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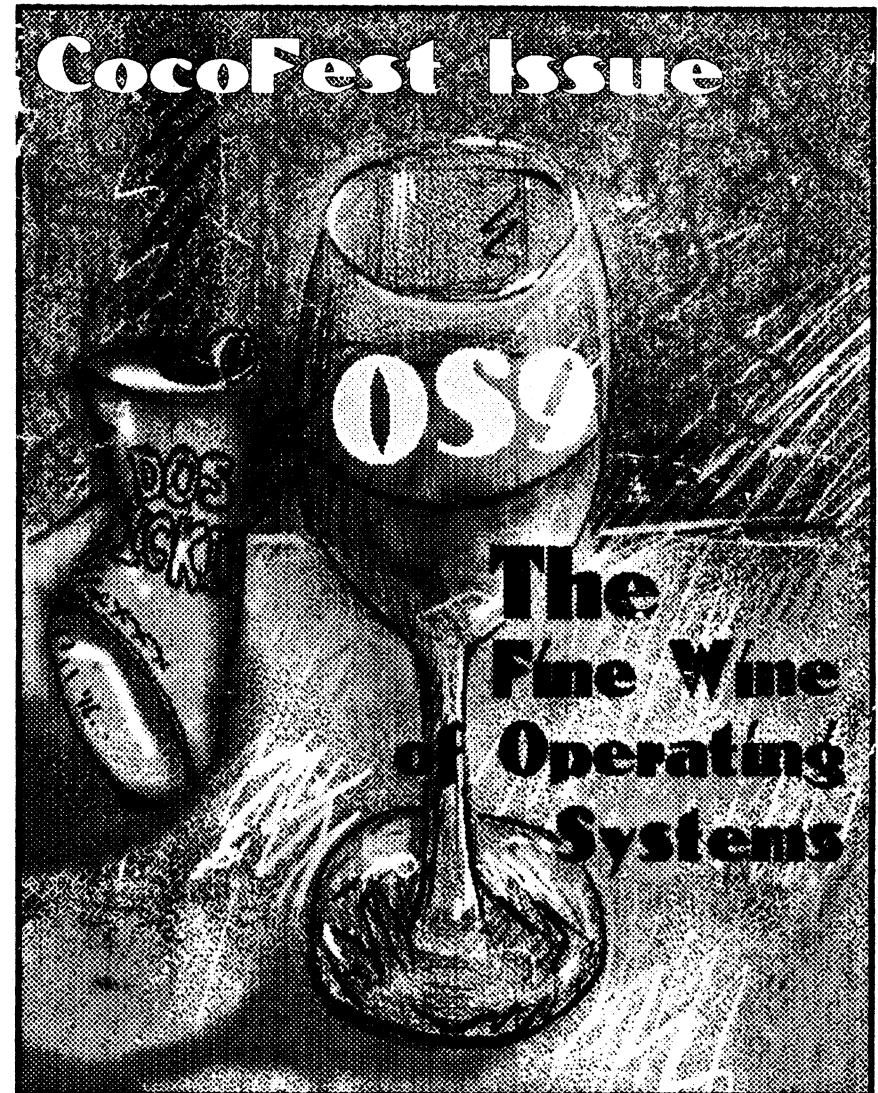
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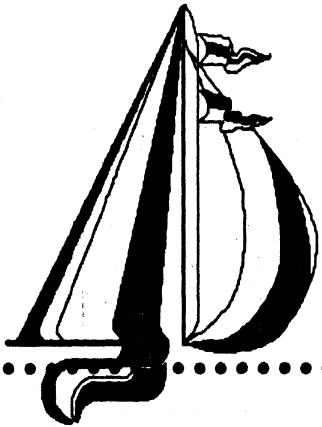
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CocoFest Issue



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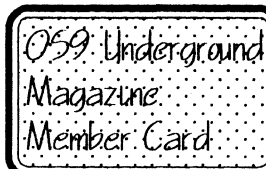
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Shell Game

by Alan Sheltra



Smedley finds that multi-tasking in MSDos requires a little more energy than he bargained for!

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PNW CoCo Fest
Report & Interviews

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The "International" OS9 Underground® Magazine

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Letters
to the
Editor

Don't wana miss a single drop...

(Received from Delphi)

Dear Editor:

I received the issue (Vol 1, Issue 6) the other day. It is quite well done, and I am glad that you have been able to get back on your feet with this. A small complaint, pgs 31 and 32 are missing. Mark Griffith's article on chaining is obviously meant to continue. I noticed now that 17 and 18 are also gone. Please send me the missing page, because I certainly don't want to miss out and what looks like a fine magazine.

With all best wishes, Br. Jeremy

Ooops, sorry about that Br. Jeremy. A new copy was immediately send out to you. Now I know I gotta fire the folding/coalating team! ☺ - Editor

Picky Picky Picky!

(Received from Delphi)

Dear Editor:

I received Issue 6 of the Underground and finally had time to take a look at it. I'd like to compliment you. This issue is much improved over previous issues.

I believe your plan to ask your advertisers to offer subscribers of your magazine a special discount is counter-productive to the OS-9 community. Certainly, it may help you get a few more subscribers but these subscriptions will be subsidized by your participating advertisers. My customers are much too valuable to me to discriminate against them because they may not be subscribers. Any special pricing we offer is available to all. Where we can control the end price, we try to set that as fairly as possible both for our customers and ourselves.

Your review of DataDex did not mention the author, Stephen Carville, nor were your readers informed that the copy you reviewed was provided by DELMAR CO and that they may purchase DataDex from DELMAR CO. Also, your CONTENTS listing failed to include the review. For those who may have missed it, it may be found on page 19.

Some constructive suggestions for further improvement -

Please use one font size for all of your articles. I find your use of various size fonts for different articles and/or sections of an article to be distracting.

The font style you are using to emphasize certain words isn't clear and precludes smooth, easy reading. Specifically, words like 'malloc()', 'calloc()', etc. in Leonard Cassady's article SOFTWARE ENGINEERING and the boxed commands in BASIC TRAINING by Jim Vestal. On the other hand, words like 'forking' and 'chaining' in CHAINING by Mark Griffith were not given special fonts; these were enclosed in quotes, the meaning was quite clear and the entire article was conducive to smooth and easy reading.

There isn't any consistency regarding the use of bars at the top and bottom of each page. In fact, several articles (not code sections) were boxed - was there a special reason?

Not all pages were numbered and I don't think that fancy reversed page numbering is necessary. It's distracting. A simple number in either the lower left or right corner suffices.

It appears that you tried to box the page numbers in your CONTENTS listing. Again, this was distracting - I had to look twice to see if it was a smudge, was I missing anything or what.

Some of the suggestions may be considered nit-picking. But I'm trying to point out problem areas that I think may have a bearing on a reader's perception of the quality of the magazine.

Very truly yours,
Edward Gresick-DELMAR CO

And the envelope please...

The Winner of last month's C Language Declaration Contest is...

Alex A. Yusko

Alex receives a check for \$10.00 for answering all the questions correctly! Congratulations Alex!

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```
int ascend( a, b )
int a, b;
{
    return a > b;
}
```

```
int descend( a, b )
int a, b;
{
    return a < b;
}
```

Returning a pointer to a function is possible with the proper function type cast declaration. A use for this might be where you need to sort many files of data, in various stages of sorted order.

Fat Cat Contest Entry...

Submitted by Phil Scherer, Ft. Lauderdale, FL. Plil's "Fat Cat", "Blimpo" is a Trekkie at heart!



"OOOOOH! Never leave me alone with the Food Replicators like this!" - Blimpo the Cat

Send us a picture of **your** Fat Cat (Dog, Bird, Goldfish, etc.).

COMPLEX DECLARATIONS

The more we use pointers for declarations, the more complex they tend to become, making it difficult to understand exactly what and how it is being declared. To analyze a complex declaration, we must work from the "inside-to-outside". Start with the variable name by itself and then add on each part of the declaration starting with the operators closest to the variable name until all operators and parentheses bindings are exhausted.

It is easy to fall into the trap of making a declaration so complex that declaration errors occur. The best rule of thumb to be guided by is to keep them as simple as possible. To quote one of my mentors, "You will not get very far in programming if you write cryptic and complex code.

Keep it simple."

<EOF>

-Leonard Cassady

Thank you for your comments and observations Ed, I am working out the "bugs" in the magazine as each issue goes by.

I have to clear up one misconception you have regarding the Membership Card. All vendors are welcome to participate in this, not just Underground advertisers. I offer the listing free of charge to any participating vendor. Also, the idea of the Member Card was not to boost subscriptions (after all, only current subscribers were even aware of it at all) but to help the Vendors. I am well aware, that without vendor support this community will suffer, and any help, though small, can be a help.

The Underground does not regulate discounts given by any vendors, to the contrary, the vendor must let me know what discounts he wishes to give.

Now, you may ask, "what does the Underground get out of this?". The Card adds value to an each subscription. The vendor benefits (though incentive advertising), the subscriber benefits by his saving on hardware/software purchases and the Magazine benefits through good will generated (maybe a subscriber will tell a friend to subscribe as a result!). I've always been a fan of win-win situations.

Three items you commented on regarding the formatting have been corrected in this issue, both page numbers and page headers are "more consistent", a uniform type size was used throughout this issue and the use of accenting keywords is now absent. Oh, one more thing, those irritating "boxes" in the TOC have been eliminated (The page number boxes stay, though!).

I do take "nit-picking" seriously! ☺

-Editor

Ooops...

Last month our review of DataDex inadvertently left out the name of the Author and Where you may buy DataDex...

DataDex was written by Stephan Carville (PAGAN on Delphi) and is available from DELMAR Company. Call (302) 378-2555 for pricing.

Last month the Delphi account was listed as "ZOG", but it is actually "ZOGster" or "ZOGster@delphi.com".

-Zog

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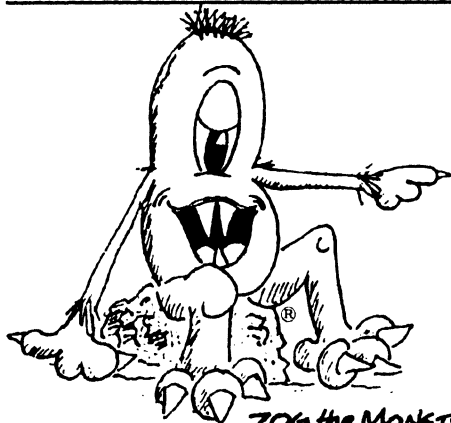
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Under it ALL

ZOG the MONSTER AKA Alan Sheltra

Old CoCo's Never Die...

It's CoCoFest time. And it seems the old CoCo, no matter how old she gets, seems to get more and more attention and notoriety as she matures. While "CoCoFest" is sort of a misnomer, as OS-9 is the majority of what is touted at these events, it does remind us of our roots.

This month the Pacific North West is hosting a Fest in Port Orchard, Washington (June 26-27) with notable personalities as Bob van der Poel (a regular columnist for the Underground), Chris Burke of Burke & Burke who will be taking CoCos where they've never gone before, with a presentation of his "Rocket". Also speaking will be Rodger Alexander, editor of the OS-9 Newsletter and a presentation by Philips Corp. on CDI. It's about time the West had it's own fest!

Donald Zimmerman, who along with Port "O CoCo puts on this fest. Special fest Mugs and TEE-Shirts will be available at very reasonable prices. Only \$25 at the door for tickets to this event. Catch it if you can!

Filling it's shoes...

With "The Rainbow" now gone, the community needs a vehicle of communication now more than ever. ... and many new magazines have been coming out of the woodwork to fill that gap!

Fama System's "68K Journal", JTW Enterprises "Uptime", Mark Griffith's "No-Name-Magazine" (does anyone know if it has a name yet?), Rodger Alexander's "OS-9 Newsletter". The OS-9 User Group's "MOTD" and Glenside's "CoCo¹²³" and Microware's "Pipelines". I'm sure

leaving out some magazines (both paper and disk based), but I'm no encyclopedia!

Support these guys. We need all the support we can get and the further we can spread the word about OS-9 the better off we will be.

C Declaration Contest... ...and the Winner is...

We have a winner! (Just when Leonard thought he had 'em all stumped!) I'll be darn if he didn't get 'em all right, too! This one even stumped a few of our "experts". Turn to Page 37 to see who our winner is.

Fat Cat Contest!

Phil Scherer from Ft. Lauderdale, FL sent us a picture of his "Fat Cat". (That's one rotund feline!) "Blimpo" the cat is on page 36. Thanks Phil! (Phil's subscription will be increased by 3 issues and Blimpo will get a box of diet cat food! ☺)

Send in your Fat Cat Pix...

Check the Oil and Kick the IC's...

Mike Ortloff has joined the Underground staff as it's new technical editor. His column, "The Chip Mechanic" will answer your hardware questions as well as bring forth some interesting hardware projects.

-Alan Sheltra (ZOG)

