

Maybe these sheets should be pink...

We are excited...and a little nervous. Soon Robin will be taking a short (?) vacation (?) to become a mom once again. The business end of this operation is in for some temporary (extra) chaos! You won't notice it (hopefully), but we have The-Men-in-White on standby and a padded room on reserve just in case we need a little therapeutic solitude. Really, it should only take 4 or 5 people to substitute for her. Or 10 or 12 Toms and Gradys...



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Filename	English Translation	PMode	PCLEAR	Locations
2-11 * SPIRAL	Spiral Cover — #8	4	4	7 & 151
20-26* MINMUSIC	Mini Music — 17	(2)	(4)	29 & 167
32-40* AMAZING	Amazing — 17	1	6	43 & 179
50-64* STELLAR	Stellar Encounter — 17	4	4	64 & 193
80- <del>88</del> * ADDRESS	Name & Address — 10	0	1	87 & 212
95 * OLDHOUSE	Old House — 17	(2)	(2)	111 & 230
119-12* CKMON	CK Monitor (CLOADM - see notes) [H 7800, [H 7DD], [H 7800	0	1	118 & 226 135 & 250

\*\*\*\*\*

Locations are for the R/S CTR-80. If the first copy of a program won't load, try the second. If neither copy loads, return the tape for disciplining and a prompt replacement. If you get an OM, FC, or SN error while loading or running a program, you probably have to enter the PMode and PCLEAR values for the program directly from the keyboard. (Values in parenthesis are not set in the program). \* These programs may use high speed. Be sure that the computer is slowed down again before doing I/O to tape (POKE 65494,0).

Three hundred ways to make a spring - or to draw a spiral. See Spiral Cover for more details.

CoCo baroque - compose your own with Mini Music! You should have your 'Going ahead with Extended BASIC' manual at hand, because you use the same syntax for creating music as you would use in the PLAY command. The BIG difference is in the ability to easily edit a score until you get it right! Also, one of the MOST annoying things you run into when creating a tune is having to play the %\$&!# tune over and over and over and over and... until you and/or your family are ready to throw you and the computer out. Well, with Mini Music you can start at the segment of the sound that you are working on instead of playing the whole song! You may last another 10 minutes or so because of this... Note - if you use the wrong syntax (something not recognized by the PLAY command) while creating a song you will probably get a SN ERROR IN LINE ??? and get thrown out of the program. Never fear, your chart-topping New Wave tune is not lost. Just type 'GOTO 60' <enter> from the keyboard and you're back in the swing of things.

Sometimes I feel like a rat. With Amazing, I can act like one! You are to find your way out of a maze from the rat's point of view. Say 'Cheese'!

Zero in and fire during your Stellar Encounter. This is the ol' blast-'em

type game using the joysticks.

Keep track of your friends with Name & Address. You can list, sort, save, load, add, change, lie, cheat, or do just about anything you want to the addresses.

Lookin' on the inside. CK Monitor is a machine language program that allows you to look at and change bytes in CoCo's memory. If you dabble in assembly language or machine language, this program could be very useful to you. If you don't dabble, CK Monitor probably won't excite you at all. If you are still interested, be SURE to read the manual that is in these sheets BEFORE loading or running the program. 30 lashes with a wet noodle for the person who has not read the manual carefully, then calls me and says "The program won't work".

Can't do nuttin' right...

Before releasing last month's Check Register, I went in and 'fixed' a few not-nice things. Boy, did I fix them!!?? I fixed them so that the balance was not updated whenever you changed, inserted, or deleted a file. No, it was not a joke, just stupidity on my part. So here are the fixes to make the program usable:

```
Delete lines 7065 and 8270.
Add ':T=NX' to the end of line 7030.
Edit line 7132 to '7132 X=T: GOSUB 8200'.
Change the 'GOTO 8150' in line 8100 to 'GOSUB 8200: GOTO 8150'.
Change the 'GOTO 8200' in line 8140 to 'GOSUB 8200'.
Edit line 8300 to '8300 PRINT: RETURN'.
```

Adding insult to injury, last month's Disassembler also had a bug in it. You can't take the HEX\$ of a negative decimal number and you got an FC error whenever you tried to in lines 470 and 520. So we'll just make the numbers positive! Change the following lines:

```
460 A=AD+1: OS=PEEK(A)*256+PEEK(A+1)
510 A=AD+1: OS=PEEK(A)
```

This works due to the way CoCo handles negative integers (by taking the two's complement of the positive value). I may talk more on this at a future time. Don't worry if you don't quite get the hang of what CK Monitor, Disassembler, or other programs dealing with assembly/machine language are good for. I recommend reading some good articles from one or more of the paper-oriented magazines or a book on assembly language if you are really interested in finding out what it is all about. But knowledge of this sort is not a prerequisite to enjoying CoCo. These programs are included in CHROMASETTE so that the more experienced software dabblers get something right up their alley to use.

