y2) defines the other end-point. If "B" or "BF" is included, a box, rather than a line, is drawn. If "BF" is included, the box will be filled-in with the same color as used for the remainder of the figure.

PAINT (X,Y),CP,CB

This statement is used to fill areas with a specific color up to a border of a specified color. (X,Y) is a point within the area to be filled. CP represents the color of the filled-in area and CB represents the color of the limiting border.

PCLEAR N

This statement reserves N graphic pages each of 1536 bytes; four pages are reserved by default, and as few as one or as many as eight may be reserved.

PCLS C

This statement clears the current graphics page to color code C.

PCOPY N1 TO N2

This statement copies the contents of graphics page N1 to page N2.

PMODE M,P

This statement selects the screen mode M (0 to

4) and page P (1 to 8) to be displayed.

POINT (X,Y)

This function returns the color code of the pixel at (X,Y). It is used only in low-resolution semigraphics-4 mode.

PPOINT (X,Y)

This function returns the color code of the pixel at (X,Y). It is used in the high-resolution graphics modes.

PRESET (X,Y)

This statement resets the pixel at (X,Y) to the background color.

PSET (X,Y)

This statement sets the pixel at (X,Y) to the foreground color.

PUT (X1,Y1)-(X2,Y2),A

PUT (X1,Y1)-(X2,Y2),A,PSET
PUT (X1,Y1)-(X2,Y2),A,PRESET
PUT (X1,Y1)-(X2,Y2),A,AND
PUT (X1,Y1)-(X2,Y2),A,OR
PUT (X1,Y1)-(X2,Y2),A,NOT

This statement copies graphics data into the graphics area defined by upper corner (X1,Y1) and lower corner (X2,Y2) from dimensioned area A. Normally, the contents of A are originally generated by a GET statement. The options are used to modify the copying process in certain limited fashions.

RESET (X,Y)

This statement sets the color of the pixel at (X,Y) to black. It is used only in low-resolution semigraphics-4 mode.

SCREEN (T,S)

This statement selects the text or graphics screen and the color set. T has value 0 for text screen or 1 for graphics screen. S has value 0 or 1 for color set.

SET (X,Y,C)

This statement sets the pixel at (X,Y) to color C. If the background color is not black, it also changes the color of the three adjacent pixels to the same color. It is used only in low-resolution semigraphics-4 mode.

Screen Formats

Following are the screen formats provided by the 6847 VDG. The formats not supported directly by Color Computer Extended BASIC are indicated by a hyphen in the "PMODE" column. They must be accessed with machine-language subroutines or PEEKs and POKEs.

PMODE	6847	Format	Size
text	01	alphanumeric	32*16 0512
-	02	semigraphic 4	64*32 0512
-	03	semigraphic 6	64*48 0512
-	04	semigraphic 8	64*64 2048
-	05	semigraphic 12	64*96 3072
-	06	semigraphic 24	64*192 6144
-	07	graphics-4col	64*64 1024
-	08	graphics-2col	128*64 1024
-	09	graphics-4col	128*64 1024
0	10	graphics-2col	128*96 1536
1	11	graphics-4col	128*96 3072
2	12	graphics-2col	128*192 3072
3	13	graphics-4col	128*192 6144
4	14	graphics-2col	256*192 6144

Color Codes

Following are the color codes used in several of the Extended BASIC graphics statements:

Code	Color
0	Black
1	Green
2	Yellow
3	Blue
4	Red
5	Buff
6	Cyan
7	Magenta
8	Orange

CONVERSION OF EXTENDED BASIC TO BASIC09

As may be inferred from the previous two sections, the graphics facilities provided by BASIC09 thru the GFX module are considerably less powerful than are the facilities provided by Color Computer Extended BASIC. Thus, many programs written for Extended BASIC which generate graphics will require extensive modification to use GFX.

GFX supports the two highest resolution screen modes provided by the Motorola 6847 VDG (128*192 with four colors and 256*192 with two colors) known as PMODE 3 and PMODE 4, respectively, in Extended BASIC. It does not support the SEMIGRAPHIC-4 mode used by the CLS, RESET, and SET statements and POINT function, nor does it support the other PMODEs or other 6847 modes not assigned PMODE numbers. It also supports only one graphics buffer. It does not support area-coloring operations such as those

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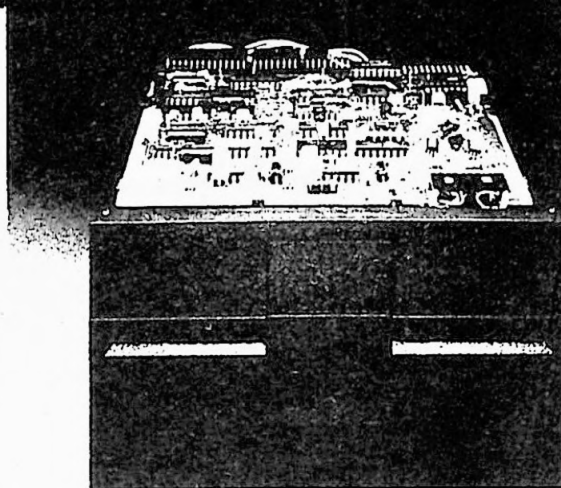
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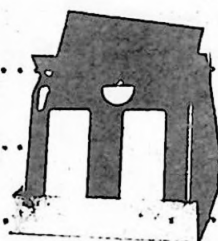
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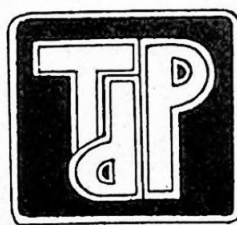


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provided by the Extended BASIC PAINT and LINE statements.

The screen numbering conventions differ between Extended BASIC and GFX. Extended BASIC locates its origin at the upper left corner of the screen, and GFX locates its origin at the lower left corner. The conversion of one system to the other (for PMODES 3 and 4) may be accomplished by subtracting each Y value (vertical coordinate) from 192, since there are 192 pixels vertically, numbered 0 to 191. Otherwise, any figures displayed will be inverted, top to bottom.

Since the graphics page area is assigned to a fixed location in Extended BASIC, but the GFX graphics buffer area is assigned dynamically by OS/9, every use of PEEKs and POKEs to manipulate the data on the graphics page areas must be checked and modified to use the GFX graphics buffer area. PEEKs and POKEs used to manipulate registers in the 6847 VDG may very well work properly without change; however, they must be checked to ensure they do not modify the buffer address in the 6847.

The graphics conversions which are reasonable to accomplish directly or in a straightforward manner are discussed below. Constructs not discussed below probably will require being rewritten, in terms of the GFX options, in a called assembler routine, using PEEKs and POKEs, or etc. Since GFX implements the highest resolution screen modes possible using the 6847 VDG, it is always possible to rewrite statements using the same or lower resolution modes, in terms of GFX options, even though the results may be produced very slowly, and the code may be lengthy.