```
{
extern int count();
int (*delay)();
int factor;
int i = 10;

delay = count;
factor = (****delay)();
}
```

This aspect is due to the fact that a function name by itself is converted to a pointer to the function. Second, the parentheses change the order of evaluation. Each time, 'delay' is dereferenced, it is converted back to a pointer due to the lack of an argument list. The presence of an argument list make the expression a function call. logically, we should be able write the expression as:

```
{
extern int count();
int (*delay)();
int factor;
int i = 10;

delay = count;
factor = (delay)();
}
```

Older compilers might not support this syntax, however the ANSI Standard will. It is recommend for purposes of readability and portability that the:

```
(*delay)();
```

syntax be used.

One common use for pointers to functions is for performing similar operations without duplicating code. A good example would be sorting an array in both ascending and descending order. Why write two separate programs, each to perform the necessary sort criteria, when we could write one to perform both:

```
/* bubsort.h */

extern void bubble_sort();
extern int ascend(), descend();

/* end of sort.h */
```

```
/* start of main */

#include <stdio.h>
#include "bubsort.h"

#ifndef FALSE
#define FALSE 0
#define TRUE 1
#endif

#define LIST_SIZE ( sizeof(list)/
sizeof(list[0]) )

main(argc, argv)
int argc;
char *argv[];
{
static int list[] = { 1, 0, 5, 444, -332, 76
};

if(argv[1][0] == "a")
bubble_sort( list, LIST_SIZE,
ascend );
if(argv[1][0] == "d")
bubble_sort( list, LIST_SIZE,
descend );
else
printf("\nNo sorting order
specified...");

exit(0);
}

void bubble_sort( list, size, compare )
int list[], size;
int (*compare)();
{
int j, k, temp, unsorted = 0, sorted =
FALSE;

While( !sorted )
{
sorted = TRUE;

for( j = 0; j < size - 1; j++ )
if( (*compare)( list[j], list[j + 1]) )
{
temp = list[j];
list[j] = list[j + 1];
list[j + 1] = temp;
unsorted = 1;
}
}
}

/* end of main */
```

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type cast should be 'void'. If your compiler doesn't support a 'void' type cast, defining a preprocessor macro that changes a 'void' type cast to an 'int' type cast will work.

```
IE: #define void int
```

This allows upward mobility, as well as aiding in readability. If you change compilers to one that supports the 'void' type cast, simply remove the preprocessor definition.

Call - Invokes the function. program execution jumps to the invoked function. Upon return from the function, program execution resumes at the next instruction. A function call is an expression, and may appear anywhere an expression may appear. Unless declared as returning a 'void' type cast, The return value is always substituted for the function call.

Allusion - Declares the function is defined elsewhere and what kind of value the function returns. This allows compiler type-checking without actually having the body of the function present in the program. By default, all functions are assumed to return an 'int' type cast. You really only need to include function allusions for functions that DO NOT return an 'int' type cast. For readability and maintainance, it is a good idea to include allusions for all functions called in this manner. If you omit the storage class, it defaults to 'extern'. The only other legal storage class is 'static', indicating that the function body is included in the same source file.

Note: The ANSI prototype feature allows specification of the number and types of arguments in the allusion.

POINTERS TO FUNCTIONS

Declaring and invoking functions is very similar to declaring and referencing arrays. It is important to remember when assigning values to function pointers, the type casts MUST be the same. Most compilers will produce an error, however, others will silently convert the return type to an 'int' type cast, possibly causing

erroneous results and make debugging a very frustrating task.

Entering a function name by itself obtains a pointer to the function. When followed by a list of arguments enclosed in parentheses, the pointer is 'dereferenced' or called. To declare a 'variable pointer' to a function, the pointer name must begin with an asterisk.

```
{
  extern int count();
  int (*delay)();

  delay = count;
}
```

The previous example assigns the pointer to the function, 'count', to the variable, 'delay'.

If you include the parentheses, this becomes a 'function call', which should produce a compiler error as you are attempting to assign the returned value of 'count()' to a pointer variable.

```
{
  extern int count();
  int (*delay)();

  delay = count();
  /* illegal assignment - int to a pointer */
}
```

To call a function using a pointer, the same syntax is used except you include the parentheses. Additionally, arguments may be used.

```
{
  extern int count();
  int (*delay)();
  int factor;
  int i = 10;

