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COLOR COMPUTER OWNERS GROUP  
NEWSLETTER JUNE 1991

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**PRESIDENTS COMMENTS:**

Another month come and gone, so many months come and gone, months turn into years. But WHY is it so long in between paydays?

The July Rainbow came the other day, down to 68 pages!!!! Which means that there is less advertising. That must mean that there are less advertisers. That must mean that people are buying less for their COCOs or that there are less people to buy for their COCOs. Probably the latter.

There is still a wealth of software on the market for those that wish to buy. There are still many peripherals that can be purchased for the COCO. There are still a few COCOs themselves to be bought. BUT, We MUST do some BUYING!!!!!!!

I counted all of the different advertisers in the June and July issues of RAINBOW. Grand total, 27, including the RAINBOW itself. And, NO, TANDY was not among the remaining advertisers. Not that we would expect them to be. We still have a great and capable machine. There is a lot of good things out there on the market for us to buy for it. But that is not going to last. We must support these people if they are going to still support us.

This month we will have demonstrations on entering, editing, debugging and running a program in DISK BASIC, BASIC09, and "C" in OS-9. I hope that we have time to do the subject justice. I hope we have enough of our membership interested in the subject of programming so that this will be a worthwhile meeting.

We have had a lot of messages on the BBS recently indicating an interest in getting deeper into OS-9. Meetings like the one we have planed this month should help pave the way. Also, your input about topics for future meetings will help keep the meetings active and interesting for all members.

Bernie

# COLOR COMPUTER OWNERS GROUP

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Anyone who can read the handwriting on the wall should know by now that if there is to be any future to the Coco it will be in OS-9. This means that you really should get into OS-9 now, while Tandy is still selling OS-9 Level II.

For those of you who are making the attempt and having problems, maybe the following will help. I don't think that I or Tom Napolitano have covered this subject previously.

Forget everything you may have seen in Rainbow about OS-9 being hard to learn. Ignore the sometimes confused format in the Tandy OS-9 owners manual. OS-9 truly is a logical very well thought out operating system. I am going to back this statement up with an example shown in OS-9 vrs the same example in RSDos.

On the Coco 3, did you know that you can type on the 32 column screen and get true lowercase letters? Well you can! But how can you do it under the Tandy ROMs? Well it certainly is not easy. In fact it might not be possible except that the Coco 3 is always in the RAM mode of operation.

Hmmmmmm, I am going to need the Coco 3 service manual, the Spectral Associates "Basic Unravalled" books, and, oh yes, assembly language programming. Let's see, but the change won't be permanent unless I burn an EPROM. So, I'll need an EPROM, an EPROM programmer, and software. My this is getting very involved for such a simple request. If you really want to know how to do this see me after class!

By comparison, here is what I did to achieve permanent true lowercase in a 32 col. VDG OS-9 screen. (I was using Basic09 on a VDG screen because I wanted the VDG graphics format. Now to get those lowercase letters.)

Should I try to modify Basic09? No, Basic09 has nothing to do with the hardware interface and lowercase vrs reverse letters is a hardware related problem. That must mean that the answer lies with OS-9 not Basic09.

Do I need to modify OS-9? Maybe I do, but how and where? The owners manual in the Technical Reference section has a kind of flow chart for OS-9 operation on p1-1. Where would lowercase letters fit into this scheme? Seems to be a logical layout just like the management structure of a large well organized corporation. So since I am using a VDG screen and want to change monitor text that is an I/O problem.

Here is an IOManager but this is too simple a task for the big boss so delegate to Character Manager. No, this guy still has too many secretaries. CC3IO might be better but I am still too high up the corporate ladder. VDGInt (CC3IO Interface) now that makes sense. Here is a manager that deals only with I/O to VDG screens. Oh I almost missed this little box; Term-VDG Desc. Better look up what it means.

Table of Contents says SCF Device Descriptors p6-6. Wow, a chart of all the screen parameters! This ought to be the place to notify OS-9 that I want true lowercase letters. Now if I can just figure out what to change. But first, I really should look through the OS-9 commands. Why reinvent the wheel if a command exists to make the desired change?

