

NOTES FOR



NUMBER 20

May 1980

PUBLISHER

Ron Jeffries

EDITORIAL DIRECTOR

Glen Fisher

EDITOR

Peter Stearns

ASSISTANT EDITORS

Diane Grove

David Platon

CIRCULATION

Jann Jeffries

Carol Peterson

Published by:

**THE CODE
WORKS**

Box 550

Goleta, California 93116

805-683-1585

© 1980 The Code Works

All Rights Reserved

A CURSORY GLANCE

Commodore has started shipping 8K Pets with four holes drilled in the circuit board to prevent users from expanding the memory capacity to 16 or 32K. As you might guess, some users (and dealers) are very unhappy with this new policy. Funny thing: Radio Shack and Apple seem to survive the trauma of users adding memory to their computers. I can only hope that this unfortunate decision was made by one of the group of ten or fifteen employees that recently left Commodore, and that the new crew will change the policy right away. I can understand the company wanting to make a nice profit on the extra memory, and suggest that they do so by offering a memory upgrade service.

Commodore has a lot of interesting products that we'll see over the next several months. At the recent National Computer Convention show at Anaheim they showed a pre-release version of the language Pascal. From the demonstration that I saw, it looks promising. At this time it does not have random-access files, although they will be added later. The compiler reads Pascal source code and produces what is called 'P-code', (which is designed to be small and run quickly). The P-code is then interpreted by a 10K run-time system. The cost is expected to be about \$250.

They also showed the new 'cheap' floppy disk. The drive is somewhat slower than the current 2040, and only holds about 130K characters per disk. The new drive will be able to read disks that were produced on a 2040, but will not be able to write disks for the 2040. The price hasn't been determined yet, but don't be too suprised if the single drive model costs about \$600. Don't hold your breath waiting for one, because it will be at least September or October before you can hope to see one at your local dealer. (Minor sidelight: the new floppy will have only one 6502 microprocessor instead of the two micros that are in the 2040.) A dual 8-inch double-sided floppy system called the 8062 was also displayed at the show, although I did not see it running. It will store three million characters of data, and may well be a lead-in to a hard disk system. (Pretty soon, you will need a computer with a floppy disk just to keep track of all the variations of floppies (and ROMs) that Commodore is providing!)

There may be some excitement at the Commodore booth at the Summer Consumer Electronics Show in Chicago next month. It looks like they will have the new color Pet ready by then. (Although MOS Technology has had problems producing the custom TV controller chip.) There is speculation that the color Pet may be sold with 16K of memory for about \$600. Another possibility is that Commodore will also show a new black and white computer that will be much cheaper than current Pets.

Remember the "new, improved 04 ROM" for the Commodore printer that was mentioned in Cursor 18? Well, it seems that the 04 fixed some problems, but introduced even worse problems. We hear that they are hard at work on the 05 ROM for the printer, and are using the 03 ROM temporarily for current production.

CURSOR 20 HAS THESE PROGRAMS: (Program names ending with '!' use CB2 sound)

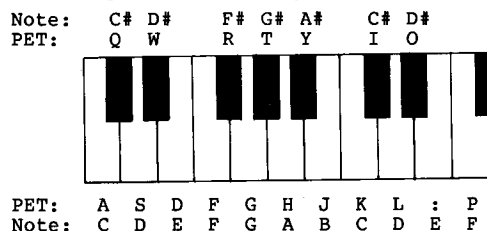
COVER20	Plaid pattern. Graphics by Peter Stearns.
MUSIC!	The toy piano of the future. By Brian Sawyer.
BETS	Play "indian poker". By Randall Lockwood.
CHECKERS!	The Pet plays a modest game of checkers with you. By Tom Skibo.
CURVES	Display interesting patterns on the screen of your Pet. By Dave Goforth.
EQUIP	Maintain an equipment inventory.

Distributed in England by:
AUDIOGENIC Ltd.
P.O. Box 88
Reading, Berkshire

Distributed in Japan by:
SYSTEMS FORMULATE Corp.
Shin-Makicho Bldg., 1-8-17
Yaesu, Chuo-Ku, Tokyo 103

MORE ABOUT THE PROGRAMS

MUSIC! With this program you can enter music at the keyboard of your Pet, and hear the notes as they are displayed on the screen. The picture below shows how the musical notes are represented on the Pet keyboard. (On the business keyboard, a semi-colon is used instead of a colon, due to the different placement of the keys.)



Other keys used: press [SPACE] to enter a rest (silence), and press [DELETE] to erase the previous note or rest entered. (You can delete as many notes as you like, up to the top of the screen.) The duration of the note is controlled by how long you hold down the key. The shortest note you can enter is an eighth note, and the longest is a dotted whole note.

Enter music by pressing the appropriate keys on the Pet keyboard. For example, to enter the notes "C D E F", press: A S D F. You will hear each note, and see it on the screen. If you make a mistake (or change your mind), just press the [DELETE] key. Each time you press it, one more note will disappear. When you have entered a few notes and want to hear them played, press [RETURN] to return to the main menu. To hear your composition, select option 2. While it is playing, you can stop it by pressing [RETURN]. When it is done, you will be asked if you want to add more notes. If you type 'Y', then you can enter more notes, or delete notes already entered. You can save your music as a file on tape or disk. The variable FD in line 100 controls the device for files. It is normally 1 for cassette 1, or 8 for the disk unit. If you have a 16 or 32K Pet, you may want to change the variable MS in line 101 which controls how many strings (of 38 notes each) you are allowed to enter.