  delay = count;
  factor = (*delay)(i);
}
```

One of the oddities when dereferencing a pointer to a function is that it does not matter how many asterisks or dereference operators you use.

The following is the same as the preceding example.

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CHICAGO COCOFEST REPORT

The 1993 2nd Annual "Last" CoCoFest

by Allen Huffmann

"Just when it looked like there would be no more 'Fests,' started my 1992 'Last' Fest report, and here I am, several Fests later, writing 'yet another' Fest report. I want everyone out there who is still a loyal CoCo user to take a moment and pat yourself on the back. Thanks to the support of OUR loving community, WE ARE STILL HERE...

Thanks to this same support I drove over 2000 miles to be a part of all of this. Here is my story. THE DRIVE Last year Sub-Etha flew because we didn't feel like making an "800 mile" road trip. Due to lack of funds, myself and founding partner Terry Todd (back temporarily from installing satellite dishes) decided to give my Honda a workout on a drive that turned out to be OVER 1000 miles long. Two hours sleep Wednesday, then a full day (10am-8pm) of work for me Thursday. I certainly wasn't rested. Home Thursday night I decided to pack all my clothes and gear.

I certainly wasn't prepared. Terry would be coming back from somewhere-near-Dallas and I would be driving to his house (some 15 miles away) to pick him and his gear up. I certainly wasn't looking forward to all this

driving. I packed, and we embarked on our "leave at 10:30pm journey" at about 1:30am. No worries. Gas cards in hand and about \$100 in cash and we were ready to go. Luckily, Terry had a map-atlas. (I had my official "Fest Map" with me, complete with routes to Atlanta and Des Moines highlighted...Chicago would be new and exciting since neither of us knew exactly how we would be getting there...) And so we drove, and drove, and drove, allowing sodas and Vivarin's to help us along the way. It was a long, uneventful night, and Jolt cola was nowhere to be found. A plethora of radio stations made the drive a bit more bearable. (We heard about 8 different Pink Floyd songs along the way...Classic Rock is much more abundant going to Chicago than it was going to Atlanta or Des Moines...) Sometime Friday afternoon we stopped for burgers somewhere, but I really don't know where. (Did I mention we were tired?) I even DID find some Jolt, though it turned out to be bad. So...more uneventful driving. EVENTUALLY we were in Illinois and got to find Elgin. We wandered through Chicago (lost) and were "pulled over" by a man in a white van. "You guys lost?" he asked. He ended up being very nice and gave us instructions on how to get out of this "bad part of town" we were about to stop in. Thanks, whoever you were!

The people in Chicago are so nice! Of course, that was before the tollways. From my experiences with tollways in Iowa, I don't like them. For those who haven't had the pleasure of experiencing them, tollways are great ways to collect money from overtired travelers who didn't realize that once you got on one, you have to keep paying over and over and over. 40 cents here...25 cents there...large diesel there. Large diesel? We were driving and trying to get over

C Software Engineering

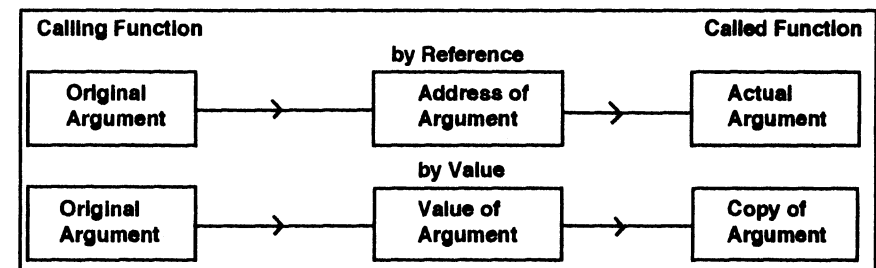
by Leonard Cassady

FUNCTIONS

The first step to developing a program is to clearly define the program task. Then divide the program task into a set of smaller, more manageable routines, and design "algorithms" to solve them.

Most high-level languages pass arguments "by reference", meaning they pass a pointer, the address, to the argument. The called function can actually change the value of the received argument. The C Language has the very powerful ability to pass arguments to functions "by value".

Meaning the called function receives a copy of the argument and may change the copy's value, but cannot change the value of the original argument.



For the function to change the value of the original argument, you must pass a pointer to the argument then make the assignment through the use of a dereference pointer, the contents of the address. This explains the 'address of operator' used the 'scanf()' function. There would be no way to make assignments to variables passing by value.

ANATOMY OF PROGRAM FUNCTIONS

"main()"

The C language requires at least one function in the program. The 'main()' function is mandatory to all programs as it is the first function executed. When 'main()' execution is completed, the program ends. The host environment is responsible for passing two arguments to 'main()'. These arguments are called 'argc', which is an 'int' type cast, and 'argv', which is an 'array of pointers to char' to the command line arguments. By convention, the compiler expects these arguments to be called by these names. It should be noted that 'argv' is passed to the program as 'arrays of char' or strings. To make use of them as any other type cast, you must explicitly convert them using the standard library functions or your own custom functions.

DECLARATIONS AND CALLS

All function calls should occur within the confines of 'main()', although the actual body of the function resides outside the 'main()' function. While it is possible, and often done, to make a function call from within another function body, this practice makes for poor readability and can make program maintenance difficult.

Function calls can take three forms:

Definition - Defines what the function does and the number/type of the arguments. Return type cast defaults to 'int' unless specifically defined. If the function doesn't return any value, the return

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maybe, just maybe, a PT-series machine. At any rate, I need some input here.

Finding the LCD display was easy, a nice 320 x 200 resolution device is readily available. Swapping out most of the motherboard MOS and TTL with CMOS equivalents isn't presenting a problem either. Since acquiring a Howard Medical Slot-Pak 3 (the device necessary to provide buffering on the system bus of the CoCo 2), I have the ability to run multiple ports on the machine, though I think I may as well install a wired-in parallel port, a serial on-board hack and affix the disk controller to the motherboard too. So, given I can manage the mundane aspects of construction, the case design becomes the next-most difficult element, I'd sure like to hear some ideas from our readers as to particulars (new case entirely, built from scratch or hack an existing Color Computer 1 or 2 case maybe?).

As I said, I understand the CONCEPTS behind OS-9 far better than I do the nitty-gritty parts, like writing I/O drivers and such. At least, in this case, since I'm talking about a L1 machine, we ought to be able to hack existing serial drivers and stick them in place of video I/O, yes? The LCD device I referred to previously is indeed serial, with a control language all its own for graphics, etc. I'd use the information supplied in the same Rainbow article that dealt with parallel/serial port construction, to write the appropriate drivers for those ports...

Dealing with OS-9 as I am, and OS-9 being ROMable right out of the box, I could place a substantial portion of the OS right into the space formerly occupied by the old DECB ROMs, freeing up RAM and eliminating the need for actual boot-up. Since there were banked-RAM as well as magnetic-bubble memory kits that extended early Color Computers beyond the 64 kilobyte limits of direct addressing, and, since the techniques used to achieve such expansion are well document and now-cheap to implement, I may contemplate tossing in a quarter-meg of extra RAM using ROM-based banking drivers (or at the very least, a half-meg battery-backed RAMdisk).

Being L1, no need to muck about with a hard drive, yet. Even the best floppy drives need some substantial current, though my measurements show that the 12v side has near zero quiescent-state current drain, so I figure a fairly light gel cell could provide one to three hours of operation... perhaps more if a clever OS9 hacker could make use of the 6309 sleep mode (I wonder as well, do other

Hitachi chips incorporate this sleep mode?) and set up the LCD driver to shut down the display after some predetermined time period. I was REALLY impressed with Roger Kottkes' on-board A/D converter, he created for the CoCo 3 to allow the use of the mouse while freeing up the joystick and cassette ports. Unless I miss my guess, this could be employed in the CoCo2 as well, under L1, to perhaps allow for a simple GUI using the old 52-column screen drivers. Maybe I could dig up a trackball, or fashion a cursor control device based around the guts from a Nintendo control pad. Anything's possible under OS-9!!

Since I plan to get my codeless Technician-class amateur radio license during the next couple of months, my dream is to use this L1 laptop in conjunction with a simple crystal-based 144 mhz transceiver, to access packet radio services portably... from my motorcycle in the mountains of our local forest preserves here in LA. As well, knowing I have friends on the StG Net in Florida who're also Tech-class hams, we could well establish a packet-radio OS9 mini-net, accessible by anyone with the license and hardware, and almost as fast as the Internet. I really love having a reason to commingle hobbies (lifestyles?) like this!

So, anyway, the ball's in your court, good readers, I await your letters on the Internet, Delphi, Fido or plain ol' US Mail, and until next time...

Don't forget to torque yer chips!!!

-Mike Ortloff

@1:102/851

...abodelzog!boobie

boobie@mcws.fidonet.org



The "International" OS9 Underground® Magazine

to the lane we needed in.

I harmlessly moved into a lane in front of a large (are there small ones?) 18-wheeler. Traffic stopped, and so did I. We were amazed when a rather noticeable "bump" hit us from behind. The truck was pushing us. Bump, bump. "What the @\$% is he doing!?" I asked, calmly. Bump. Push. Whether he was having problems or not, I could not tell. Push. Bump. The large grille that I saw through my little Honda's rear window was NOT a friendly sight! Bump. Suddenly we were being pushed into the car in front of us. I knew we were going to be CRUSHED by this truck. Wedged in, I did my best to get into the next lane and GET OUT OF THERE! We got his license plate number but I was too terrified at this whole event to do anything about it. Gosh! These truck drivers in Chicago are so dangerous! (This was one of the most terrifying things I have ever had happen to me!) For the record, though, no damage was done. The truck had a large metal plate on front of it, almost as if he had it designed just to push little import cars around on the tollways. I hope I never "run into" him again. So...we were close.

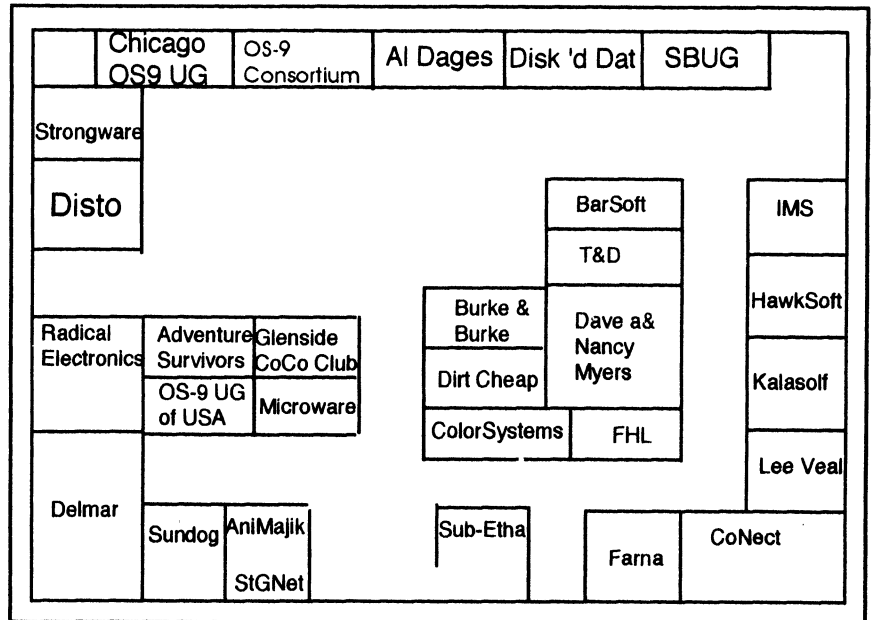
A few exits and we passed a carnival, Ramada Inn, and found ourselves at the Holiday Inn where the Fest was to be held. Looking

very rough and visibly shaken, I parked.

We checked in then we went to look around.

THE ARRIVAL & PRE-SHOW

I don't remember the time, but I'm sure it was about 7pm or so. The hotel looked VERY nice. A large indoor pool, whirlpool, weight room, ping pong/pool/foosball tables, and a small game room were in the center. Neat. Someone recognized us. I think it was Carl Boll whom we first spoke with but I was a bit incoherent after the 16 hour drive. We wandered and found our room (completely on the other side of the hotel, as usual...). We unpacked, and I decided to bath and shave (both badly needed...ask anyone). Feeling much better, it was time to explore! Joel Hegberg (Sub-Etha OSK Midwest Divisional Manager) and gang was there! Many familiar faces - Scott Griepentrog, Paul Jerkatis, Lee Veal, Carl Boll, Al Dages, plus dozens of others I won't include at this time due to forgetting who all was there. A few Canadians (Brian White and Alan Dekok, among others) even found me. Just look at who all is here, and the show is still a day away! Someone showed me to the convention room... I was speechless.



THE SHOW AREA The room was setup as follows...well, actually this is going to be tough. The room was so big and had so many vendors that even the map in the Fest guide was a pull out "centerfold" of two pages to get it all on. I will do my best, though.

Sorry, that's the best I can do to make it fit and keep the proportions as least close to how they really were. Note that there are some differences in my map versus the show guide since some booths ended up a little different than the guide. (XXXX's mark tables. Skirted, but no backdrops.) Anyway, there were no half-booths at this show! SBUG, Disks 'n Dat, The International OS-9 Consortium, and Sub-Etha Software all held multiple-booth spaces. This was one big show, folks! The vendors were as follows: Al Dages - There to show support for this event, Al (Atlanta Computer Society) was present with "previously owned" hard/software, rom-paks, power supplies, etc. Al furthers attempts to keep hardware and software from passing out of existence. Thanks Al! (Note: Al was also there to see if there was enough interest to justify ACS sponsoring another Atlanta CoCoFest this year.) Adventure Survivors - These shows just aren't as warm without this couple. For those who don't know, a monthly adventure newsletter is available with hints, tips, walkthroughs, solutions, maps, etc, for many CoCo adventure games. They also sell several classic adventures and sold graphic adventures based on the past (and current - how'd they manage that?) CoCoFests. Neat stuff, and fun folks! AniMajik Productions - Not present, but a letter from Alan Sheltra explaining what has been happening with The OS-9 Underground Magazine was there. BARSoft - Dave Barnes was there with various software titles and bits of hardware. Yet another vendor helping take up the slack. (Plus someone had to buy the drinks!) Burke & Burke - Okay...here we go. Chris Burke was there. Apparently Mrs. Burke was at home watching a pet. Her presence was missed. Also, the presence of Chris' CoCo w/direct hookup hard drive was missed but he more than made up for it with goodies like: PowerBoost 2.0 which patches OS-9 to run in NATIVE MODE on a 6309 chip. I picked up my copy and let me say that from initial checking it's a VERY NOTICEABLE speed improvement! Also, the Thexder/OS-9 converter was there which moves Thexder to OS-9 and runs just like the rom-pak! Amazing. The conversion was done by Alan Dekok (aka, Mr. Ball Demo) of Canada. Enhanced 512-byte SCSI drivers were available and other classic Burke goodies like Repack, XT-ROM, RSB, etc. Of SPECIAL INTEREST was an amazing "new" (though designed long ago) product prototype called The Rocket. The

Rocket is a small board containing a 68000-type CPU and memory which plugs into the CoCo where the 6809 goes and turns the CoCo into a true OSK machine using the CoCo's hardware and I/O. The unit is set to sell for just under \$200 and will be made if enough interest is shown. Folks, this 14mhz "update" might be just the way for us to get into OSK without spending \$1000. Needless to say, the Burke booth was one of the most talked about at the entire show. (Chris sold out of PowerBoost software again and had to buy disks and photocopy manuals at the show for the second day...!) Chicago Area OS-9 Users Group - Promising "big plans" in the future, this club was there to show their support. It's this type of attitude that helps us survive! ColorSystems - Solitaire for the MM/1, a word-processor shell for the CoCo and games. And, best of all, BUMPER STICKERS reading "I <Heart> my CoCo", "I <Heart> me MM/1", "OS-9 Users Group", etc. NEAT STUFF! "CoCo Classic" and "Friends Don't Let Friends Use MS-DOS" buttons were also there at great prices. CoNect - Rick Uland's RS-232 pak replacement was nice. Dual port version? Sure...but what was this other thing they were talking about? Do my eyes deceive me when I see a 232 pak capable of over 5000 CPS under OS-9? Say hello to the next generation of 232 paks coming "soon" from CoNect which will make 14.4 v.42bis modems an "easy reality" for the CoCo. It is set to sell for about \$130, I believe. This received much talk and attention as well! According to the spec sheet 5300cps on this new pak is only slightly more CPU intensive than 900cps using SACIA and a normal 232 pak. Amazing! Cook County CoCo Club - Fest T-Shirts on blue designed by Nancy Myers. Nice and only \$8 (\$5 near close of show). CCCC took care of ticket sales and worked closely with Glenside during this event. Dave & Nancy Myers - While "CoCoPro!" is no more, Dave and Nancy were there to show support, have fun, and sell down (and in some cases give away!) old bits of software and hardware they still had. I was touched to see them there. Dave (in my opinion) is very much responsible for non-Rainbow supported Fests being possible. Thanks, Dave. It means a lot to us. Dave and Nancy are going to be moving, but it is rumored we shall see them again at future Fests. I sure hope so. Delmar - Remember Ed Gresick? He had a PC running OS-9000, and his System IV VGA OSK machines running G-Windows. His red foam rubber hammers were ALL over the 'Fest show. (At one point, the Kala Soft guys



"THE CHIP MECHANIC"

Most of my life I've made my living in the metals trades, as auto/motorcycle mechanic, apprentice toolmaker, welder and machinist. Thus the name of the column, the Chip Mechanic. For, as you see, there is a common denominator between my trades and hobbies, to wit, ya gotta ask the questions if ya expect to learn anything, and, the best solution to most technical problems is usually the obvious one.

Now, it is upon these two philosophies I plan to base my articles, responses to reader questions, and challenges. I admit I don't know everything, reader corrections will be published (edited for space of course), I'd love to see readers submit suggestions for articles (I have the "spare" time necessary for the research) and I'll not refuse advice from any of the OS9-OSK guru community (if its polite, I'll probably publish it as well)

I have access to Delphi, the Internet, FIDO and StG, as well as WWIVNet, IceNet and a few others if I need to. I intend to employ these resources in seeking answers to reader inquiries, as well as sparking ideas for new articles. Note, I WILL give all credit where due, I would rather have the brains of the OS-9 world accessible, than worry about my own ego.

OK, with the statement of purpose and introduction out of the way, on to this issues' admittedly brief technical article.

A Portable OS-9 Box

Much discussion has gone on up on various computer networks over the last couple of years on the subject of constructing a truly laptop OS9 box. Since discovering the remarkable features of the 6309 last year, I have sought for the parts necessary to build such a beast.

A Level One box, using one of my CoCo 2s which already has a built-in audioamp is my first choice, part for simplicity, part because I understand the machines' inner workings well. Working with an "expendable" Color Computer

Two will give me the practice I need to move up to a self-contained Level Two, and

This article marks the debut of the Chip Mechanic here at the Underground. My name, if you hadn't noticed it in the byline, is Mike Ortloff, your technical editor pro tem. Unlike my worthy predecessor Paul Pollock, my technical expertise is admittedly limited. I have repaired plenty of Color Computers, a few MSDOS boxes, an Apple][or three, and more VCRs than I care to count. As well, over the years I've built a few dozen semi-custom circuits, from schematics in Forest Mimms' books, among others, and performed upgrade work of various kinds on a few 8-bit machines. I've been involved to varying degrees, in computers and electronics since my first CK722-based thermo-electric-powered AM radio I built at 9... over two decades ago (ugh!)

I also helped bring up the first 6309 CoCo in Los Angeles.

Yet, I've never made a living in electronics service, engineering or design. While not earning any substantial amount off what amounts to my lifelong hobby, I HAVE taken several years of high-school electronics, followed by vocational school and a couple semesters at a JC boning up on theory, and I married a REAL computer technician.

As far as programming, again, no income off it to speak of, but I wrote s/w to generate tables of machine-tool settings, on my old Color Computer 1 back in '85. I wrote a fullscreen editor, under Color Computer Disk Extended Color BASIC, that edited and generated EMCO-CNC machine tool sourcecode, and, lately, ported a couple of old DECB games to Basic09. A recent project has been to cross assemble code from a 6809 onto an old Elf-CosMac, in the hopes I could someday link the two in a master-slave configuration for use in amateur radio.