The GFX "Mode" option must be used before any other GFX options to allocate the 6144 byte high-resolution graphics buffer and to establish the graphics display mode. The GFX "Quit" option must be used after all other desired GFX options have been called to deallocate the buffer and to return the screen mode to alphanumeric format.

The first Extended BASIC graphics statement normally executed in a program is often either PMODE or SCREEN. Although the GFX "Mode" option is not equivalent to either PMODE or SCREEN, it accomplishes several of the same functions as the following statements:

PMODE M,1 where M is 3 or 4
SCREEN 1,C where C is 0 or 1
so the corresponding GFX options could be coded as follows:

RUN GFX ("Mode",C,N)
RUN GFX ("Move",0,191)

where the value of N is determined from the GFX "Color Table" above and the "Move" option is used to initialize the cursor to the top left corner; this may not be necessary if the initial position of the cursor is unimportant.

Although few programs change the high-resolution screen formats once established, the GFX "Mode" option may also be used multiple times to accomplish this.

The last Extended BASIC graphics statement usually issued by a program, if it ever terminates, and if it does not simply allow BASIC to clean up for it, is the following:

SCREEN 0,X where X may have any value
The last GFX option used by a program must be "Quit". A similar option, "Alpha", may be used to temporarily return the screen format to text mode, so the corresponding GFX options could be coded as follows:
RUN GFX ("Quit") or
RUN GFX ("Alpha")

If the possibility exists that a BASIC09 program could terminate without issuing a GFX "Quit" option, special code should be inserted (perhaps using an "ON ERROR" statement) to insure that the "Quit" option will always be issued. Otherwise, the screen could be left in the wrong format and/or 6144 bytes of memory could be unnecessarily tied up.

In order to clear the entire screen to the background colors, Extended BASIC programs may use the following statement:

PCLR C
The corresponding GFX option is as follows:
RUN GFX ("Clear",Color)
where the parameter has values described in the GFX "Color Table" above.

In order to change the foreground and background colors, Extended BASIC programs may use the following statement:

COLOR F,B
The corresponding GFX option is as follows:
RUN GFX ("Color",Color)
where the parameter has values described in the GFX "Color Table" above.

In order to determine the color code of a pixel, Extended BASIC programs may use the following function:

PPPOINT (X,Y)
The corresponding GFX option is a statement, as follows:

RUN GFX ("Gcolor",X,192-Y,Code)
In which "Code" represents the location into which the color code will be placed.

In order to set the color code of a pixel to the foreground color, Extended BASIC programs may use the following statement:

PSET (X,Y)
The corresponding GFX option is as follows:
RUN GFX ("Point",X,192-Y)
There is no direct corresponding GFX option for the Extended BASIC PRESET statement.

In order to simulate drawing a line on the screen, Extended BASIC programs may use the following statement:

LINE (X1,Y1)-(X2,Y2),PSET
The corresponding GFX option is as follows:
RUN GFX ("Line",X1,192-Y1,X2,192-Y2)
although the format is simplified by assuming no cursor-defined ends. Neither the "PRESET" nor the "BF" options of the LINE statement are supported directly by GFX.

In order to simulate drawing a box on the screen, Extended BASIC programs may use the following statement:

LINE (X1,Y1)-(X2,Y2),PSET,B
The corresponding GFX options are as follows:
RUN GFX ("Line",X1,192-Y1,X2,192-Y1)
RUN GFX ("Line",X2,192-Y1,X2,192-Y2)
RUN GFX ("Line",X1,192-Y1,X1,192-Y2)
RUN GFX ("Line",X1,192-Y2,X2,192-Y2)
although the format is simplified by assuming no cursor-defined ends.

In order to simulate drawing a circle on the screen, Extended BASIC programs may use the following statement:

CIRCLE (X,Y),R,C
The corresponding GFX option is as follows:
RUN GFX ("Circle",X,192-Y,R,Color)
where the last parameter has values described in the GFX "Color Table".

In order to determine the position of a joystick, Extended BASIC programs may use the following function:

JOYSTK (N)
In which N determines which joystick potentiometer is being read and the values are updated only when n is zero. The corresponding GFX option is as follows:

RUN GFX ("Joystk",Stick,Fire,X,Y)
which returns the current status of the fire button and both potentiometers associated with one joystick.

Extended BASIC provides the GET and PUT statements to allow a program to copy a portion of the graphics buffer to a dimensioned area and then restore it later, in the same or different portion of the same or different buffer. Although GFX has no option to allow a BASIC09 program to do this directly, it does provide facilities which allow the program to perform many of the same operations, although not in as fast a manner. The formats of the GET and PUT statements are as follows:

GET (X1,Y1)-(X2,Y2),A
PUT (X1,Y1)-(X2,Y2),A

with options associated with both GET and PUT, as described above. The program must define a dimensioned area large enough to contain the largest portion of a graphics buffer to be read by GET or written by PUT in the program. Then, using the GFX "Gloc" option to determine the base address of the graphics buffer, the program may use PEEKs of the appropriate addresses to simulate a GET operation and POKEs to simulate a simple PUT operation. The addresses to PEEK or POKE may be determined by row and column, taking into consideration the mode (128 or 256 columns per row) and the reversed numbering of the rows between Extended BASIC and BASIC09 with GFX. Thus, if "Mode" is zero for 256 columns per row and one for 128 columns per row, and "Bbase" represents the base of the graphics buffer, the address of the pixel at (X,Y) (for the use of PEEKs and POKEs) is as follows:

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assuming that Extended BASIC row numbering is used, since the 6847 places the logical origin at the beginning of the graphics buffer. Obviously, this computation need be done only once, if at all, per row, since the pixel information on a given row is at adjacent, ascending addresses.

SUMMARY

This article has discussed the Microware BASIC09 graphics module GFX from the point of view of converting TRS-80 Color Computer Extended BASIC programs using graphics to BASIC09 with GFX. Since GFX provides substantially fewer capabilities than does Extended BASIC, the conversion of many Extended BASIC programs is quite involved and the changes required are extensive. However, since BASIC09 and OS/9 support normal text mode and GFX supports the highest-resolution graphics modes, it is always possible to convert Extended BASIC graphics statements and functions to BASIC09 and GFX. This article presented those Extended BASIC graphics statements and functions with the most straightforward GFX correspondences. Others must be rewritten.

OS-9 TIPS

The Versatile "dsave" Command

"dsave" is one of the most useful commands in the Users "Execution" Directory.

In normal operation, all you have to do is set up your "Data Directory" (with the "chd" command) to the Directory that you want to COPY FROM; execute the dsave command; change your "Data Directory" to the point you want to COPY TO; and then execute the 'Procedure File' that the dsave command produced.