The Table of Contents for OS-9 Commands says that chapter 6 section 3 is the command summary. Not too bad, only two pages of names. Let's see TMODE ( changes the terminal's operating mode) and XMODE (changes a device's parameters). This look's promising.

If you carefully read the descriptions of TMODE or XMODE for what the parameter "type" does, you will see "for the TERM-VDG, the type byte has a different use: bit 0 specifies a machine with true lowercase capability. Set bit 0 to turn on true lowercase."

So TMODE type=1 turns on lowercase temporarily and XMODE /term type=1 - and a COBBLER to write to disk - makes the change permanent.

What is most important above is not the specific example. Note the logical method used to find information in the OS-9 manual. Note that expertise was not needed to find the answer nor was it needed to execute the desired operation. What is important here is that this is typical of almost anything you will want to do within the OS-9 system.

OS-9 was designed to be simple and powerful. Most problems should yield to a straight forward logical approach.

=====  
"Viewpoints" by Gus Korte"

According to Bob Gault's good suggestion on the CCOG club's electronic bulletin board system (BBS), the one good way to learn about OS9 is to try to do some programming in BASIC09. Therefore I bought the manual on the subject "The Official BASIC09 Tour Guide" by Dale L. Puckett. I have found it to be a very good discussion on the subject. However I had to make some additions of my own in order to get it operating on my COCO3. That's because I only have one disk drive at this time. Eventually I hope to upgrade to a multiple disk drive. In the meantime I want to use OS9 with what I have. First, after getting many error messages, I determined that to get into BASIC09 I had to initially enter at the OS9 prompt /d0/cmds/BASIC09. I was told earlier that /d0/ was not necessary if you only have one disk drive. However I kept getting an error message if I omitted it so I kept it in the OS9 path list. (Editors note: CHX /d0/cmds when changing floppies in drive 0 and CHD /d0/whatever for the data directory.)

On page 3 of this manual is a program called DEMO. When I ran it, the whole thing scrolled by so fast on my monitor screen that I couldn't read it. To fix this, I added a line to stop the program.

First I had to dimension for the string variable X\$ I used to hold the constant variable represented by a press of the ENTER key. I added the line INPUT "Press ENTER key to continue",X\$ and that did it. The display stopped where I wanted it to and the program resumed as soon as I pressed the ENTER key. The program as written needs this addition so you can see the printed information before it scrolls off the screen. Also a multiplication table is displayed which scrolls by so fast you only see the end of the table. So additional stops are necessary so you can see the resulting table. I hope this information will help any of you who have this manual and need to add such stops into a program.

Club member Karl Sefcik has an interesting message on the BBS our club supports. He indicated that, for those of us who need to subscribe to the Rainbow magazine, they can use a free telephone number to order by credit card. It is 1-800-847-0309. Let's keep our COCO community together. It's up to US!!! Since some of you do not use the BBS yet, this information is included here for your information.

Now continues to be the time to obtain any COCO software etc. you may need to enhance your computer hobby since Radio Shack has many of these items at sale prices. The software manuals have a lot of useful information in them. As Bob Gault mentioned previously, the only way to learn to use the software and do any programming is to study the related manuals. There is no other way. So I am continuing to study my BASIC09 manuals and related information to get better acquainted with the very useful OS9 system. The experts on the CCOG BBS usually have the answers for any hobby support needed. For the benefit of other club members (including me) who are unable to attend the next meeting on 6/25/91 when the subject of programming will be the main theme, I hope it all will be well documented in the CCOG newsletter or attachments so that we can all share in the ideas that are presented. In this way the newsletter becomes a useful reference tool for later review for all of us.

Membership is now open in the VFW to veterans of the Persian Gulf War. Their initial membership at the Livonia VFW Post 3941 is free. So if any of you have contact with such persons, let them know they are eligible now to join the VFW.

A reminder especially for new members of the CCOG, the VFW uses your money donations from our club in it's many charitable activities especially concerning unfortunate hospitalized veterans. It's all going for a good cause. The Livonia VFW also collects used books and magazines to give hospitalized veterans. So if any of you want to contribute such, which you would otherwise discard, give them to the VFW bartender to make some unfortunate veterans happy. Also we owe some thanks to the VFW bartender because he volunteers his time to open the VFW Post for us and serve us drinks. He gets nothing for providing us this service so let him know you appreciate his efforts for us whenever you can.