```

for(l=0;){
  doline(l,menupage[t].choices[],maxlen,1);
  fflush(stdout);
  read(0,&c,1);
  doline(l,menupage[t].choices[],maxlen,0);
  switch (tolower(c)){
    case 0x1b: /* esc */
      goto exit;
    case '\n':
      p=menupage[t].cmdlines[l];
      if(*p=='#') domenu(p+1);
      else {
        restermi();
        clrscrn();
        fflush(stdout);
        system(p);
        settermi();
        printf("\nPress key for menu");
        fflush(stdout);
        read(0,&c,1);
      }
      goto loop;
    case ':':
    case 'u':
    case 0x10:
      if(l) l--;
      else l=menupage[t].numlines-1;
      break;
    case '=':
    case '+':
    case 'd':
    case 0x0e:
      if(l<menupage[t].numlines-1) l++;
      else l=0;
      break;
  }
}
exit;
}

```

This routine takes care of actually displaying a line of the menu. If "mode" is non-zero we print the line in reverse video. If reverse video is not available, we highlight the line by printing a ">" and "<" at the start and end of the line.

```

doline(line,text,fieldsize,mode)
int line;
char *text;
int fieldsize,mode;
{
  char prec[20];
  int xstart=(ncolumns/2)-(fieldsize/2);
  int ystart=line+2;

```

Notice how we build a format string here so that the menu line will be printed with space padding. This forces the entire line to be printed in normal or reverse video. If we didn't do this the highlight would only extend to the end of the text.

```

sprintf(prec,"%%-%ds",fieldsize);
if(!standout){
  gotoxy(xstart-2,ystart);
  printf("%c",mode ? '>' : ' ');
}
gotoxy(xstart,ystart);
if(mode && standout) revon();
printf(prec,text);
if(mode && standout) revoff();
if(!standout){
  gotoxy(xstart+fieldsize,ystart);
  printf("%c",mode ? '<' : ' ');
}
}

```

Well, that it. It's taken awhile, but you now have the complete program. I've supplied the editor with the complete source listing for menu, so you can get it on the "Underground-on-Disk" Or, send me \$7.00 and I'll send it to you on a disk (please specify preferred size and format).

Next month—new exiting 68K topics. Stay tuned. As always, your comments and suggestions are welcome. You can contact me at PO Box 355, Porthill, ID 83853 or PO Box 57, Wynndel, BC, Canada V0B 2N0 or Compuserve 76510,2203.

-Bob van der Poel

<EOF>



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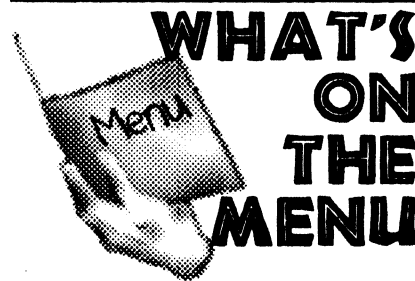
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performed a nice "drum solo" by beating on the Yamaha keyboard at their booth with Ed's mighty hammers.) Delmar, being one of the strong OSK hardware vendors, seemed to get much attention. Ed mentioned that the user-base for G-Windows was around 1000 or so which might make it a good platform to start developing on... (If we can get a system to Joel, he has expressed interest in porting some of our K-Windows products to G-Windows.) Disk 'n Dat - A local vendor was there with EVERYTHING. Labels, disks, cases, ribbons, cables, etc, etc, etc. This was the NEATEST collection of goodies. They even had transfer paper for ironing on printouts to shirts. It was nice to see non-CoCo specific vendors interested in participating. Disto - Tony Distefano was there with various working and non-working leftovers from the days of CRC/Disto products. Let's see... what else? Hmmmm. Oh yeah, there were 2 meg upgrade boards there. No big deal. Two small circuit boards. One plugs in on top or in place of the 6809, then the 6809 goes on it. Connect two wires and then plug the second board with the 2 meg SIMMS on it into where the 512K board goes, jumper across a resistor, install some software patches and 2 MEGS is yours. How can this man act so casual about something this NEAT? Selling for less than \$100 for the 0K board, Tony sold out the first day. He only brought 15 (he had at least double that back home) and he seemed to be kicking himself the entire show, amazed at response to his "no big deal" device. While "officially" Tony is out of the CoCo market, he apparently knew how to do this and decided to give our market another chance to make it worth his while. I hope it has been! Also, his "Full Turn of the Screw" books were there including many of the hardware projects he designed over the years for the CoCo. It was very nice to FINALLY meet this legend in our community. Farna Systems - Officially there showing the Patch09 disk and OS-9 Quick Reference Guide, Frank Swygert sold copies of his newly completed "Tandy's Little Wonder" book which was PACKED with more complete information about the CoCo's history than I had ever seen compiled. It listed common hacks and upgrades, and Frank even got permission to include several schematics in the book! (He claims that feat was done simply by sending in a certified letter of request to the head-guy at Tandy...I was impressed!) Also, what is probably the world's only tic-tac-toe game that requires 512K was shown. From

Australia, it was an AMAZING looking game with FULL DIGITAL SOUND and SPEECH with great graphics. "Crossroads II" was, I think, \$12. The computer didn't play that well, but it was nice to look at! Of special importance is Frank's efforts to publish "the world of 68 micros", a new publication designed to take up where Rainbow left off. Columnists like Marty Goodman, Joel Hegberg, and various others will be on-staff. Let's support this. It looks good, and Frank (being in the military) is pretty much locked into doing it... With a slant planned of 70% RS-DOS, it might make the perfect compliment to OS-9 Underground. Frank Hogg Laboratories - Frank didn't make it, but he sent a rep down with his Kix/20 OSK "tower". It looked great, but wasn't doing much other than running a terminal. The specs of this device sound amazing. Imagine a graphics card capable of displaying an 8-bit color image in 1/40ths of a second. FULL SPEED. Faster than what current CPUs are capable so it's graphics won't be a bottleneck like VGA cards are on the PCs. Of special interest was the Kix's capability to hook multiple graphics cards into it. Each one could have it's own monitor, mouse, and keyboard so you could run four dedicated graphics terminals off of one box. Now THAT sounds interesting! Hopefully, the graphics boards will be on display at the next Atlanta CoCoFest. Glenside CoCo Club of Illinois - Mugs, buttons, and newsletters. This group made it all happen. They had lots of neat stuff...and their still-evolving OS-9 based point of sale system (CoCo with terminals, of course) seemed to keep track of all their activity. Thanks, gang, for inviting us all back! Of special interest on Sunday was Tony Podraza's PA announcement about Bob Rosen's original old CoCo 1. They had it. It was an old grey case CoCo 1 with a Model 3 keyboard (with numeric keypad) and a series of switches that controlled power, reset, and the cartridge interrupt (for inserting rom-paks with the power on to make them not autostart...). Inside was a 300 baud modem (Modem I it looked like) with the on/off and ans/org switches coming through. Also, a series of color LEDs indicated volume level of the cassette port. It was really neat! Built-in lowercase (with a switch) too. Tony talked about a possible auction and I suggested that Lee Veal outta buy it to go with his other prize CoCo. Seeing this machine "in person" made me realize just how big and great our community once was, and made me marvel at how well we have hung together over the years. HawkSoft - Chris Hawks, designer of the Slot



Building a Termcap Library Part VI

by Bob van der Poel

Well, this is it. The final installment of our menu program. In previous sections we've discussed using the *termcap library and shown you the code for accessing the *termcap functions. We've also covered the routines which read the menu data file and some miscellaneous functions. This month it's time for the routines which display the menu and let the user make a choice.

FILE: domenu.c