The normal dsave Command Line entry will look something like this:

```
dsave -ls32 /d0 >/d0/cpy
```

The options for the call must immediately follow 'dsave'; these provide an "indented" listing and request 32K of memory (which you may want to adjust according to how much memory you have available -- do a **afree** and divide the number of free 'pages' by 4, and then leave a little more room for the system); also note that the '-s' option requests memory in Kilo-bytes, NOT pages. The '/d0' is the root device that you are copying FROM; it is ALWAYS required (but may be any Drive you have). Finally, the '>/d0/cpy' specifies that you want the 'Procedure File' to be output as a Disk File on Drive 0 named "cpy". You can "re-direct" the output anywhere you want, but, since it is normally a temporary file, why not put it where it is easy to get hold of, as it will probably be deleted as soon as it has been used once.

Now, all we have to do is change our "Data Directory" to where we want the files placed, and enter the command

```
/d0/cpy
```

and watch the files being copied into that directory.

BUT; suppose we did not want to copy ALL of the files in that Directory (and any of its' Sub-Directories), but DID want to copy a lot of them? Or, suppose we want to "clean up a disk"; get rid of bunch of files, but do not relish sorting through and doing a **del** on each and every one of them! Enter **dsave** AND an **editor**. If we want to copy some, but not ALL of the files, simply edit the Procedure File that **dsave** produced so that only those that you wanted to copy are LEFT IN THE FILE. To "delete" all, or a bunch of files, run **dsave** without the options, and then edit the Procedure File by changing ALL "copy" commands to "del" commands, and delete the garbage in each line, so the file consists of lines like:

```
del /d0/cmds/attr
del /d0/cmds/exbin
```

etc.

Then run the procedure file, and all of them will be deleted.

Did you ever wish you could see a Directory of the **WHOLE DISK** (especially a new one, that you don't know whether it has files under directories, or just files with NO Directories)? Try this command entry:

```
dsave -l /d0 >/p
```

and you will have an "indented" **COMPLETE** directory of the Disk; yeh, there will be some extra 'copy' statements in each line, but you **CAN** see the total makeup of the Disk.

If you have never used the **dsave** command, use one of the above command lines on your normal OS-9 Disk; besides providing some hints on how to make up a "Procedure File" (note the "tmode .1" statement, for example; also, note that OS-9 doesn't care about 'leading spaces', since these procedures WORK), it will also help you understand more about the structure of the Directories on your Disk, and OS-9 in general.

OS-9 USER'S GROUP NEWSLETTER

President's Column
By Dale L. Puckett

The OS-9 User's Group has been moving right along since that fateful day in mid-August when several hundred of you -- gathered in Des Moines, IA for the second annual Microware OS-9 seminar -- elected new officers and gave us a mandate to make it go. First, let me introduce your new officers.

Peter Dibble, our Vice President, is the Head of User Services at the University of Rochester in New York. An avid OS-9 fan, Pete writes the monthly OS-9 column for **68 Micro Journal**. He knows OS-9 backwards and forwards and has even written an alternate Shell which you may see in our User Group Software Exchange Library some day soon.

Tom Murphy, our Secretary, is President of Suntel Systems Corp. in Earth City, Mo. In case you're wondering, Earth City is a suburb of St. Louis. Tom uses OS-9 daily in his business which serves telephone companies around the country. His GIMIX hardware and OS-9 software join forces to monitor operator-handled traffic in the nationwide telephone network. Suntel helps its customers get the most efficient use out of their equipment.

George Dorner, our treasurer, is an educator and veteran OS-9 User. He teaches at Harper College, a community college in Rolling Meadows, a Chicago suburb. George is one of the few who run OS-9 on an Apple. He uses the "Mill" and served our User's Group last year by running the Bulletin Board from a timesharing computer at the college.

Your President is a warrant officer in the U. S. Coast Guard and author of Microware's new book, "A Complete Tour Guide of BASIC09". He also writes a monthly OS-9 column for **Rainbow**, a magazine dedicated to Color Computer users. He uses a GIMIX

Level II system and is the author of **Eather**, **Readtest**, **Help** and **DynaSpell** on 6809 based computers and co-author of "The Speller" from the Hayden Software Company on the IBM PC. An amateur radio operator since 1957, he has been using 68XX microcomputers since 1975 when he cut his teeth on a SWTPC rig with MIBUG and 12K of memory.

KUDOS BRIAN

Thanks to Brian Capouch and his officers for coming up with the idea of an OS-9 Users Group and holding it together during that first trying year. Brian pushed the idea of a Software Exchange for OS-9 Users and gave it the boost needed for a quick start at the OS-9 Seminar this past August. You'll see his name several times in the list of software available in our library.

MORE KUDOS

Thanks to Ken Kaplan and all the programmers at Microware for the encouragement they gave us. And, thanks to Jeanne Kaplan and the other gals at Microware who signed us up with our own Post Office box and promised to faithfully forward our mail each week.

Thanks to Richard Don at GIMIX who donated a Level III system for our bulletin board. And, to Bobby Phillips for letting him do it and Mike Magnus for maintaining it. You'll read a lot about our new bulletin board in George Dorner's column.

Thanks to Frank Hogg at FHL who has offered to duplicate and distribute our Users Group software.

Thanks to Jim Bellomo who set up an OS-9 Users SIG on CompuServe. His user ID is 71625, 240 if you want to contact him.

Thanks to James Widdowson at KEMTRONIX (UK) LTD, High Street, Compton, Berkshire, England RG16 0NL for donating a copy of **DynaMail** to the Users Group officers so that we can maintain our membership list easily. **DynaMail** is a selective indexed mailing list and marketing analysis system.

Thanks to Dave Lissiuk, Software Manager at Springbok Digitronics in Silver Springs, MD and Milan Chris Getting of the JPM Group in King of Prussia, PA for volunteering to assist with the communications committee.

Thanks to Don Williams at **68 Micro Journal** and **Color Micro Journal**, Bill Sias at **Forum Sixty-Eight**, Dr. Bud Pass at **System 68** and Lonnie Falk at

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For fun, (and this requires no ML experience), use Peeper with arcade games, watching the fine details of the animation effects in slow motion. See how the game looks and plays in other graphics modes. Or watch what is happening on "hidden screens" you never see. (Makes a superb demonstration.)

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Rainbow who agreed to publish all the information we could write about the users group.

And finally, thanks to Dr. Rudolf Keil of Germany who volunteered to be our contact point in Europe. He is maintaining contact with George so that we have a way to get information to and from Europe.

OUR CHAIRMAN

Two members deserve special credit and recognition. Dave Kaleita, manager of the engineering and test department at the Jabil Circuit Co. in Troy, Michigan volunteered to chair our Software Exchange Committee. Dave is an active member of the Southeast Michigan Computer Club. He's doing a great job despite the fact that this is probably the hardest and most time consuming job in the Users Group.

Tom Westhoff of Westronics in Willmar, MN is the chairman of our communications committee. He is designing a bulletin board that will look and act like OS-9. In fact, it will be OS-9. We feel that operation will be a snap for the oldtimers and a tremendous way to introduce OS-9 to new users. You'll read more in George's column.

OUR PURPOSE

We'll start by quoting from our new by-laws.

