Chromasette Magazine
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Jingle bells, jingle bells...

It's starting to look a lot like Christmas here - the hills are green and the sun is out! Donna (a New England refugee) is having a bit of trouble adjusting to the fact that the only white to be found is on the top of a beer (not a lot of trouble, however). We gave ourselves a little gift already - meet Grady, a part-time helper and full-time scapegoat that we found spreading tomato sauce at a local pizza joint...

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Filename	English Translation	PMODE	PCLEAR	Locations
GRAPHCOV	Graph Cover	3	4	8 & 147
DOGSTARS	Dogstars	4	4	30 & 163
BASECONV	Base Conversion	(2)	(4)	48 & 176
AMORT	Amortization	(2)	(4)	61 & 187
POUNCE	Pounce	(2)	(4)	77 & 199
ROTATE	Rotate	2	4	89 & 209
	Figure (load & use with Rotate)			100 & 218
WORLDMAP	World Map (PCLEAR 3: CLEAR 10)	see notes		125 & 238

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. PMODE and PCLEAR values in parentheses are not explicitly set in the programs and may have to be entered before loading or running the programs. Otherwise, an OM, FC, or SN error may occur. * These programs may use high speed. Be sure the computer is slowed down again before doing I/O to tape (POKE 65494,0).

Making mountains out of molehills - or mathematical equations. That's what is done in Graph Cover.

Finally an arcade-type shoot-em-up that's good! The object of Dogstars is to shoot the ships that appear on the screen (what else is new?). But it is NOT easy to get a good score! And the author 'conveniently' has his name at the top of the high score list to give you something (unrealistic, I bet) to shoot at.

Last month's forgotten program! Was it worth the wait? Depends on whether you ever want to do a Base Conversion or not. This program will convert a number from one base to another base. The range of bases is first, second, third, and home. No, no! That's baseball! The program deals with the bases 2 through 16. Strike three!

Let's say that you want to buy a house in Santa Barbara (and you want to swim the Pacific Ocean, too). Now it's really time to dream. You found a small two-bedroom place for $120,000 and you got a 30-year loan at 12%. Using Amortization, your payments will only be $1234.34 a month! Note - This program may give slightly different values than your favorite (and desperate) savings and loan due to their method of calculating the

payment. But it will be close enough to give you a good idea of why you continue to rent...

Pounce on the number first, and you get the points. A simple but fun game. Needs joysticks.

Here is one of the programs I initially sought when the Color Computer first came out - Rotate. This little beauty allows you to create a 3-D object on the screen, and then it rotates it along the X, Y, and Z axes according to the degrees of rotation that you specify. The rotation is fairly smooth (you can really get an object spinning) because the movements are essentially compiled. What do I mean by 'compiled'?

Let's say that you have created a cube on the screen that you wish to rotate by 18 degrees five times. You know the original X, Y, and Z coordinates of each corner, but each time you rotate the cube, these values change. Not only do the X, Y, and Z values change, but these 3 dimensional points must be changed to 2 dimensional points before they can be displayed on the screen. Even with a computer as fast as CoCo, to calculate all of this for every corner takes TIME. And the rotation would be incredibly slow. What this program does, then, is do all of the rotations at the beginning (at 'compile time') and stores all of the calculated points in an array. This takes a lot of time (15 minutes...), but when it is through, you are able to set that cube a'whirrin' since all the program has to do is read the array (no calculations!) in order to rotate the cube.

The 3-D figure you create to rotate is limited to 16 lines, and the maximum number of rotations you can perform on an object is 20. However, if you have 32k of RAM, you can get more lines and rotations by changing the values of NM (maximum number of rotations) and NL (maximum number of lines) in line 40.

And to get you excited about Rotate (by saving you the 15-minute compile at first), you can load Figure by the following method:

1) Load and run Rotate.
2) Make sure the little grey plug to your recorder is plugged in.
3) Choose item 6 on the menu (load tape) and type in the filename 'FIGURE'.
4) When Figure is finished loading in, you will return to the menu. Choose item 3 to see it rotate.

Sometimes we have to get out a World Map to see where our tapes are being sent. This program is another marathon runner (it does take a while to draw a map), but when it is done you have a map of the world from one of three projections. This program really stretches the limits of your computer's memory, so if you do not have 32k of RAM, you must type:

'PMODE 2 : PCLEAR 3 : CLEAR 10'<enter>

from the keyboard BEFORE loading in World Map. Otherwise, you will get an 'OM ERROR' when you try to load it.

Easy to fix - buy a new one...