```
#include "menu.h"
```

This section of code starts off by displaying a page of a menu. The first time it is called, from main(), the menu name is "main". If the user selects a new menu page, then domenu() is called recursively.

```
domenu(name)
char *name;
{
    register int t,l,maxlen;
    char c;
    register char *p;
```

Here we loop though the various menu pages looking for the menu page name. If we don't find it, we terminate the program. Note that the menu names are case sensitive! (We could change that by using strucmp() instead of strcmp()).

```
for(t=0;t<numpages;t++){
    if(strcmp(name,menupage[t].pagename)==0)
        break;
}
if(t==numpages)
    terminate("Unknown menu page");
```

This loop finds the longest menu line for this page. This lets us center the menu on the screen.

```
for(l=maxlen=0;l<menupage[t].numlines;l++){
    if((menupage[t].choicelen[l]>maxlen)
        maxlen=menupage[t].choicelen[l]);
}
maxlen+=2;
```

Next we display the menu title and the option lines.

```
loop:
clrscrn();
gotoxy((ncolumns/2)-
    (menupage[t].titlelen/2),0);
printf("%s",menupage[t].title);

for(l=0;l<menupage[t].numlines;l++){
    doline(l,menupage[t].choices[l],maxlen,0);
}
```

At this point, the menu is on the screen. Now we just loop and process the user options. The highlight bar can be moved up by pressing <u>, <+>, <-> or the <up arrow>. It can be moved down with <d>, <-> or <down arrow>. Well, sort of. The arrow keys on different terminals generate different values. On my MM/1, they generate a \$10 and \$0E. However, many terminals generate multi-key values (eg. \$1B \$xx \$xx). So, we've included a number of different choices in the switch statement. It's easy to do with stacked case lines.

When the <ESC> key is pressed, the menu program is terminated.

When <ENTER> is pressed the specified command is passed on to a shell. Note how a check is done on the first character of the command: if it is a "#" then we display a new menu page.

Tell them you saw it in the "International" OS9 Underground...

The "International" OS9 Underground® Magazine

```
(* Background Red
IF Color_Code=4 THEN
OS9.Code:=$04
ENDIF

(* Background Yellow
IF Color_Code=5 THEN
OS9.Code:=$05
ENDIF

(* Background Magenta
IF Color_Code=6 THEN
OS9.Code:=$06
ENDIF

(* Background Cyan
IF Color_Code=7 THEN
OS9.Code:=$07
ENDIF

(* ForeGround Colors
IF Color_Code=8 AND Color_Code<=15 THEN
(* Set Function Code
OS9.Function:=$32

(* Foreground White
IF Color_Code=8 THEN
OS9.Code:=$00
ENDIF

(* Foreground Blue
IF Color_Code=9 THEN
OS9.Code:=$01
ENDIF

(* Foreground Black
IF Color_Code=10 THEN
OS9.Code:=$02
ENDIF

(* Foreground Green
IF Color_Code=11 THEN
OS9.Code:=$03
ENDIF

(* Foreground Red
IF Color_Code=12 THEN
OS9.Code:=$04
ENDIF

(* Foreground Yellow
IF Color_Code=13 THEN
OS9.Code:=$05
ENDIF

(* Foreground Magenta
IF Color_Code=14 THEN
OS9.Code:=$06
ENDIF

(* Foreground Cyan
IF Color_Code=15 THEN
OS9.Code:=$07
ENDIF
ENDIF
```

```
(* Reset
(* Default ForeGround = White
(* Default Background = Black
IF Color_Code=16 THEN
```