BETS This game is sometimes called 'Indian Poker'. There are four players: you, and the three shown on the Pet. (Well, you only play three at one time. But there are six different individuals that you may face, each with a different approach to gambling.) Each person is dealt a single card, which they hold above their head. So, everyone gets to see the card except the person holding it! Each person has \$200 as the game begins. The ante (amount each player must put in the pot when a new hand is dealt) is \$10. You can bet either the same amount as the previous player (by just pressing [RETURN], increase the bet, or 'fold' (give up) by entering a bet of zero dollars. The most any player can raise the current bet is \$25. So, if Lucy bets \$11, you can bet as much as \$36 (\$11 plus the \$25 limit). After all bets are placed, the person with the highest card wins the pot. (Ace is high.) If two players win, they split the pot. The game ends when any player runs out of money, or when a player can't make the ante for the next hand.

CHECKERS! You play checkers against the Pet in this program. Enter moves by typing the beginning square, a dash, and the ending square. For example, to move from 50 to 53 you type '50-53'. You can indicate a double jump move by typing a dash at the end, e.g. '41-27-', which will move your piece to square 27, and then ask you for the second part of your jump. Note that the starting square for the second jump (27 in this case) must be typed again. You may keep jumping as long as you like by adding dashes to all of your jumps. In the case of a stalemate, or if you get tired of playing, type 'QUIT'. Since Checkers! plays a cautious game, it won't be much of a challenge for good players.

CURVES This program plots pretty patterns on the screen. It draws two types of patterns: hypocycloids and trigonometric loops. "Hypocycloid" is a fancy name for the pattern you get by showing the path of a pencil stuck through a wheel which is rolling within a larger wheel. (The Spirographtm toy draws such patterns.) The trigonometric loops show the points that satisfy the equation $R = F(M * A)$, where R is the radius, A is the angle, M is an arbitrary multiplier, and F is a trigonometric function that you choose.

EQUIP Equip helps you maintain a list of equipment with serial numbers, date purchased and cost. (Don't want to keep an equipment inventory, you say? Not to worry! You can change the headings to anything you like.) When EQUIP is run, it asks for the date. Enter the date any way you like, as it is simply stored with your data file to show when the file was last changed. The first thing you need to do is 'Create' a new file. When you select the 'Create' option from the menu, you will be asked for a file name, and a short description of the contents of the file. Next, use the 'Add' option to enter your information. (The only 'required' information about an item is its description. All of the other fields are optional.) EQUIP sorts each item after you add it. Sometimes you'll see it printing dots on the screen while it sorts the item you just entered. It wants to let you know that something is happening! After you enter items, you can list them on the screen or on a printer. (A printer isn't essential, but it is very useful!) You can also Change, Delete or Add items. The 'Change' option asks what item you want to change, and then displays that item one field at a time. If you don't want to change a field, press [RETURN]. Otherwise, type the new information for the field. 'Delete' asks you which item to delete, and then displays that item and asks you to verify that indeed you do want it deleted.

There are three things you will want to do with EQUIP files: **Create** a brand new file, **Read** an existing 'old' file into the Pet, or **Save** a file on tape or disk. Let's take the case of a new file first. When you run EQUIP, if you are planning to create a new file, use the 'Create' option as the very first thing you do. (Should you forget to do so, and instead Add a lot of data first, don't panic! You can still save the file with the 'Save' option, although the file name will be 'NONE'.) The 'Create' option just sets up a new file, it isn't used to actually write the information on the disk or tape. Note that 'Create' warns you once if you try to set up a new file after adding data, (instead of before). Please realize that the 'Create' command completely erases any information in the computer, once you successfully give it. The 'Save' option is what actually writes the data tape for EQUIP. Once you 'Save' an EQUIP data file you can 'Quit'. Later, when you want to load that data into the computer, use the 'Read' old data option. There are several checks that prevent you from reading a non-EQUIP file, and you are warned accordingly. If you store data on tape, you should always keep three copies: the current file, the immediately previous copy, and the one prior to that.

The variable FD in line 100 specifies the device to use for files. (Change it to 8 if you have a disk) The variable MI in line 100 sets a limit on the number of items that your file can hold. For 8K Pets, it is set to only 12! Although EQUIP can be run on an 8K Pet, we don't think that it is practical on such a small machine. However, we went to a lot of trouble so that our 8K Pet subscribers can at least load EQUIP and look at the code. Those of you with more memory should change the value of MI in line 100 to a limit you select. Before each 'Add' or 'Change', EQUIP checks to see that at least MN bytes of memory are available. If not, it says 'Out of Memory!', and returns you to the menu. This provides some protection against memory overflow, although you can still get in trouble if a 'Change' or 'Add' results in more than about MN/2 net additional characters. You can be as conservative as you like by making MN a larger value. You can change what fields are called, how many fields there are, and where they are displayed on the printer and the screen by modifying the DATA table at line 49500. Each entry has a field name, followed by a number which is the column where that field will be printed. A negative column forces the field to the following line. For example the entry **COST,-10** would cause the item "COST" to be displayed on the next line at column 10. (Note that all column positions are relative to the margin required at the left to show the item number.)

OTHER NOTES Once upon a time you could say "POKE 59458,PEEK(59458) OR 32" on certain models of the Pet and speed up the display on the screen. We used it in a few programs and all went well for several months. But after Cursor 19 was shipped we got calls from people with brand new Pets complaining that the program FROG! didn't work correctly. Since we had tested FROG! on both old and new ROMs before it was released, the phone calls were a surprise. We called Commodore, and found out that a 'minor' change in the hardware causes the problem. So, we have ripped that POKE out of FLIGHT! (Cursor 12), JOUST (Cursor 18) and FROG! in Cursor 19. (Poetic justice department: the folks at Commodore were hurt by the change, too: their WORDPRO program also used that POKE.)