I never realized when starting on the subject of disk maintenance that we had enough material that it would take three months to cover it. This last episode, at least for a while, will take a look at three tools used to examine your disk and file structures in detail.

You should be aware by now that when you save a file on disk, the operating system, os9, will write that file most anywhere on the disk. All that is necessary is that os9 make arrangements to be able to find that file again at some later date. Normally, we as users not much care about the details of where the file resides on the disk media. However, if you are curious you may be interested in looking at where a give file is stored. Perhaps you have experienced a slowdown in data access and want to check how fragmented a file has become. Or, horror of horrors, you may not be able to read the file and may wish to attempt to recover what is left of your data. This last is not for the squeemish, nor is even possible in all cases. "fmap" is a utility that will display much more information about a particular file than is given in the typical "dir" output.

```
fmap <filename>
```

will commence to print out each starting sector number where a file is stored and how many sectors in sequence are stored there. It does this for each block of sectors allocated to a file. The more fragmented a file is, the more individual segments will be shown by "fmap". If you want even more data on a file,

```
fmap -v <filename>
```

will also show all the data stored in what is known as the "file descriptor" sector. This includes the usual file name, attributes, size and date last accessed as seen in a directory listing. In addition, fmap shows the owner, the date the file was created and the link count of the file.

All this information is not normally needed in your day-to-day directory listing, but is usefull if you are investigating your disk's fragmentation or are comparing two files to see which was originally created earlier.

Another handy program is called "freeb", which is short for "free blocks". Whereas fmap allows you to see the disk space taken up by files, "freeb" looks at what is left over, i.e. what space on the disk is free to be used by new files. There are four options to freeb and some take quite a while to run. A complete list of all free blocks on a hard drive may take quite a lot of paper, so be warned. A better idea would be to redirect long outputs to a file and later browse that file with your favorite text editor. First the short options:

```
freeb /dd
```

prints out the disk name and creation date, total sectors used and total sectors free.

```
freeb -h /dd
```

prints only the number of free sectors.

```
freeb -s /dd
```

prints everything in the first example except for the free sectors. The other two options give longer listings with more details:

```
freeb -a /dd
```

prints out the sector number location and size of each chunk of free sectors in the free sectors remaining on the disk. This will give you an idea of how fragmented your disk has become.

```
freeb -t /dd
```

gives the number of free blocks of each size, starting with the largest that are on the disk. This too is a measure of disk fragmentation. Keep in mind that there is no absolute rules as to how much disk fragmentation is too much. If you are not sure, and everything seems to be working correctly, the best advice is to leave things alone and don't fix a problem that isn't there.

Are those enough options for you? I should hope so! Some of this data is the same as that given by the standard os9 utility, "free", which you still will want to keep, if for no other reason but that it is faster.

One more useful view of your disk's health and utilization is given by the program "fat", or "file allocation table". "fat" differs from the previous programs in that it is a visual tool; it gives a graphical look at your disk drive, showing each cluster as a pixel on the screen. Thus you can actually see the clusters used. This way too you can get a feel for the fragmentation of your disk, and can better decide if it is time to repack the drive, i.e. to backup everything on the disk, reformat and restore your files. It's amazing how quickly a freshly formatted disk becomes fragmented. To use the "fat" program, just type:

```
fat /d0
```

and watch the screen light up. The program will change the current screen to a graphics screen and back again when finished. Give it a try and have fun until next month.

OK ■

# Jim's

## "CoCo" Corner

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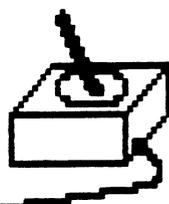
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Oldest COCO Club in Metro Detroit  
Meetings the ~~THIRD~~ <sup>FOURTH</sup> Tuesday of each month  
7:00 PM — 9:30 PM  
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Apr 16	Oct <del>X</del> 22
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Jun <del>X</del> 25	Dec <del>X</del> ?

MEETINGS INFORMAL AND OPEN TO THE PUBLIC

Contact: Bernie @ (313) 283-2474  
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