```
(* Set ForeGround
OS9.Function:=$32
OS9.Code:=$00
PUT #1,OS9
```

```
(* Set BackGround
OS9.Function:=$33
OS9.Code:=$02
ENDIF
PUT #1,OS9
10 END
```

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Pak and various other gadgets, was there with his robe full of name badges. A new version of Icon-Basic for OSK was there (program with pictures, basically) and a new SOUND editor for the MM/1. Keyboard extension cables, dual hi/low-res joystick adapters for the CoCo, and so much more. Rumors of the "next generation" Icon Basic program with a context-sensitive point-n-click interface were circulated. Interactive Media Systems - Paul Ward was nowhere to be found, but a rep was there running MM/1 demos and handing out updates on IMS. IMS is not dead, they claim, and several new configurations of the MM/1 will be available soon. Good news to those still on the waiting list, and those like myself who want an MM/1 more badly now than ever. One interesting demo was when Brian White from Canada showed off a networked game called Assassin. It put the player in a 3-D "real world" view of a dungeon as you walked around and battled other creatures. FULL STEREO SOUND! You would hear footsteps off in the distance, etc. The best thing was you could like multiple MM/1s (and even Amigas, and soon other computer platforms as well) together to play! 16 MM/1s could be linked all battling each other, or over modems or whatever! TRULY amazing and one of the most interesting things I have seen. I hope we hear more about this soon. (It is a pity we didn't get around to linking up all the MM/1s at the show, as was discussed...) Kala Software - MIDI MIDI MIDI! An upgrade to UltiMuse for CoCo OS-9 was there, and LOTSA music files for both the CoCo and MM/1 version of this notation sequencer. They played tons of tunes through their keyboard setup and kept us entertained the entire show with Led Zeppelin, Beatles, and various other classics. Dirt Cheap Computer Stuff Company - Mark Griffith was there casually showing off various MM/1 goodies. Totally automated offline readers for Delphi and CompuServe that ran under CoCo OS-9 or OSK was being displayed. It would dial in, log on, then capture mail and messages allowing you to read and reply to them offline, saving both online time and money. These applications might make using Delphi or CompuServe a more feasible reality for those of us who have to dial long distance for access. (It is rumored that a GENie version of IX - Information eXchange - 'might' be possible.) OS-9 Users Group, USA - Jim Destefano and others were on-hand with membership applications, sample MOTD newsletters, and library disks. I strongly urge any OS-

9 user to sign up. Some major things are in the works and we all need to help out. Overseas OS-9 User Group Consortium - This was one of the most major events of ANY CoCoFest. Representatives from around the world were on-hand to talk about how they use OS-9 and discuss how we may all benefit by getting together. Represented were: o Australian National OS-9 User Group with Gordon Bentzen o EFFO with Stephen Pashedag from Switzerland o EUROS-9 with Peter Tutelaers (the one who started all of this) o OS-9 User Group of Japan with Chikara Ymaguchi. He had a neat dual-6309 based machine running OS-9. VERY interesting and the dual processors gave this "old" machine much speed. Upgraded to 6309s much like we upgrade our CoCos. The book, "The OS-9 Guru", was available. This is one thing you don't find sitting on bookshelves in the US. This was the highlight of attention. Microware - Officially there selling OS-9000 not for \$995 but for the amazing show price of \$350 to OS-9 User Group members. OS-9000 allows a 386/486 to run OSK, basically. The MASSIVE package was very complete and they sold perhaps 20-30 units. Also on display was an OS-9000 machine running full motion 24-bit video (VERY impressive). Of special interest was this tiny portable CD-I machine with small LCD color screen and controller. I have never seen anything like it. It was great. Seeing this really makes me believe we need to help support CD-I more and get OSK into the mainstream. CD-I players have potential to go where even PCs aren't... Radical Electronics - From "nowhere", this first-time vendor had something truly amazing. A CoCo-3 Schematic Designer. It fully supported laser printers and postscript and the output was 100% PROFESSIONAL. Finding something like this at the Fest was amazing. Many other add-ons and upgrades are planned. SBUG - "CoCoPro West"? Perhaps. Andre Lavelle was here again driving those miles to sell lots of new/used items from disk drives to printers to CoCo goodies. The Bob Van der Poel software products were also on sale, and he had a nice printer with serial and parallel (CoCo & PC hookup) that oddly didn't get sold even at it's great show price. StG Net - Scott Griepentrog sat around working on the StG V4 BBS system (which is nearing completion and has some stunning options) and also sold some neat micro-PC keyboards for \$50 or so. Very slick. Scott also has a program called DFIX that will "seek out and restore" clobbered disk files, directories, etc. This product, currently available for OSK, will soon be out for

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```
(* Pause Display
30 REPEAT
  RUN Inkey(key)
  UNTIL key<>"
  key:=""
RETURN

(* Error Handling Routine
40 PRINT
PRINT "DumpFile - Version "; Version; (* (c) 1993 by Wayne Campbell
PRINT
PRINT "Usage: DumpFile <PathName>"
END

PROCEDURE FileSize
(* FileSize - File Size Function
(* (c) 1993 by Wayne Campbell - All Rights Reserved
(* Register Type
TYPE REG=cc,a,b,dp:BYTE; x,y,u:INTEGER

(* Register variable
DIM regs:REG

(* Call code variable
DIM calcode:BYTE

(* Parameters
(* FilePath = Path to file
(* FileSize = Size of file
PARAM FilePath:BYTE; FileSize:REAL

(* Size variables
(* Siz1 = Most Significant Integer (Floated)
(* Siz2 = Least Significant Integer (Floated)
DIM Siz1,Siz2:REAL

(* If error then end
ON ERROR GOTO 10

(* Set calcode and regs variables for call
calcode:=$8D
regs.a:=FilePath
regs.b:=$02

(* Get File Size
RUN SysCall(calcode,regs)

(* Figure File Size
(* Most Significant Integer
IF regs.x>=0 AND regs.x<=32767 THEN
Siz1:=regs.x
ELSE
Siz1:=regs.x+65536.
ENDIF

(* Least Significant Integer
IF regs.u>=0 AND regs.u<=32767 THEN
Siz2:=regs.u
ELSE
Siz2:=regs.u+65536.
ENDIF

(* Set FileSize variable with file size
FileSize:=Siz1*65536.+Siz2
10 END

PROCEDURE Colors
(* Colors - Color Code Function
```

```
(* (c) 1993 by Wayne Campbell - All Rights Reserved
(* To call, pass COLOR CODE: CCode (1-16)
(* Color Codes are as follows:
(*
(* BackGround ForeGround
(* Code Color Code Color
(* --- --- --- ---
(* . 0 White 8 White
(* . 1 Blue 9 Blue
(* . 2 Black 10 Black
(* . 3 Red 11 Red
(* . 4 Green 12 Green
(* . 5 Yellow 13 Yellow
(* . 6 Magenta 14 Magenta
(* . 7 Cyan 15 Cyan
(*
(* .16 Reset ForeGround and BackGround
(* to White on Black

(* Parameter
(* CCode = Color Code to use
PARAM CCode:INTEGER

(* OS9 Data Type
TYPE O9=Escape,Function,Code:BYTE

(* OS9 variable
DIM OS9:O9

(* Color Code variable
DIM Color_Code:INTEGER

(* Set up for parameter error
ON ERROR GOTO 10

(* Assign CCode parameter to Color_Code variable
Color_Code:=CCode

(* Code greater than 16 equals no parameter
IF Color_Code>16 THEN 10

(* Set OS9 Escape code
OS9.Escape:=$1B

(* BackGround Colors
IF Color_Code>=0 AND Color_Code<=7 THEN

(* Set Function code
OS9.Function:=$33

(* Background White
IF Color_Code=0 THEN
OS9.Code:=$00
ENDIF

(* Background Blue
IF Color_Code=1 THEN
OS9.Code:=$01
ENDIF

(* Background Black
IF Color_Code=2 THEN
OS9.Code:=$02
ENDIF

(* Background Green
IF Color_Code=3 THEN
OS9.Code:=$03
ENDIF
```

```
(* Check for key press
RUN Inkey(key)

(* Quit Key
EXITIF key="Q" OR key="q" THEN
PRINT
Abort:=TRUE
ENDEXIT

(* Pause Key
IF key="P" OR key="p" THEN
GOSUB 30
ENDIF

(* Since we are at the point of the last byte of the file,
(* the value of File_Pos will either be equal to or greater
(* than Fil_Size. So, in order to make sure that the
(* Character_Count string gets printed, we have to count
(* down from the current position in the line to the 16th
(* position of the line, thus ensuring that the
(* Character_Count string gets printed.
IF File_Pos=Fil_Size THEN

(* Since File_Pos is equal to Fil_Size, set Last_Byte to
(* 16 minus the current line position plus one. This
(* makes the value of Last_Byte equal to the number of
(* byte positions left in the current line.
Last_Byte:=16-(Byte_Pos+1)
ELSE

(* Since File_Pos is greater than Fil_Size, decrement
(* Last_Byte by one.
Last_Byte:=Last_Byte-1
ENDIF
ENDIF

(* Set Character_Line for displayable characters
IF File_Pos<Fil_Size THEN
IF Sector(Index)>128 THEN

(* If the value of Sector(Index) is greater than decimal
(* 128, LAND it by 127 to get a value of less than 128.
Sector(Index):=LAND(Sector(Index),127)
ENDIF

(* If the value of Sector(Index) became less than 32 (a
(* space character), use a period to denote the character.
IF Sector(Index)>31 THEN
Character_Line:=Character_Line+CHR$(Sector(Index))
ELSE
Character_Line:=Character_Line+"."
ENDIF
ENDIF

(* Time to place a space between bytes?
Space_Mark:=Space_Mark+1
IF Space_Mark=2 THEN
PRINT " ";
Space_Mark:=0
ENDIF

(* Increment Byte_Pos and File_Pos
Byte_Pos:=Byte_Pos+1
File_Pos:=File_Pos+1

(* Print Character_Line
IF Byte_Pos=16 THEN

(* Set ForeGround color to Cyan
RUN Colors(15)

(* Print the line
PRINT " "; Character_Line

(* Check for key press
RUN Inkey(key)

(* Quit Key
EXITIF key="Q" OR key="q" THEN
PRINT
Abort:=TRUE
ENDEXIT

(* Pause Key
IF key="P" OR key="p" THEN
GOSUB 30
ENDIF

(* Reset Character_Line and Byte_Pos
Character_Line:=""
Byte_Pos:=0
ENDIF

(* Check for end of file, and if so exit the loop
EXITIF Abort OR Last_Byte=0 THEN
Abort:=TRUE
ENDEXIT
NEXT Index

(* Exit the outer loop if Abort is TRUE
EXITIF Abort THEN
ENDEXIT
ENDWHILE

(* If path is open, close it
10 IF Path_Open THEN
CLOSE #FilePath
ENDIF

(* Set ForeGround color to White
RUN Colors(8)

(* Turn echo on
SHELL "TMode Echo"
END

(* Display Header
20 PRINT

(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " Byte Count Address 0 1 2 3 4 5 6 7 8 9 A B C
D E F 0123456789ABCDEF"

(* Set ForeGround color to Red
RUN Colors(12)
PRINT "-----"

(* Set ForeGround color to White
RUN Colors(8)
RETURN
```

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CoCo OS-9 as well. StrongWare - John Strong and his Team OS-9 crew was there will Soviet Bloc, Gems, Font Editor, and lots of OSK products. Of interest were some upcoming MM/1 items including some games (nice titles screens) and various routines which will end up being used in some PROFESSIONAL OSK stuff. By the way...John had the only two stereo CoCo games at the Fest, and his MM/1 "file requester" was great. Sub-Etha Software - 1000 miles from home, Sub-Etha was back with "the same old stuff"...with one exception. Joel Hegberg's praised MM/1 word processor, Write-Right, turned heads with it's what-you-see-is-what-you-get screen supporting all printer options and colors. A true REAL word processor for the MM/1 with on-screen ruler and lotsa goodies to click on.

Also at the Sub-Etha booth, Brian White showed off his OSK "Speed Disk" program (under construction) which looked JUST LIKE Norton's utility for the PC. I can hardly wait! The software is just getting better and better all the time! Of odd interest was the announcement of the Sub-Etha sponsored programming contest in which programmers are challenged to create PONG games...awards to be given in Atlanta this October based on Memory Efficiency, Speed, Originality, Special Effects, and Playability for RS-DOS, OS-9, or OSK updates to this classic arcade game that started it all. Any takers? Watch for "press release" information on this contest, which claims to offer the winners a \$1 prize! (By the way, it was noted that Chris Burke might be able to write the most efficient pong game for the 6309 thanks to his knowledge of some undocumented 6309 commands...such as the PNG <pong> command which Chris described as "draw paddle and beep"...)

Briefly shown was the demo RS-DOS player for the SES (Spasm Eyeball Software, Nick Johnson's new venture) EthaSampler. Some stereo samples were played via an Orchestra-90 pak. Hopefully the full package with hardware will be out "real soon now". JWT's Optimize Utility Set was supposed to be available, but the package did not arrive in time - something that has been hitting CoCo vendors alot lately. (This kept Sundog from having Contras for sale at the Iowa Fest.)

As the SysOp on GEnie, I had stacks of GEnie flyers to hand out as well! To prove a point, we unrolled a 27-foot listing of GEnie access numbers. It's great for those who don't

have Delphi access numbers locally. Sundog Systems - Unable to attend, they were represented well. Games like Contras (2 player action!) and Photon attracted quite a bit of attention.

When it comes to CoCo games, it doesn't get much better than Sundog... T&D Subscription Software - While in the process (apparently) of shutting things down, they made an appearance and sold of disks and tapes of old CoCo software.. It was great to see them there and I hope they did well enough to consider future Fests.

Lee Veal - Another displaced Texan. Lee, proud owner of CoCo #1, sold Dave Wordell's video tapes (Learning OS-9 and Installing the 6309) in addition to the STUNNING "Planet Engine" product. It was like a planetarium for the CoCo. Rumors of an OSK port of this product were circulating.

This place was crowded. The unusual setup of the show made things quite exciting. The overall layout was my favorite of any Fest I have attended. Enthusiasm was VERY intense and overall people seemed stunned at all the amazing things that were being shown and sold at this show. It was detrimental to many vendors, though, since there were so many great pieces of hardware to be found that some of the non-earth-shattering items got overlooked. Still, I think we will all agree this was one of the BEST Fests in many many years.

THE SEMINARS

I missed most of them, but found out upon arrival that I was giving two myself. Here is a reprint of what the Fest guide said about them with comments on the ones I was personally involved with.

Saturday: 09:00 "Future Support of the CoCo"

Frank Swygert and Allen Huffman will speak on the future of the CoCo and some of the ways it can be supported in the future. Stop by and learn how you can make a difference. [Frank and I took turns talking about things we believe in. I discussed the importance of staying in touch, getting online, and supporting vendors, and Frank was able to talk about his efforts to link us together with his new CoCo publication, "the world of 68 micros". Thanks to all those who attended and seem to care. You guys

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```
(* Quit Key
EXITIF key="Q" OR key="q" THEN
ENDEXIT

(* Pause Key
IF key="P" OR key="p" THEN
GOSUB 30
ENDIF

(* Get next file sector
GET #FilePath,Sector

(* Print header
GOSUB 20

(* Now go through the sector one byte at a time
FOR Index:=0 TO 255

(* File_Pos keeps track of how many bytes have been read from
(* the file. This way, it can be compared to Fil_Size for eof
(* detection and may be used in the display for a decimal
(* printout.
IF File_Pos<Fil_Size THEN

(* Check for beginning of display line, and print current
(* decimal count if it is.
IF Display_Cnt=0 THEN
PRINT " ";

(* Set File_Pos into Current_Count string
Current_Count:=STR$(File_Pos)

(* Remove decimal point
Current_Count:=LEFT$(Current_Count,LEN(Current_Count)-1)

(* A REAL number is stored as '.0' if the value is zero,
(* so removing the last character would make the string
(* equal to '.'
IF Current_Count="." THEN
Current_Count:=""
ENDIF

(* Set ForeGround color to Green
RUN Colors(11)

(* Format output to add leading zeros. The number
(* displayed represents the number of bytes counted up to
(* this point. The first line displayed shows zero,
(* because no bytes have been counted yet. Therefore, the
(* second line will show 16 bytes counted, and the second
(* lines byte count starts with 17.
PRINT LEFT$("0000000000",10-LEN(Current_Count));
Current_Count;
PRINT " ";

(* Check for key press
RUN Inkey(key)

(* Quit Key
EXITIF key="Q" OR key="q" THEN
PRINT
Abort:=TRUE
ENDEXIT

(* Pause Key
IF key="P" OR key="p" THEN
GOSUB 30
ENDIF
ENDIF

(* If File_Pos is greater than or equal to Fil_Size we are
(* at the last byte of the file, so print spaces to fill in
(* the line up to the 16th byte position.
PRINT " ";
```

```
(* Byte_Cnt is used to display the hex value of byte
(* counts greater than 65,536 (in multiples). Since
(* INTEGERS wrap around at 32,767 to -32,768, and progress
(* to -1, we can use this as a means of detection to see
(* if we're approaching the 65,536 (or multiple) mark.