"The purpose of the OS-9 Users Group is:

1. To stimulate and sustain interest in computers in general, and in OS-9 in particular.
2. To promote the cooperation and exchange of information between members.
3. To conduct programs and activities to promote fraternalism and to advance the general interest and knowledge of members.

When you elected us in August, you gave us three mandates:

1. Incorporate the Users Group and if possible obtain a tax exempt status.
2. Establish a method of communication to and from our members.
3. Coordinate with overseas OS-9 users and attempt to establish a continuous flow of information across both the Atlantic and Pacific.

After the election, your officers met and established some secondary goals to augment the three tasks you mandated. We decided that building our membership would be one of our foremost goals. By doing this, we would create the opportunity for local clubs to form in many cities. Through this social medium our new members would have the chance to learn from the oldtimers. The local clubs could then communicate their desires through our bulletin board and Compuserve.

We also wanted to emphasize education. We thought that by getting the oldtimers to tell sea stories to new OS-9 users in local clubs we could serve the many newcomers brought to us by Tandy's introduction of OS-9 on the Color Computer.

Speaking of education, here's a great idea I picked up from Richard Don at Gimix. We could put a CoCo "Help" directory on our OS-9 bulletin board. This directory could be packed full of hints for the new OS-9 user and answer those questions we all had when we first started using this outstanding operating system. Do we have any volunteers? Call George Dorner if you would like to help work something like this up. When your pride and joy is on the air, Pete and I will spread the word in the trade press.

We hope to coordinate your wishes and make this Users Group a viable voice for the OS-9 User so we will be in a position to make your desires known to the management at Microware. We will tell them which utilities you would like to see developed and the type of enhancement you would like to see in the future. We will strive to bring solid support to every OS-9 user.

We knew that if we were to achieve the goals stated above we would need a large active membership. To get that we would need an incentive. We decided that the most effective incentive would be to establish a Software Exchange which gave you access to a large selection of OS-9 software.

In an attempt to accomplish all of this we decided to use a structured approach. Four committees would form the heart of the Users Group. Each officer would work with the chairman of one of the committees.

Tom Murphy, our secretary tackled the administrative chores with the help Tom Westhoff, George Dorner, Brian Capouch and others.

George Dorner heads up the communications effort. He works hand in hand with Tom Westhoff, chairman of our Communications committee and Dr. Keil our point of contact with European OS-9 users.

Peter Dibble tackled the membership problem

and is moving the effort along nicely with the assistance of Ken Kaplan and the staffers at Microware, Richard Don at GIMIX, Frank Hogg at FHL and many others in the industry.

And finally, I agreed to work with Dave Kaleita to help establish a viable Software Exchange program. Dave has done a tremendous job and you'll see the impressive catalog he has mustered elsewhere in this newsletter. Thanks to Frank Hogg's offer to take care of our duplication and distribution we are going to be able to deliver user written, public domain software to you for only \$3.00 per disk. Further, we hope to pack at least 10 programs on each disk.

As a bare minimum, everyone who joins the OS-9 Users Group will receive one disk free. Dave will select programs that he thinks are needed in everyone's "toolbox." Included will be a simple data entry program that will make it easy for you to submit your own programs and a modem program so you can get on line and talk to our OS-9 Users Group bulletin board.

So, with this resolve and much enthusiasm we left Des Moines and began our planning. Our next meeting would be a conference telephone call in early September. That meeting went well, as did the second conference call in mid-October. You'll see the results of those calls in each officers committee report in this newsletter.

POST OFFICE BOX

Thanks to Ken Kaplan and the office staff at Microware, we now have our own mailing address. Please send all mail to us at this address. Ken's secretaries say they will empty the mailbox once a week and mail it to one of the officers. He in turn will see that the proper officer or committee chairman answers your correspondence. Here's the box number:

OS-9 Users Group
P. O. Box 8027
Des Moines, IA 50301

SOFTWARE EXCHANGE NEWS
By Dave Kaleita

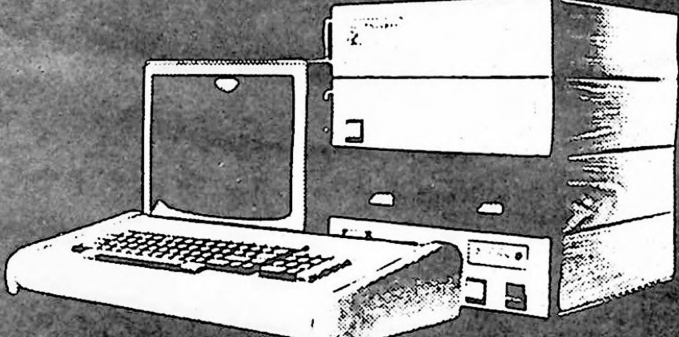
We've accomplished a lot since we left Des Moines last August. Thanks to quick decisions from our new officers and a lot of friends in the industry we will soon have a very exciting software exchange program. In fact not too long after you read this newsletter, you should be receiving your first disk.

The first program on our first disk is a quick data entry utility that will make your future

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NMI button		225.00	325.00
Item	Bare	KIT	A&T
IT3 - INTERRUPT TIMER			
1, 10, 100 per sec.	19.95	29.95	39.95
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Single board comput.	39.95	114.95	139.95
DPIA - Dual PIA parallel port			
4 buffered I/Os	24.95	69.95	89.95
XADR - Extended Addressing			
BAUD gen. PIA port	29.95	69.95	89.95
MB8 - MOTHER BOARD SS-50c			
w/BAUD gen.	64.95	149.95	199.95
P168 - 168K PROM DISK			
21, 2764 EPROMs	39.95	79.95	109.95
FD88 - Firmware development			
2, 8K blocks	39.95	84.95	114.95
XMPR - 2764 PROM burner adapt.			
for 2716 BURNER		19.95	-----
----- Color Computer -----			
MONOLINK - 20 Mhz Monochrome			
video driver		15.00	20.00
CC30 PORT BUS w/power supply			
5 SS-30, 2 Cart		169.95	199.95
POWER BOX 6 switched outlets			
transient suppression		29.95	39.95
RS-232 3-switched ports			
for above		ADD +20.00	+25.00



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submissions to our library quite painless. You will only need to answer a few questions, copy your program on to the disk and put it in the mail.

Here's how our software exchange will work. First, all current members will receive one disk containing a selection of programs. In addition to the quick data entry program mentioned above, we also hope to give you a modem program and eight to 10 additional utilities. Each new member will also receive this disk. When Pete receives a membership application and the annual membership fee (\$25.00), he will immediately forward a mailing label to Frank Hogg who will ship the disk.

I'll be putting together several additional disks, each containing eight to 10 programs. They'll probably be grouped by type, i.e., BASIC09, 'C', PASCAL, COBOL, etc. As I complete the new disks, I'll forward the master to Frank, who will keep it on file. We'll publish a list of the utilities and programs available on these disks in the trade pubs.

There are two ways for you to get one of these additional disks. If you have a program you would like to donate to the Users Group, send it to us at Post Office Box 8027, Des Moines, IA 50301. You will receive your choice of one of the additional disks FREE.