Speaking of magazines...

We got mentioned all over town recently! The March issue of Creative Computing gives us a real nice review/overview. That issue also includes a good article on a state-of-the-art graphics convention that you may want to look into. 80 Micro spotlights the Color Computer (it's finally being recognised!) in their March issue and gives us a great review. The February Radio Shack TRS-80 Microcomputer News surprised us with a plug AND a comment on a gripe about their disk system I made in these sheets. There is also an article on (guess what?) assembly language programming in the Color Computer!

Kudos got to Tandy for their newsletter and the wealth of information and support it contains.

Rainbow Magazine is still growing and getting better all the time. And Color Computer News... Well, the February issue has not been sent out yet. However, Bill Sias himself assured me that the February issue was going out by March 15, with March's issue soon to follow and April's issue finally on time. So, allow 3 to 4 weeks for the Postal Service to do their part and start looking for your next issue (February) of CCN about the middle of April. After that you can call (616) 759-0682 (8-4 weekdays, 9-3 Saturday) if you still haven't received an issue.

Around the world in less than 30 minutes...

Peter Roach of West Springfield, Virginia, used a little trig to cut the time needed to draw the world in January's 3D World by 2/3 or better! First delete lines 1000-1050. Then add the following lines:

```
7 CX=COS(RX):SX=SIN(RX):CY=COS(RY):SY=SIN(RY):CZ=COS(RZ):SZ=SIN(RZ)
1000 Q1=N1:Q2=N2:N1=Q1*CR+Q2*SR:N2=Q2*CR-Q1*SR:RETURN
```

Now modify the subroutine calls in line 90 as follows (Note: the sequence of calls has also been changed so that the AZIMUTH function works properly):

```
90 N1=X:N2=Z:CR=CX:SR=SY:GOSUB1000:X=N1:Z=N2:N1=Z:N2=Y:CR=CX:SR=SX:
GOSUB1000:Z=N1:Y=N2:N1=X:N2=Y:CR=CZ:SR=SZ:GOSUB1000:X=N1:Y=N2:
X=X+127:Y=Y+96
```

Now you will be able to pinpoint a spot on the globe using the LATITUDE & LONGITUDE, then rotate the globe upon that point with the AZIMUTH. These changes can also be made to December 1981's Rotate!

If you would like the world in 3D World to be round instead of slightly oblong, change the ends of lines 5 and 90 to (These CIRCLE changes can also be made to December's World Map):

```
5 ... :CIRCLE(127,95),D1*1.12+4,,0.88
90 ... :X=X*1.12+127:Y=Y+96
```

Finally, you can shrink the world or magnify different areas by changing the value of D1 in line 5 to something other than 90.

Pick a number, any number...

You may have noticed that when you run one of our covers right after you first give juice to your CoCo, the starting pattern is always the same. Why? First off, CoCo does not generate true random numbers, but uses an algorithm that generates a very, very large series of numbers that appear random. This series of numbers is built by generating a new number from the previous number. Upon power-up, CoCo has no previous number, so a 'seed' number is supplied. And this 'seed' is ALWAYS the same. However, Phil Edwardson of Americus, Kansas found a way to randomize the seed itself with the TIMER function. A statement like 'X=RND(-TIMER)' at the beginning of a program that uses random numbers will do it. By the way, did you know that RND(0) will give you a nine digit number that is less than one?

Pick a ROM, any ROM...

I understand that it is now possible to buy the 1.1 ROM for CoCo a la

carte. You won't have to get the 32k upgrade or bribe the local technician to upgrade from the 1.0...

Paper graphics...

If you have a Line Printer VII with the graphics print program, Lou Fiorino of Malverne, New York has a routine for you that will allow you to dump the GRAPHICS screen to the printer! You may be able to use this routine with slight modifications for other printers as well.

```

10 CLEAR 200,16255: CLOADM: EXEC : REM LOAD IN LP VII GRAPHICS PROGRAM
20 PRINT#-2: REM CLEAR BUFFER
30 PMODE 4: SCREEN 1: REM SET SCREEN
40 FOR Y=0 TO 191 STEP 7: REM VERTICAL POSITION
50 FOR X=0 TO 255: REM HORIZONTAL POSITION
60 POKE 65495,0: REM ** HIGH SPEED ** USE ONLY IF YOU ARE NOT USING
    A DISK SYSTEM AND YOUR COCO CAN HANDLE IT
70 C=128: REM INITIALIZE GRAPHIC BIT FOR PRINTER
80 FOR Z=Y+6 TO Y STEP-1: REM SCAN POINTS
90 IF PPOINT(X,Z)=0 THEN C=C+2*(Z-Y): REM GENERATE 7-BIT CODE
100 NEXT Z
110 POKE 65494,0: REM PUT BACK IN LOW SPEED TO PRINT
120 PRINT#-2, CHR$(18);CHR$(C);: REM PRINT A CHAR
130 NEXT X
140 PRINT#-2,CHR$(26): REM START A NEW LINE ON THE PRINTER
150 NEXT Y
    
```

Do I hear a baby crying?