IF Byte_Adr+16=0 AND File_Pos>0 THEN
Byte_Cnt:=Byte_Cnt+1
ENDIF

(* Increment Byte_Adr
Byte_Adr:=Byte_Adr+16

(* Set ForeGround color to Yellow
RUN Colors(13)

(* Format output for hex display
PRINT USING "H4,H4",Byte_Cnt,Byte_Adr;
PRINT " ";
ENDIF

(* Check for key press
RUN Inkey(key)

(* Quit Key
EXITIF key="Q" OR key="q" THEN
PRINT
Abort:=TRUE
ENDEXIT

(* Pause Key

IF key="P" OR key="p" THEN
GOSUB 30
ENDIF

(* Increment displayed bytes count to keep it in a range of
(* 1 to 16
Display_Cnt:=Display_Cnt+1

(* If displayed byte count=16 then time to start again
IF Display_Cnt=16 THEN
Display_Cnt:=0
ENDIF

(* Set ForeGround color to White
RUN Colors(8)

(* Print hex value of current byte
PRINT USING "H2",Sector(Index);

(* Check for key press
RUN Inkey(key)

(* Quit Key
EXITIF key="Q" OR key="q" THEN
PRINT
Abort:=TRUE
ENDEXIT

(* Pause Key
IF key="P" OR key="p" THEN
GOSUB 30
ENDIF
ELSE

(* If File_Pos is greater than or equal to Fil_Size we are
(* at the last byte of the file, so print spaces to fill in
(* the line up to the 16th byte position.
PRINT " ";
```



```
DIM Space_Mark,Display_Cnt,Last_Byte:INTEGER
DIM Index,Byte_Pos,Byte_Cnt,Byte_Adr:INTEGER
```

```
(* File Size and File Pointer Position
DIM Fil_Size,File_Pos:REAL
```

```
(* Open Path and Abort detection
DIM Path_Open,Abort:BOOLEAN
```

```
(* Beginning of program
(* Set to Base Zero for accuracy of display
BASE 0
```

```
(* Initialize version number
Version:="01.00.00"
```

```
(* Path isn't open yet, so set to FALSE
Path_Open:=FALSE
```

```
(* Set Abort flag to FALSE
Abort:=FALSE
```

```
(* Error Trap in case PathName not passed
ON ERROR GOTO 40
```

```
(* If PathName is passed as a null string, same as no parameter
IF PathName="" THEN 40
```

```
(* Turn echo off
SHELL "TMode -Echo"
```

```
(* Display PathName being dumped
(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " Dump of";
```

```
(* Set ForeGround color to Magenta
RUN Colors(14)
PRINT " ";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT PathName
```

```
(* Set ForeGround color to White
RUN Colors(8)
```

```
(* Initialize variables
Character_Line:=""
Space_Mark:=0
Display_Cnt:=0
```

```
(* Set Last_Byte to 1 to prevent premature exit
Last_Byte:=1
Byte_Pos:=0
Byte_Cnt:=0
```

```
(* Set Byte_Adr to -16 for checking for Byte_Cnt incrementing
Byte_Adr:=-16
File_Pos:=0
```

```
(* Set up for bad pathname error
ON ERROR GOTO 10
```

```
(* Open path to PathName
OPEN #FilePath,PathName:READ
```

```
(* Set path detection to TRUE
Path_Open:=TRUE
```

```
(* Get FileSize
RUN FileSize(FilePath,Fil_Size)
```

```
(* Set FileSize into the File_Size string
File_Size:=STR$(Fil_Size)
```

```
(* Remove the decimal
File_Size:=LEFT$(File_Size,LEN(File_Size)-1)
```

```
(* Display FileSize of file being dumped
(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " File Size";
```

```
(* Set ForeGround color to Magenta
RUN Colors(14)
PRINT " ";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT File_Size;
```

```
(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " Bytes"
PRINT
```

```
(* Display pause/quit key selection
PRINT " Press ";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT "I";
```

```
(* Set ForeGround color to White
RUN Colors(8)
PRINT "Q";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT "J";
```

```
(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " to Quit";
```

```
(* Set ForeGround color to Magenta
RUN Colors(14)
PRINT " ";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT "I";
```

```
(* Set ForeGround color to White
RUN Colors(8)
PRINT "P";
```

```
(* Set ForeGround color to Yellow
RUN Colors(13)
PRINT "J";
```

```
(* Set ForeGround color to Cyan
RUN Colors(15)
PRINT " to Pause"
```

```
(* OK, here's the main loop
```

```
(* Clear the key variable
key:=""
WHILE NOT(EOF(#FilePath)) DO
```

```
(* Check for key press
RUN Inkey(key)
```

make it worthwhile!]

10:15 - "Telecommunications and Networks"

Eddie Kuns and Paul Jerkatis will speak on the telecommunications and networks, their uses and various means of support that are available. Eddie will talk about Delphi and terminal programs while Paul will explain StG-Net and BBSing.

11:30 - "Hardware Hacking"

Mark Griffith and Rick Uland will speak on hardware hacking and answer questions. If you wondered how to make a computer interface with the real world stop by and listen in. Learn what projects these two whizzes have in store for the future.

12:45 - "Programming & Graphics"

John Strong and Joel Hegberg will speak on programming with a strong emphasis on Graphics and User Interfaces (GUI). Questions from the audience will be encouraged.

02:00 - "OS-9000"

Boisy Pitre and Mike Burgess will speak on and answer questions about OS-9000. This is an operating system that is designed much like OS-9 but runs on higher level platforms such as the Intel 386 or higher machines and the Motorola 68020 or higher machines.

08:00 - "International OS-9 Consortium Discussion"

This really deserves it's own section, but I place it here to maintain consistency. A corner of the Fest area was turned into an enclosed meeting room and tables and chairs were brought in. At 8pm or so things got started as a table with reps from all around the world sat to introduce themselves and discuss the future of OS-9.

This meeting was of staggering proportions and the amount accomplished was incredible. Basically, we got to learn about how OS-9 is used around the world. Australian users are CoCo'ist more or less, while Japan users seem to use odd OS-9/OSK machines we have never seen. The Japan users group seems to be around 400 members. In Europe OS-9 and OSK are in use in homes an businesses, but in Switzerland the OS-9/6809 is nowhere to be found.

We learned so much in the hours that this meeting encompassed and here is what I would call the summary. They are working on a way to let us all share information, such as distributing articles from our various newsletters to each

group. (The Australian newsletter will be made available through the USA UG on disk or by article reprints. The Japan newsletter would require translation.)

Software/hardware information will be exchanged to allow us to write programs that will run on systems around the world.

Any chance of graphics standards? Not yet, but MGR offers some chance of that. (MGR is a graphics system for OSK that was ported to the MM/1 in about 1.5 hours at the show!) Libraries will be shared and programming tips exchanged. The OS-9 Users Group of USA will do it's best to fill us in on further developments amongst the groups. Due to heat, we took a very long "10 minute" break and got to shake hands and speak with the members there.

I spoke with Gordon from Australia for awhile. If he only realized how popular Australian accents are in the US!

Anyway, the meeting was resumed and talk continued. Questions were asked about the users groups keeping lists of all shareware and maybe even commercial OS-9 software, plus which machines they would run on. There was so much to talk about and it will take time for them to get things rolling, but at least it's started. Let's wait for more on this!

Sunday: 09:00 - "Glenside Meeting"

Tony Podraza and cast of ??? will hold a meeting (albeit a condensed version) of the Glenside CoCo Club complete with the official gavel. [it takes batteries and makes space noises...go figure]

If you are a member who is not normally able to attend meetings or just plain interested in what goes on at these meetings, drop in. While you are at the meeting you can also join up if you are not a member already. You do not need to be a member to attend.

10:15 - "Network Communications"

Scott Griepentrog and Paul Jerkatis will speak on network communications and BBSes. If you have never heard of LAN or WAN then you must attend this seminar. [Scott talked about a revolutionary change in phone systems coming soon that allows channels of digital data to be send with voice calls all real-time. It could literally allow BBS packages like StG net to become more like internet offering real-time links between all systems...it could happen within a few years... Scott used a variety of overhead transparencies, too, which he designed on Friday night.]

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type'writ'er n. archaic machine for writing by the impression of type letters; one of the reasons home computers were created.

write-right n. a "real" word processor for the MM1 by Joel Mathew Hegberg; a complete word processor with "what you see is what you get" display of bold, italics, underline, and colors as well as a complete mouse-driven cut-n-paste, on-screen text ruler, definable margins and tabs, insert|overstrike modes, text formatting, word-wrap, and definable printer codes.

much more n. what else write-right has to offer for your 100|K-Windows compatible OSK computer.

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And while you're at it, stop balancing your checkbook by hand! Try CheckBook| (for RS-DOS, OS-9, or OSK). Then quite running MM1| programs the hard way and order Etha-GUI. And if that doesn't keep you happy with your computer, print some multi-line messages with MiniBanners (also for RS-DOS, OS-9, or OSK). Still not enough? Watch this space for upcoming products. . .

Complete product lists with prices available by request, of course.

11:30 - "Programming"

Okay, okay...this one was a mistake. This seminar was actually Joel Hegberg and myself making an attempt to show off a new user-interface for the CoCo that works on a text screen offering pull-down menus, point and click via a text cursor, pop-up boxes, etc., all high-speed and EASY TO USE and implement with hot keys, etc. An MM1 port will also be done and ANYONE who wishes to develop with it can get the library once complete FREE without royalty fees. We are trying to get some more professional software and make programmers jobs easier. If interested, get in touch with Sub-Etha.

12:45 - "User Groups and the Future"

Peter Tutelears and Carl Boll will speak about future support for both OS-9 and the CoCo. Learn about user groups and the role they will play in the future by keeping users in contact with each other.

02:00 - "OS-09000"

Boisy and Mike will again speak on

and answer questions about OS-9000. Drop in and ask them about it. SUMMARY PHENOMENAL! Without a doubt the BEST, most-exciting CoCoFest I have ever gone to. There was so much to see that it was almost detrimental to vendors such as us with nothing totally new to offer.

Sub-Etha only did good thanks to Joel Hegberg's new word processor for the MM1. The rest of the money seemed to be spent on 2-meg upgrades, OS-9000, and other high-dollar items. I am sure that the overall dollar-per-ticket amount at this show was higher than many previous shows. The show area itself was packed, though I am not sure how many actual tickets were sold. It sure seemed full and busy the entire time, but someone else would need to qualify this statement. ("Rumored" attendance was under 300.)

I loved the layout of the booths. This was a very refreshing change, and probably necessary to fit everyone in.

I loved the look of the Fest guide as well, but one complaint has to do with the badges. Normally small paper badges enclosed in plastic are worn with different colors to show who is a vendor, "staff", or attendee. At this Fest we

The "International" OS9 Underground® Magazine



by Wayne Campbell

If you're like me, doing decimal-to-hex conversions (and hex-to-decimal) in your head is an impossible task. Many times, I've needed to know what location I was looking at while dumping a file, and had to spend time trying to figure out what location I was looking at on paper.

I decided to write this utility when the frustration became more than I could bear. I decided to add color to it, in order to make it easier to remember which field I was looking at.

I initially used Inkey to allow me to abort anywhere in the program, so I could be sure that I didn't end up with the wrong foreground color if I broke the program while printing one of the color fields. This was fine, until I discovered that pausing the output using the [CTRL]-[W] pause key had a problem. It seems that when I pressed [CTRL]-[W] to pause, I would have to press [CTRL]-[W] a second time before pressing any other key would un-pause the display. I decided then to have the program look for specific keypresses for pause and quit, and that took care of the problem.

DumpFile displays the same data as the standard utility 'dump', except that it adds a decimal byte count field on the left side of the display screen. This field will display byte counts up to ten digits (or 9,999,999,999 bytes before turn-over). DumpFile requires an 80-column screen for its output.

You may use a smaller screen, but DumpFile will NOT adjust for screen-width. DumpFile was written to display the colors of the RGB palette, so if you're using a composite color monitor, or a color TV, you may not get the appropriate colors.

This version does NOT dump directory files. As a project, you can add the code necessary to include directory files. While you're at it, you could add to the display, showing that

the file specified is or is not a directory.

However, DumpFile WILL dump a disk. Opening a disk requires only READ mode, as opposed to a directory, which requires a READ+DIR mode. The FileSize system call is smart, and will return the correct size of the disk being dumped.

Remember, when dumping a disk, to specify the PathName in the form:

```
dumpfile /<PathName>@
```

Example: To dump the disk in device D1, use the PathName:

```
dumpfile /D1@
```

Well, have fun, and I'll see you here next time.

- Wayne Campbell

PROCEDURE DumpFile

```
(* DumpFile - Color File Dump Utility
(*
(* (c) 1993 by Wayne Campbell - All Rights Reserved
(*
(* To use: OS9: dumpfile <pathname>
(* <pathname> may include a complete path up to 80 characters
(* Requires the SysCall and Inkey sub-routines
(*
(* Variable Creation
(* Pathname parameter string
PARAM PathName:STRING[80]

(* Sector buffer
DIM Sector(256):BYTE

(* Path identifier
DIM FilePath:BYTE

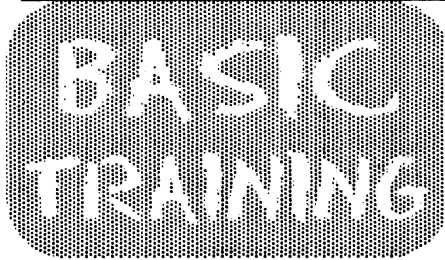
(* Input key variable
DIM key:STRING[1]

(* Version number string
DIM Version:STRING[8]

(* FileSize and Current Decimal Count strings
DIM File_Size,Current_Count:STRING[11]

(* Character string to display character values
DIM Character_Line:STRING[16]

(* Space_Mark = display marker for spacing
(* Display_Cnt = displayed byte count (1-16)
(* Last_Byte = points to last byte in file
(* Index = sector-byte marker
(* Byte_Pos = sector-byte location (1-16)
(* Byte_Cnt = increment value for files
(* ..... greater than 65,536 bytes long
(* Byte_Adr = increment value for bytes
(* ..... read from file
```



BY JIM VESTAL

Pascal09

Several people who read my article called Starting C requested a similar article about Pascal09.

Due to Pascal's rigid structured design, it has become the language of choice for introducing students to structured programming. Many universities are slowly changing their curriculum to include C in addition to or instead of Pascal. As a computer science major I have had to take 2 different Pascal classes. One was an introduction to the language used to teach the concepts of programming. The other class was an advanced course designed to teach data structures and other advanced programming concepts.

When I took the data structures class the college used MS-DOS based microcomputers and Borland's Turbo Pascal. Due to Pascal's lack of standard libraries each compiler has to add their own non-standard extensions to the language for graphics, sound, and other machine specific programming. Since I had Pascal09 for my CoCo OS-9 system, I wanted to use Pascal09 to write my assignments at home. I saved the source code text files into an MS-DOS formatted disk using the public domain OS-9 program called PCDOS. Then I would recompile the program on the MS-DOS machine at the school's computer lab. I found out over the many weeks that modern Pascal source code is not very portable between platforms. Pascal09 was based on the very first ISO standard Pascal, thus it lacks many features of other languages, such as strings and string functions. For this and other reasons I would not recommend anyone buying a copy of Pascal09, but if you have Pascal09 and would like to run it on your CoCo 3 OS-9 Level II system, it can be done.

To run the OS-9 Level I Pascal09 on the CoCo 3 OS-9 Level II system you would need to patch the module Pascal in two places. This patch has been documented in several places by several people, but at this time I don't remember what the patch does. Here's the modpatch script:

```
l pascal
c 0697 21 25
c 1692 21 25
v
```

After this patch is applied the Pascal compiler should run as indicated in the Pascal09 manual. There are at least 2 front end programs to make the editing, compilation, translation, and assembly of Pascal programs as easy as selecting a menu option or pressing a key. One of them is called Pas09, that's the one I use. It is a front-end program written in Basic09. I modified the original program and added several features to it. It can be ordered on disk through 09-Online Systems. Contact me for more details.

Pascal is very similar to the C language, if you know Pascal it is easier to learn C, it can be a stepping stone for some of us who has had trouble learning C. Those familiar with Basic09 can learn Pascal rather easily. Pascal is a good language for learning the structured programming loops REPEAT and WHILE, thus learning how to avoid using the GOTO statement.

For those Basic programmers who are interested in learning Pascal, I recommend a book from Ronald W. Anderson (he wrote articles in the 68' Micro Journal and The OS9 Underground) called FROM BASIC TO PASCAL. It was published in 1982 by TAB books Inc. It may be out of print, and if so check with your local library and if they do not have it, check to see if they can borrow it from another library. I accidentally ran across a copy of this book at our local library.

Next month I'll continue the series on structured programming in Basic09 and talk about the ON ERROR GOTO statement.

Jim Vestal <EOF>

**TELL A FRIEND...
ABOUT
THE UNDERGROUND!**

THANKS

used little buttons which was nice and made for a neat souvenir BUT you didn't get to read who people were and where they were from. This I sadly missed. (Besides, I am VERY bad with names and had to bluff my way through the entire show pretending to remember people's names...I hate that part.) Future show planners: Please give us name badges. It adds an extra personal touch. (Though I would love to see buttons as well.) Also, please make sure you include address/phone number information of vendors in the guide books. That is most handy, and sadly missed in the book. Other than that, GREAT!

Things seemed VERY stable in the CoCo Community. It really feels as if we have control back of our declining group. Surprisingly, with the Rainbow "gone" it seems like support is now actually greater now than it was a year ago. New publications such as "68 Micros", "UpTime", "No Name Magazine" along with the resurgence of "The 'International' OS9 Underground®" let us know there WILL be places to find information about upcoming CoCoFests.

There WILL be places to find out about new products such as The Rocket and CoNect's super 232 pak. There WILL be support...as long as we support their efforts.

There really was more great items of interest here than I could see. Bumper stickers and buttons and many great things to take home. I don't think I've ever had quite this much fun at a Fest. So much was being shown that I'd have to double this Fest report to put it all in. Perhaps, for those who were unable to attend, this will at least give you a feel at what you missed.

DISCLAIMER

I apologize for not mentioning those I should. I apologize for getting products wrong when I did. I apologize for not having the accuracy I need. I apologize for any mis-spellings of names, products, etc. I wanted to get this report out as soon as possible but things always seem to get left out. For those still interested in the events surrounding the 2nd Annual "Last" CoCoFest, be sure to check out "LSTFST93.TXT", available on GENie and Delphi. It's a slightly longer, more editorial version of this report including some "behind the scenes" information. Special thanks goes to Carl Boll for all his help, and to James Jones for his editorial advice.

Thank you, Glenside, for putting this all together. The backbone of the CoCo Community is remaining strong thanks to your efforts. Carl, thank you so much for saving Sub-Etha and helping us get it all worked out. Thanks, Joel, for your financial support these last two Fests. Thanks Dave and Nancy Myers for showing up and letting us know we haven't lost two very important friends. Thanks Chris Burke for helping recover that lost directory. Thanks CCCC and the Chicago OS-9 groups as well as many others who made a showing there to offer support. Thanks, Scott, for the sandwich and dinner and for showing me how DFIX doesn't quite work on the CoCo ☺. Thanks Paul for the home-brew sample. Thanks, Eddie, for discussing "business" with me. Thanks, Tony P., for letting me use the mike to announce our Pong contest. Thanks to all the vendors who showed up and helped keep things going. Thanks VERY MUCH to those who travelled so far to spend money and let us know you care. Thanks to Frank Swygert for a great book and upcoming magazine and for coffee on Saturday. Thanks, Disto, for being there. Thanks for the candy bar, Joel. Thanks to YOU for taking the time to read all of these ramblings.

Thanks to Alan Dekok and Brian White for showing me some truly impressive coding (ready for PONG?). Thanks to Al Dages for showin' up and letting us have hope for a closer-to-home *ahem* CoCoFest in October. Thanks to John Strong for more information than I would have thought to ask for. Thanks to all my friends who helped us out but I still didn't mention them here (no name badges, remember?). Thanks to the only Monk I have ever seen at a CoCoFest ☺. (I'd mention your name, but I don't know if I remember it at the moment...sigh...) Thanks to all the worldwide members of the OS-9 Consortium for going so far to accomplish so much. And thanks so much, Tandy, for giving us one of the greatest, funnest, computer systems ever. Long live the CoCo and OS-9.

Allen C. Huffman,
Owner - Sub-Etha Software

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