If you don't have a program to donate, don't worry. It's still almost painless. To receive an additional disk, send us a letter with the number of the disk you would like and \$3.00 dollars. This will cover the expense of making the disk. You may buy as many of the additional disks as you like. They will all be available for \$3.00 each.

Please remember however, if this software exchange is going to work, we are going to have a continuous input of software. That means somewhere along the line you are going to have to contribute your share.

We'll all be ahead in the long run. It makes absolutely no sense for each of us to spend all that time re-inventing the wheel. The OS-9 Users Group Software Exchange is an exciting answer to that problem. We all stand to gain. All software will be Copyrighted in the name of the original author and the OS-9 Users Group.

We will be able to ship these disks in five-inch, eight-inch standard OS-9 and five-inch Color Computer OS-9 formats. Please let us know which type you need when you order.

BULLETIN BOARD NEWS
by George Dorner

Plans for a real OS-9 Bulletin Board go forward ploddingly. Hardware is not the problem. GIMIX has donated space on a GIMIX III at their offices in Chicago and the hardware baby-sitting will be volunteered by Mike Magnus. Thanks to Richard Don for making these arrangements. The officers have voted to acquire a 300/1200 baud modem for use on the BBS, if other arrangements fall through. A phone line has been ordered for installation at GIMIX which the Users Group will pay for.

Per usual, the software is the real slowdown. We do have Dave Lissik's large program, but it hasn't been fully tested yet. At Des Moines and in subsequent discussions, we decided to implement a "bare bones" system at first. This will likely be menu driven, but will have the option to exit that structure so the user may just use his knowledge of OS-9 to use the system. Certain functions of OS-9 will be defeated to protect the system. This is well along the way I am told, but I haven't seen the software at this point. If it isn't forthcoming, there are some other options to produce BBS software - but at the cost of more time.

When the OS-9-based OS-9 BBS comes to life, it will be announced on the old OS-9 BBS, on the COCO OS-9 section of CompuServe, and on the CompuServe OS-9 SIG (assuming that it exists by that time). If you would like to help out on getting the BBS off the ground, let me know. I have a couple of volunteers and would like to establish a broad-based committee to bird-dog this issue.

OS-NINE, the First OS-9 BBS
George Dorner

At the May 1982 Microware meeting in Des Moines, we offered to set up a temporary bulletin board system until a "real" OS-9 BBS could be launched. Alas, a year and a half later this BBS, known as OS-NINE to me and no one else, still exists and gobbles up several hours a month of my free time. It will continue to exist until it is no longer needed. I hope to see it put to death by the imminent birth of the "real" system as noted elsewhere in this newsletter.

OS-NINE functions on an HP Access (or HP 2000G) minicomputer. This was a super computer for timesharing about ten years ago when it was young, but it has some real disadvantages for a BBS system. Chief among these is the inability to interrupt output from the keyboard, other than with a break key which serves as an "exit" command. Thus, it is hard to browse without building up a

large phone bill. A listing may only be aborted with a 'break' and that will be after a 128 character buffer empties!

The other shortcoming is that the system uses a bastardized X-on/X-off protocol which sends many [control S] (hex \$13) characters within any message. This is OK for a dumb terminal, but it will confuse most OS-9 terminal programs unless these characters are stripped out.

Despite these two bad features and the fact that the software has purposely NOT been made more friendly or otherwise improved, lots of useful and interesting information has passed there. Most of the "big names" of the OS-9 world have been there at least once, and a query almost always is answered within a week.

How to Log On OS-NINE

***Dial 312-397-8308 or 312-397-8380 (Chicago area)

***When connected, type [CR][LF] or CTRL-M CTRL-J several times until you see:

PLEASE LOG IN

***then you should type:

bel-g500,,3 and a [CR].

***This should get you in and you should see:

User: 4729 Last: 562
] OS-NINE users group BBS

Use [?] to see commands.

Archives in #1-#499.
Index in #10 ... needs some work.

Recent messages are after #500.

Users Group Stuff: #501-510
CompuServe SIG: #511-520
COCO/OS9: #521-530

BREAK stops printing ... only after 128 char. buffer empties.

You are User # 4729
There are 244 Messages
562 Is the Last Message Number

Function: E,G,H,K,Q,R,S,X
(or ? if you don't understand) q

Starting Message # or -10 to start 10 back from most recent :-5

Mess. Num. Subject
557 CoCo OS-9 Support ---K. Kaplan
558 OS-9 Support --- S. Bassett
559 To Kent Meyers
560 COCO BBSRS
561 Coco OS-9 --Ty Taylor
562 68000 CROSS ASSEMBLER

Function: E,G,H,K,Q,R,S,X
(or ? if you don't understand) r 10

Mess # 10 Subject: OS-NINE BBS Topical Index
From: Sysfolk

Dated: DEC. 30,1982 # read 161
Last Time Read NOV. 5,1983

OS-NINE BBS Index Tree

Message No. Topic Heading
1-99 General Communications
1-9 Info About This BBS
*** 10 OS-NINE BBS Index Tree
(This message.)
11-49 OS-9 Users' Group Info
11-29 General
31-39 Newsletter
41-49 Our Dream BBS
51-59 Other B. R. Systems
61-79 Miscellaneous
81-89 Books and Publications
91-99 Ham Radio/Packet Radio
101-299 Software Info
101-149 General OS-9
151-199 Problems and Documentation
201-270 Languages - General
211-239 BASIC09
241-249 Pascal
261-269 C
271-284 Utilities
285-300 Modem/Communications Software Info
301-349 Hardware Info
301-309 6809/68000 Info
311-319 Radio Shack COCO
321-329 Gimix
331-339 The Mill/Apple & 6809
341-349 Others



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Star Writer \$1195.00 Printer Master \$1595.00

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No soldering required \$29.95

E PROMS 2716
\$2.95 ea minimum order 5
\$2.00/10 call for larger quantities
64K DRAMS 4164s \$50.00/8

7 utility programs for a cassette based Color Computer. Requires 16K EXT. The utilities include the following:

1. VIDPRINT: selectively print Vidtex screens to printer.
 2. MERGE: automatically merges 2 or more Basic programs.
 3. CSAVEM: makes copies of ML (machine language) programs.
 4. DUAL/PRT: prints to screen and printer simultaneously (great with TRON).
 5. AMORTIZE: amortization schedule.
 6. GRNSCRN: allows entry of lower case comands.
 7. WIDTH: set width of your printer output.
- PUPII for dish based Color Computer also includes the following:
8. ROMBAK: saves ROMPAC even protected PACs and allows you to load them to RAM (64K required).
 9. ROMMER: flip between BASIC, EXT BASIC, or DISK BASIC without removing DISK CONTROLLER (64K required).
 10. DICKSCAN: gives START, END, and TRANSFER addresses of DISK ML programs.
 11. SORT-DIR: sorts disk directory and writes to disk.
 12. ZAPPED: check tracks, sectors, edit and fix directories.