Goo, goo,

*Dave*

ed.

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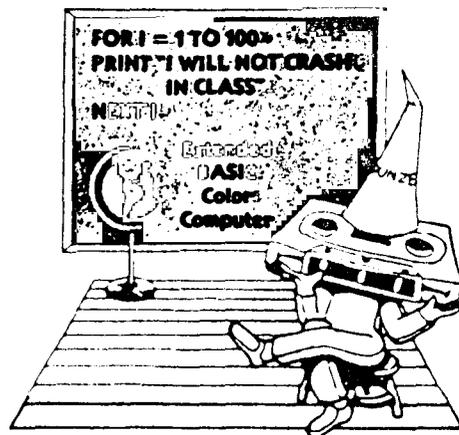
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I. INTRODUCTION

This is a small monitor program for the 6809 Color Computer. The program allows you to do hex-ascii dumps of memory, examine and change memory, set break points in programs, examine and change the registers, and tests memory. The program is very versatile and is position independent (pic).

1. PURPOSE OF THIS PROGRAM

The purpose of this program is to aid in the debugging of machine language programs and to better understand the internal workings of the Color Computer.

III. HOW TO GET STARTED

Load the program using the CLOADM command. Then type EXEC to start the program (you should get 'CMD?' as a prompt). The first command you should try is the 'M' command. For a detailed explanation of this command and other commands, see below. Note - the program as it comes is designed for a 32K machine, so for machines with less memory see the SPECIAL INSTRUCTION section for instructions on loading it into a lower address space.

IV. COMMANDS SPECIFICATIONS

The reference type format will be used with the command displayed first and its function following it. Now for a few fine details: 1) If you make a mistake while typing in a hex number of any kind, just type an invalid hex digit and the command will abort without further action. 2) The dash between two address commands is provided by the computer so you don't have to type it. 3) The 'A's in the syntax diagrams signify hex digits. 4) Brackets surrounding an item indicate that the item is optional. Don't type the brackets in.

B AAAA

SET BREAKPOINTS - Puts a software interrupt in place of the opcode at the address specified. When the software interrupt is executed by the 6809 processor, processing stops, the register values are shown, and the command prompt is given. It is useful to break at the beginning of an instruction to follow the execution flow of a program.

E AAAA-AAAA

EXAMINE MEMORY - Displays in both hex and ASCII any portion of memory.

G [AAAA]

GO ADDRESS - Starts execution of a machine language program at the address specified. If no address is specified, the address specified by the program counter register on the stack is used.

HELP - Lists all of the commands and a brief description of each.

M [AAAA]

MEMORY EXAMINE-CHANGE - Used to alter things in memory and view values in memory a little at a time. If an address is specified, the examining starts at that address. If no address is specified, examining starts with the address last viewed by a previous 'M' command (or at location 0 if the 'M' command has not been used before). To scan forwards in memory, hit any key except <up arrow>, <enter>, or hex numbers {0123456789ABCDEF}. To scan backwards, use the <up arrow> key. To change the currently displayed memory location, just type two hex numbers. If a question mark appears after the two typed in characters, the memory value was not changed due to the location not being in RAM. To return to the command prompt hit <enter>.

Q AAAA-AAAA

QUESTION MEMORY - Tests memory between the addresses specified. This will test over this monitor program and destroy it if it is asked to, so be careful.

R [REGISTER]

REGISTER EXAMINE-CHANGE - Displays all of the registers and their contents if the 'R' is followed by <enter>. However, if it is followed by one of the following letters (C,A,B,D,X,Y,U,P), that register is displayed and you can change its value by typing in a hex value. The definitions of the registers are:

- C = condition codes
- A = A register
- B = B register
- D = D register
- X = X register
- Y = Y register
- U = U register
- P = program counter

U AAAA

UNDO BREAKPOINTS - Clear breakpoints at the specified address.

V. SPECIAL INSTRUCTIONS

To load CR Monitor on a 16k machine you have to add an offset to the CLOADM command (then just use EXEC to run):

```
CLOADM*CRMON*,64C000
```

To make a copy of this program after loading it into 16k you:

```
CSAVEH*CRMON*,6H3000,6H3DD1,6H3800
```

Note: the 16k backup copy does NOT need the offset to be reloaded (CLOADM will do).

To make a copy of this program after loading it into 32k you:

```
CSAVEH*CRMON*,6H7000,6H7DD1,6H7800
```

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