Gary Boldt of Lewiston, New York discovered a bug in October's Tower program. In order to get targets to appear at the bottom of the screen, the 'GOTO 940' at the end of line 570 should be taken out.

'Can't print Videotex' blues...

Ask Radio Shack, and they say that it can't be done. What else is new? But Videotex users, take heart! A past issue (Volume 1, #4) of Rainbow Magazine has two methods of sending the Videotex screen to a printer! There is a bit too much info to give here, but I have been assured that back issues of Rainbow are being printed. So you can order that issue (or any issue back to July 1981) from Rainbow Magazine, 5803 Timber Ridge Dr., Prospect, KY 40059. Back issues cost $2.00 for each issue plus $2.50 shipping per order.

Try Super Glue...

There is an easy way to append one program to another in little CoCo's memory. This is really handy when you write little routines that can be used by more than one program and you don't want to type them in every time. It is also good for adding instructions or menus to programs. Hear ye - this information was borrowed from the Color Computer News.

First, make sure that the LOWEST line number of the second program is HIGHER than the highest line number of the first program (you may have to renumber the second program). Now, do the following sequence of steps directly from the keyboard (no line numbers!):

```
a)  PRINT PEEK(25)          (remember the value you get)
b)  CLOAD"first program"
c)  PRINT PEEK(28)
    If this value is less than 2 then
        d) POKE 25,PEEK(27)-1
        e) POKE 26,PEEK(28)+254
    If this value is equal to or greater than two then
        d) POKE 25,PEEK(27)
        e) POKE 26,PEEK(28)-2
f)  CLOAD"second program"
g)  POKE 25,value from step a
h)  POKE 26,1
```

Locations 25 and 26 contain the address of the beginning of your BASIC program. So after we load in the first program, we make locations 25 and 26 point to the END of the first program, load in the second program, then move the beginning of BASIC pointer back to the beginning of the first program.

More rumors to spread and retract...

For a while, R/S was putting the faster chips in CoCo (68B09 and 68B21's) so that youze guys could give your machine a Vitamin E shot (POKE 65495,0). It now appears that it was a temporary thing due to a shortage of the vanilla 6809 and 6821 chips. Easy does it (I guess)...

There's colors in PMODE 4...

I had a good talk with George Ziniewicz of Scottsdale, Arizona the other day. He told me that it was not my imagination that there were more than 2 colors in PMODE 4 (the highest resolution) and that these colors were actually brighter than the colors I got in other PMODEs. Not being a hardware person, I may not have absorbed what he told me correctly (a technique I mastered in school), but you'll get an idea.

When CoCo wants to display something in color on the screen, the video display generator (VDG) in conjunction with the color modulator outputs a signal to your TV. This signal triggers the three color 'guns' in your picture tube, and they, in turn, fire at the same point on the screen in order to produce the desired color. Now if you change to PMODE 4, due to the way most (note - it may not be the same for all) TVs are set up, just one of the guns may fire. This, in effect, saturates the screen with just one, bright color. So far I have seen this happen during PCLS, PUT, DRAW, and PAINT. Try the following program to see this feature:

```
5 PCLEAR 4
10 FOR I = 1 TO 8
15 REM  GET COLOR PMODE, SET COLOR, AND SWITCH TO PMODE 4
20 PMODE 3,1 : PCLS I : PMODE 4
30 FOR J = 1 TO 100 : NEXT J
40 NEXT I
50 GOTO 10
```

As of this time, I don't know how to control these colors enough to know how to get them consistantly (the colors in October's Motorcycle Jump were an accident). Experiment!

Put a hex on it...

Changing from hexadecimal to decimal is easy! The following line will do it when A$ contains a hex number in string form:

```
PRINT VAL("&H"+A$)
```

This can be really helpful when READing hex values from DATA statements.

What if it's a Picasso?

If you would like to save your graphic screen to tape for posterity, there is an easy and quick way. First, for this particular technique (to make it easier on me), be sure that your computer has four pages PCLEARed for graphics. Then, when you are ready to save the picture off to tape, type the following line from the keyboard (or have it as a line in your program):

CSAVEM "filename",PEEK(188)*256,PEEK(188)*256+6143,380 (location 380 contains a machine language RETURN in case you accidentally type EXEC after reloading the graphic)

Now to get the graphic back, have the following as a program line (if you are in the graphic mode while loading this, you can watch it load in) or type it in from the keyboard:

CLOADM"filename"

Note - for added effect, if you have the above line in a program, you may want to listen to it load, too (AUDIO ON)!

We have a tree, we're talking about what gifts to get each other, and we got this issue out before the 25th! Happy Holidays!

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