PUP is available on CASSETTE only -
PUPII is available on DISK only.

PRICE: PUP \$19.95 PUPII \$34.95

When you consider that a program similar to CSAVEM called ML RABBIT is available for \$14.95; isn't PUP the logical choice!?!
.....

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 401-499 Commercial Information
 401-449 Commercial Software
 Info
 451-499 Commercial Hardware

That was message # 10

Message # to Retrieve or Return for next
 or 0 to quit :0

Function: E,G,H,K,Q,R,S,X
 (or ? if you don't understand) g

Do you wish to leave a comment
 or helpful hint (Y/N) n

Thanks for calling
 0003 MINUTES OF TERMINAL TIME

OS-9 Users Group Abroad

Our communications points for Europe and
 Japan respectively will be:

Dr. Rudolf Keil
 Keil Software-Elektronik-Datentechnik
 Porphyrsstrasse 15
 D-6905 Schriessheim
 Tel.: (06203) 6741
 Telex: 4 65 025 keil d

Schriessheim is near Heidelberg.

Toshio Shinjo
 Microboards, Inc.
 3-8-9 Baraki
 Ichikawa City, Chiba 272-01
 Japan
 Tel.: 0473(28)6005
 Telex: 2993122 MICRO J.

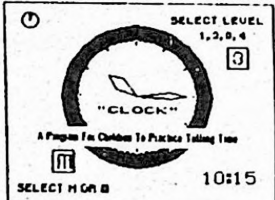
Ichikawa is just northeast of Tokyo.

These men are both Microware representatives
 and will serve as distribution agents for
 information we forward to them. Also, we hope to
 be kept abreast of the significant happenings and
 software developments in their areas. Dr. Keil
 indicated that there are probably 200-300 OS-9
 users in Germany, but possibly eight times that in
 France. An estimate of about 300 users in the U.K.
 was made. (Please help us to update these
 estimates.)

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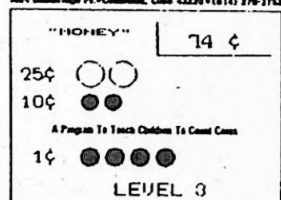
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Skip Counting	\$16.95	\$18.95		
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ABC's	\$ 9.95			\$11.95
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Mathfact	\$16.95	\$18.95		

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In order to keep deliberations short, the
 choice of Dr. Keil and Mr. Shinjo was quite
 arbitrary and unilateral. A mechanism to choose
 such representatives more formally should be a part
 of next year's meeting agenda.

When software distribution details are pinned
 down, these contacts will be used to reach their
 constituencies. In addition, once we have the OS-9
 BBS operating on an OS-9 machine, we will try to
 find an economical way of providing access to it by
 TYMNET or some similar service which may be useful
 for our members abroad. We will gladly consider
 establishing other contacts in countries or
 continents where the need is felt and where
 volunteers come forward.

Membership & Communications

The official mailing address of the OS-9 Users
 Group is as follows:

OS-9 Users Group
 P. O. Box 8027
 Des Moines, IA 50301

All mail sent to this address will be
 forwarded to the appropriate officer for action or
 consideration. Thus, a lag in response may be
 expected. It was decided, however, that a
 permanent address was necessary.

If you know another address of the person you
 wish to reach, you may certainly communicate
 directly. Please do not publish other addresses
 for the Group, however.

Membership in the Group may be obtained by
 sending a check payable to the OS-9 Users Group for
 \$25 to the above address.

CompuServe Special Interest Group Jim Bellomo

I have been in communication with the folks at
 CompuServe and they are enthusiastic but slow. I
 received descriptive information on OS-9 from Andy
 Ball at MicroWare and sent it out to CompuServe.
 They were impressed. At first they thought that
 Tandy had developed OS-9. GADS !!!!!!! Well, they
 'now the history now.

Special Interest Groups on CompuServe function
 much as do bulletin boards which you may have used.
 The SIG can be set up to allow Users Group members
 only to download software. But I have some
 thoughts on this. The SIG will not cost any money
 to the OS-9 group. It will only cost the user the
 connect time (\$5.00 an hour from 6 PM to 5 AM and
 all day on weekends and holidays their local time.)
 The CPM SIG works this way: When one first checks
 on it asks if you would like to become a member.
 If you answer yes they will process your membership
 in about a week (there is no cost). Once you are
 established as a member you are allowed to download
 programs. If you are not a member you are allowed
 to view the messages and such things but not
 download files. There is good security. The user
 signs on CompuServe with an ID and a password.
 This information is logged to the SIG the user is
 on so there should be few problems with security.
 The people from CompuServe said it will take 6 to 8
 weeks to get the SIG underway. That time has now
 passed, and we may see action this week (the first
 week of November).

If anyone feels that they have quite a bit of
 software to upload to the SIG and does not want to
 bear the cost then they can contact myself or an
 official of the group and we shall assist. This by
 no means is to replace the OS-9 users group or
 software exchange; it is meant to be an enhancement
 and to educate the nation to OS-9. I would
 appreciate any comments. I can be reached on the
 OS-9 BBS, CompuServe (ID 71625,240) or at home at
 203-621-5925 8070).

P.S. The above is edited from Jim's message
 on the OS-9 BBS. When the OS-9 SIG has been put
 up, it will be noted in the CompuServe sign-on
 banner ... soon we hope. It will also be noted on
 the OS-NINE BBS and on the COCO CompuServe SIG.

Subscription to CompuServe cost only \$20 from
 Radio Shack. You get a free hour of access and a
 similar opportunity for the Dow-Jones News Service
 for the money.

CompuServe Numbers for Officers

Look for the officers on CompuServe using
 these:

Dale Pucker, Pres. 71446,736
 Peter Dibble, V.P. 71426,423
 George Dorner Treas 70536,106

We're just beginners at this, but activity
 should pick up soon.

You can also contact Microware via CompuServe
 EMAIL. Their number is 73105,1265. MW will try to
 read mail and respond at least once a week. They
 will try to answer general inquiries and questions
 but can't handle detailed technical support (use
 the Hotline for this IF you are paid up) nor will
 communications of a commercial nature be carried on
 here.

Treasurer's Report

An account has been established for the OS-9
 Users Group at St. Paul Federal Savings and Loan
 Association of Chicago. Funds from last year's
 treasurer, Terry Straehley, were transferred to
 this account after deposits from the Microware
 meeting in Des Moines. Here's a brief report:

	Debit	Deposit
Opening deposit (4 memberships)		\$ 100.00
Transfer T. Straehley		2173.92
Two memberships		50.00
Microware - P. O. Box	\$ 15.00	
Interest		2.61
Balance as of 11/1/83		\$2311.53

Submitted by George Dorner, Treasurer

Software Exchange

ATTENTION: Much of the software donated in Des
 Moines was not accompanied by the required
 paperwork. Signed forms (especially the "Public
 Domain" statement) are required before the software
 can be distributed.

OS-9 User Group Software Library as of 10/29/83

Title: ACIA.MAPIN By: DIBBLE, PETER
 Language: 6809 Format: SOURCE
 Brief Description: FILTER TO CHANGE CONTROL STRINGS
 FROM A TERMINAL INTO CORRESPONDING ANSI STRINGS.

Title: ACIA.MAPOUT By: DIBBLE, PETER
 Language: 6809 Format: SOURCE
 Brief Description: APPENDAGE FOR THE ACIA DRIVER;
 GETS CONTROL OF INIT, READ, AND WRITE AND PASSES
 THEM THRU ACIA TO THE PHYSICAL DEVICE.

Title: ANSI.GOTOXY By: DIBBLE, PETER
 Language: 6809 Format: SOURCE
 Brief Description: VIDEO TERMINAL DATA MODULE FOR
 ANSI-STANDARD TERM; FOR USE WITH "DYNASTAR" SCREEN
 EDITOR.

Title: ATTR_CHG By: CULP, JERRY
 Language: BASIC09 Format: SOURCE
 Brief Description: "GROUP-CHANGE" OF ATTRIBUTES OF
 ALL FILES IN A SPECIFIED DIRECTORY.

Title: BINCOM By: KREIDER, C. R.
 Language: BASIC09 Format: SOURCE
 Brief Description: COMPARES TWO SPECIFIED FILES

Title: BLANKO By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: BLANKS A COMPLEX DATA STRUCTURE
 TO NULLS

Title: BOOTSPILT By: KREIDER, C. R.
 Language: BASIC09 Format: SOURCE
 Brief Description: SPLITS MERGED OBJECT FILES (SUCH
 AS "OS9BOOT") INTO SEPARATE MODULES.

Title: CHAR_TO_INT_TO_CHAR By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: TWO PROCEDURES TO CONVERT
 BASIC09 STRINGS TO INTEGERS AND VICE-VERSA.

Title: CHECK_FILE By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: DETERMINES FILE STATUS OF
 SPECIFIED INPUT FILE.

Title: DATE_CVT By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: CONVERTS DATE BETWEEN TWO
 FORMATS: MM/DD/YY TO/FROM YYDDD (WHERE "DDD" IS THE
 JULIAN DAY OF YEAR FORM 1-365).

Title: DCOFY By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: FULL DIRECTORY COPY UTILITY

Title: DDIR By: SEATON, W. G.
 Language: 6809 Format: SOURCE
 Brief Description: LISTS ACTIVE SYSTEM DEVICES,
 THEIR PATH DESCRIPTOR ADDRESS, PHYSICAL ADDRESS,
 SYSTEM BUFFER, DEVICE DRIVER & FILE MANAGER

Title: DLIST By: KREIDER, C. R.
 Language: BASIC09 Format: SOURCE
 Brief Description: DISK DUMP UTILITY. WORKS LIKE
 "DUMP /D@", EXCEPT YOU CAN START AT ANY SECTOR ON
 THE DISK.

Title: DOLLAR_PRINT By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: CONVERTS "REAL" AMOUNT (greater
 or equal to 999.99)
 TO "STRING" "DOLLAR" FORMAT.

Title: EQUFIX By: KREIDER, C. R.
 Language: BASIC09 Format: SOURCE
 Brief Description: STRIPS COMMENTS, BLANK LINES,
 AND PSEUDO OPS FROM EQUATE FILES

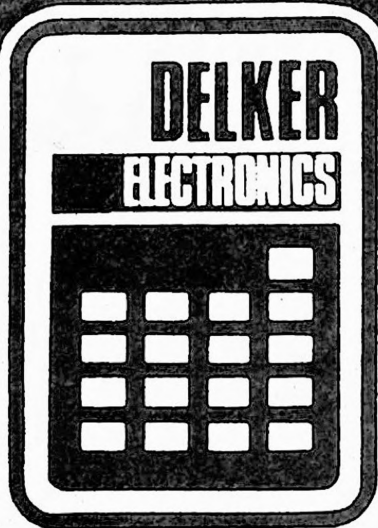
Title: ERREPORT By: CAPOUCH, BRIAN
 Language: BASIC09 Format: SOURCE
 Brief Description: PRINTS MESSAGE ON LINE 2 OF
 TERMINAL, WAITS FOR CNTRL-F ACKNOWLEDGEMENT.

Title: FLEXBIN By: KALEITA, DAVID L.
 Language: BASIC09 Format: SOURCE
 Brief Description: CONVERTS "FLEX-FORMAT"
 (COMPRESSED) BINARY FILES INTO FULL IMAGE (FULL
 SIZE, POSITION-DEPENDENT) BINARY FILES, READY TO
 "ROM".

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26-3029 CoCo Drive 0	\$ 349.95	26-1192 CGP-115 Printer/Plotter	\$ 179.95
26-3023 CoCo Drive 1	\$ 239.95	C. Itoh Banana Serial 50 cps	\$ 249.95
HJL Keyboard (D,E,F)	\$ 79.95	26-3024 RS Multi-Pac Interface	\$ 149.95
Super Pro Keybd. (D,E)	\$ 64.95	Botek Ser/Par Interface	\$ 69.95

ACCESSORIES

RS D.C. Modem IB	\$ 89.95	26-3030 OS-9 (64k)	\$ 64.95 (disk)
Novation J-Cat Modem	\$ 129.95	Basic-09 (req. OS-9)	\$ 87.95 (disk)
RS D.C. Modem II	\$ 179.95	FHL O-Pak (req. OS-9)	\$ 34.95 (disk)
Hayes SM 300 Modem	\$ 239.95	Elite Word	\$ 59.95 (d&c)
CoCo Switcher	\$ 39.95	Elite Calc	\$ 59.95 (d&c)
Elephant Disks ssdd	\$ 22.95	Color Term Plus	\$ 29.95 (cass)

MSI SOFTWARE (Dealer inquiries invited)

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Title: FORMS2.GNX By: MORSE, G.
Language: CIS COBOL Format: SOURCE
Brief Description: STRUCTURED AND MAINTAINABLE 100% REPLACEMENT FOR MICRO FOCUS FORMS2 PACKAGE. INCLUDES FILES FORMS2.GN1 & FORMS2.GN2

Title: GETNUMB By: MORSE, G.
Language: BASIC09 Format: SOURCE
Brief Description: MORE POWERFUL VERSION OF THE BASIC09 "VAL" FUNCTION.

Title: HCOFY By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: PROMPTING "COPY" UTILITY

Title: HDEL By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: PROMPTING "DELETE" UTILITY

Title: HDIR By: CADMUS, RAY
Language: BASIC09 Format: SOURCE
Brief Description: HEIRARCHICAL "DIRECTORY" UTILITY

Title: HELP By: SEATON, W. G.
Language: 6809 Format: SOURCE
Brief Description: PRINTS USER INFORMATION ON THE SPECIFIED FILENAME.

Title: HX By: DIBBLE, PETER
Language: 6809 Format: SOURCE
Brief Description: CONVERTS STANDARD INPUT DATA TO READABLE HEX DUMP FORMAT OUTPUT.

Title: ILEAV By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: PRINTS DISK INTERLEAVE TABLES

Title: INKEY_HAL By: SNYDER, HAL, M.D.
Language: 6809 Format: SOURCE
Brief Description: READ INDIVIDUAL KEY DEPRESSIONS

Title: INSTALL By: KREIDER, C. R.
Language: 6809 Format: SOURCE
Brief Description: USED TO "LINK" A FILE CALLED "OS9BOOT" ON THE SPECIFIED DEVICE. THIS FILE MAY BE PLACED ON THE DEVICE USING A STANDARD "COPY"

Title: JERRYBENCH By: POUMELLE, JERRY / MORSE, G.
Language: BASIC09 Format: SOURCE
Brief Description: 10x10 MATRIX MULTIPLY BENCHMARK

Title: KILL13 By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: STRIPS ALL "\$13" (X-OFF) CHARACTERS FROM A FILE.

Title: KIMTRON By: KALEITA, DAVID L.
Language: 6809 PROCEDURE Format: SOURCE & TEXT
Brief Description: SET OF FILES TO AID IN THE USE OF THE KIMTRON ABM85 TERMINAL WITH OS-9. STARTUP FILE WILL AUTO-PROGRAM FUNCT KEYS. DYNASTAR "GOTOXY" MODULE FOR THIS TERMINAL IS ALSO INCLUDED.

Title: LIST By: MICROWARE SYSTEMS
Language: 6809 Format: OBJECT
Brief Description: LISTS A TEXT FILE AND PRINTS TITLE, PAGE NUMBER, AND DATE (WORKS LIKE THE NEW "PR" UTILITY BY MICROWARE).

Title: LISTN By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: TRIVIAL PROGRAM TO LIST A TEXT FILE WITH EACH LINE PREFIXED BY A LINE NUMBER.

Title: LLOAD By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: UPLOADS A TEXT FILE, ONE LINE AT A TIME, TO A FULL-DUPLEX BULLETIN BOARD SYSTEM.

Title: MODBUILD By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: PROMPTING FILE "MERGE" UTILITY

Title: MODEM By: MacLEAN, D.
Language: 6809 Format: SOURCE
Brief Description: COMMAND TO COPY CHARACTERS TO/FROM SPECIFIED DEVICE.

Title: MODLIST By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: PROMPTING "IDENT" UTILITY

Title: MUSIC By: KALEITA, DAVID L.
Language: BASIC09 Format: SOURCE
Brief Description: AUDIO RECORDING CATALOGING SYS

Title: NETWORK By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: ELECTRONIC CIRCUIT NETWORK DESIGN /ANALYSIS

Title: PRINT By: BIALON, LAURA
Language: BASIC09 Format: SOURCE
Brief Description: FILE PRINTING UTILITY- ADAPTED FROM K&P'S "SOFTWARE TOOLS"

Title: PRINT_MW By: MICROWARE SYSTEMS
Language: 6809 Format: OBJECT
Brief Description: WILL TAB AN ASSEMBLER LISTING WITH PAGE NUMBER, TITLE, AND DATE.

Title: PWD By: DIBBLE, PETER
Language: 6809 Format: SOURCE
Brief Description: MORE POWERFUL VERSION OF MW'S "PWD" COMMAND

Title: PWD_NAME By: CAPOUCH, BRIAN
Language: BASIC09 Format: SOURCE
Brief Description: DOES A "PWD" AND RETURNS THE RESULT (OUTPUT) AS A BASIC09-READABLE STRING VARIABLE.

Title: QDIR By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: PROMPTING VERSION OF THE NEW MW "D" COMMAND (MINUS THE OPTIONS). OUTPUTS A VERTICAL DIRECTORY LISTING.

Title: REHOOK By: SNYDER, HAL, M.D.
Language: BASIC09 Format: SOURCE
Brief Description: MOVES A FILE FROM ONE DIRECTORY TO ANOTHER (ON THE SAME DEVICE) WITHOUT "COPY/DELETE"

Title: REMOTE By: SEATON, W. G.
Language: 6809 Format: SOURCE
Brief Description: "LINKS" USER TO A SPECIFIED REMOTE TERMINAL PATH FOR COMMUNICATION.

Title: RESRATHC By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: PRINTS ALL 1X RESISTOR COMBINATIONS THAT FIT THE SPECIFIED RESISTOR RATIO AND ERROR (TOLERANCE) LIMITS.

Title: SIEVE By: MORSE, G.
Language: BASIC09 Format: SOURCE
Brief Description: SELF-TIMING BENCHMARK

Title: SQSH By: DIBBLE, PETER
Language: 6809 Format: SOURCE
Brief Description: "SQUASHES" TEXT FILES BY REPLACING EVERY CARRIAGE RETURN CHARACTER WITH A "/" AND EVERY STRING OF MORE THAN 1 SPACE WITH 1 SPACE.

Title: STRIPNUM By: KALEITA, DAVID L.
Language: BASIC09 Format: SOURCE
Brief Description: STRIPS A SPECIFIED NUMBER OF CHARACTERS FROM THE BEGINNING OF EACH LINE IN A TEXT FILE; A NEW FILE IS CREATED AS THE OUTPUT.

Title: STRIPREM By: KALEITA, DAVID L.
Language: BASIC09 Format: SOURCE
Brief Description: STRIPS ALL "REM" STATEMENTS OUT OF THE SPECIFIED INPUT FILE (WHICH IS NOT MODIFIED); A NEW "PROCEDURE" IS CREATED AS OUTPUT.

Title: SYSCALL_HAL By: SNYDER, HAL, M.D.
Language: 6809 Format: SOURCE
Brief Description: EXECUTE AN OS-9 SYSTEM CALL FROM BASIC09

Title: TERM_CNTL By: CAPOUCH, BRIAN
Language: BASIC09 Format: SOURCE
Brief Description: PERFORMS SPECIAL TERMINAL CONTROL SEQUENCES.

Title: TEXCOM By: KREIDER, C. R.
Language: BASIC09 Format: SOURCE
Brief Description: COMPARE TWO TEXT FILES A LINE AT A TIME.

Title: TRANSLIT By: BIALON, LAURA
Language: BASIC09 Format: SOURCE
Brief Description: (ADAPTED FROM K&P "SOFTWARE TOOLS")

Title: WORDS By: DIBBLE, PETER
Language: 6809 Format: SOURCE
Brief Description: PARSES INPUT INTO WORDS AND OUTPUTS EACH WORD ON A SEPARATE LINE.

Late Notice

The CompuServe SIG went public December 1. It is on Page PCS-18. A guide to using the OS-9 Special Interest Group (SIG) software on CompuServe has been prepared and is available at no charge from the OS-9 Users Group. To receive a copy of the guide, send a self-addressed, stamped envelope with sufficient postage to cover return mailing costs (two units of first class postage) to:

OS-9 Users Group
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