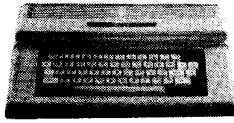
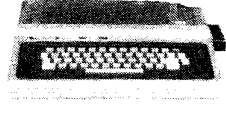


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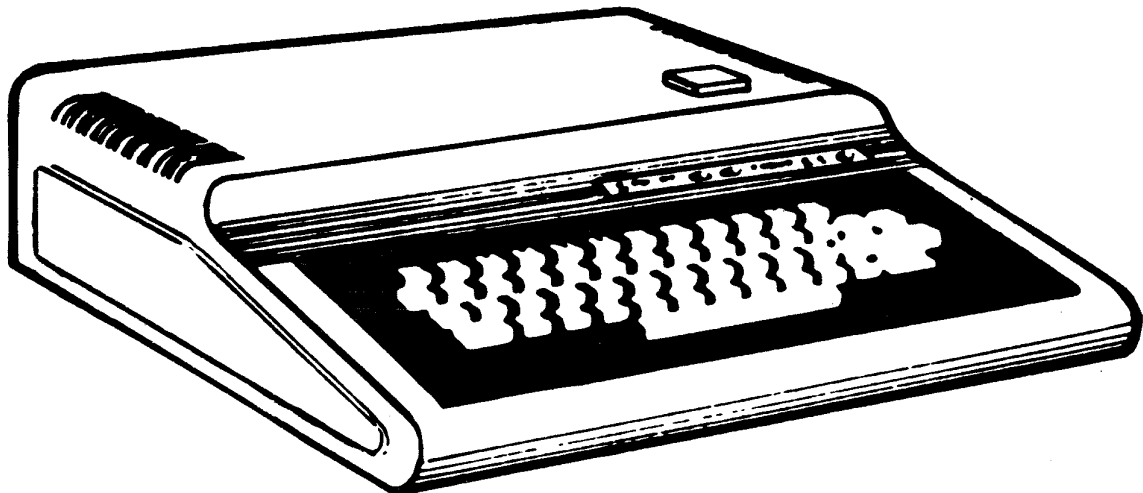
THE COLOR COMPUTER USERS MAGAZINE



May, 1986

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Issue B6



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# Back Issues

BACK ISSUES OF THE 'COCO ADS' WITH THE PROGRAMS ON TAPE OR DISK ARE NOW AVAILABLE TO YOU. THE PACKAGE COMES WITH THE NEWSPAPER AND TAPE OR DISK WITH THE PROGRAMS ALREADY TYPED IN AND READY TO RUN. THE FOLOWING ARE AVAILABLE.

- ISSUE A1
- YAHTZEE - GAME OF DICE, LIKE THE GAME YAHTZEE
  - SORT - BASIC BUBBLE SORT DEMO
- ISSUE A2
- SCREEN DUMP - DUMPS SCREEN TO PRINTER
  - SEE - DISK DIRECTORY UTILITY
  - CALENDAR - PRINT TO PRINTER A CALENDAR
  - LABYRINTH - ADVENTURE (VERY GOOD)
  - FINDWORD - WORD SEARCH PUZZLE
- ISSUE A3
- TAPE LIST - PROGRAM NAMES ON TAPE TO PRINTER & ENTER COUNTER #
  - CLOCK - DISPLAYS CLOCK IN CORNER OF SCREEN
  - DISKMAP - DISK UTILITY SHOWS DISK USAGE
  - LIST - LIST TO PRINTER DATA FILES
  - KEYBOMBER - GAME
  - PONG - GAME
  - BOX LABEL - LABEL INSERTS FOR YOUR CASSETTE BOXES
  - DESIGNS - MAKES DESIGNS
  - REMULAK'S - ADVENTURE (VERY GOOD)
- ISSUE A4
- LABELS - MAKES 2 ACCROSS LABELS
  - DATA BASE - 5 PROGRAMS IN THIS PACKAGE OF A VERY POWERFUL DATA BASE PROGRAM.
- ISSUE A5
- LABELS - CENTERS LABELS
  - DATA SPEAK - UTILITY TO MAKE YOUR PROGRAMS LINES TALK
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  - DISK FILE - KILLS FILES ON MULTI-DISKS
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  - HANGMAN - HANGMAN GAME
  - FLIP-FLOP - FLIP-FLOP GAME
  - TRANSFER - DISK UTILITY TO TRANSFER PROGRAMS FROM DRIVE 0 TO 1
- ISSUE A6
- AIR-RAID - GAME
  - GRAPH - BUSINESS MAKES NICE LOOKING GRAPHICS
  - AUTOLINE #2 - BASIC VERSION OF ML AUTOLINE PROGRAM
  - TANKS - GAME OF TANKS
  - RACE-ACE - CAR GAME
  - PERCENT - KEEP STUDENTS AVERAGE
  - BOB DESTROYER- GAME
  - ANIMAL - GAME AGAINST THE COMPUTER
  - COPYTRACK 17 - DISK UTILITY
  - AUTO-WRITE - UTILITY TO MAKE BASIC PROGRAMS

- ISSUE A7
- AIRATTACK - GAME
  - ST. GEORGE - ADVENTURE
  - CASDICE - DICE GAME
  - PURCHASE ORDER - BUSINESS TO WRITE PURCHASE ORDERS-DISK
  - EDUCATION - CALCULATOR UP TO FOUR VARIABLES
  - TRACK MOVE - DISK UTILITY
  - PHONE - KEEP TRACK OF YOUR PHONE NUMBERS
- ISSUE A8
- DISCOOPY - DISK UTILITY
  - CERIFY - DISK UTILITY
  - SCANNER - DISK UTILITY
  - TIME - EDUCATIONAL FOR THE YOUNG TO LEARN TIME
  - MUSIC - HELPS MAKE MUSIC
  - PING PONG - GAME
  - PHONE DIALER - DIAL A TOUCH TONE PHONE THROUGH YOUR COCO
  - PHONE SORTER - SORTS YOUR PHONE NUMBERS
- ISSUE A9
- COMPAC - UTILITY TO REMOVE ALL UNWANTED LINES (REM)
  - DISK LISTER - DISK UTILITY
  - JEWELS - ADVENTURE
  - CASSETTE LIB - FILE PROGRAM FOR YOUR CASSETTE PROGRAMS
  - TITLE PAGE - TO FORMAT A TERM PAPER
  - CHANGE SQUARE - GAME TO MATCH COLOR SQUARES
  - MYSTER ISLAND - ADVENTURE
  - FIG - GAME
- ISSUE A10
- ROM MAP - A LOOK AT YOUR RAM
  - ROLLOVER - UTILITY
  - CODE TABLE - GENERATE CODE TABLE
  - MAZE - BEAT LITTLE GAME
  - MUSIC - HELPS YOU TO WRITE MUSIC
  - ANIMAL DISK - GUESS THE ANIMAL GAME
  - SONG REQUEST - SEE DIFFERENT SOUNDS ON YOUR SCREEN
  - DESTROYER - SNIP GAME
  - SAFE CRAKER - OPEN THE SAFE (GAME)
- ISSUE A11
- TAX ESTIMATE - HELPS ESTIMATE YOUR TAX THROUGH THE YEAR
  - M L T T D - UTILITY TO TRANSFER TAPE TO DISK
  - PARTS INVEN - INVENTORY FILE PROGRAM
  - DATA MAKER - MAKES DATA STATEMENT FROM JUST INPUTS
  - KABOON - GAME
  - DEF NOV - GAME
  - R/C AIRPLANE - GAME
  - MATCH SQU - GAME
- ISSUE A12
- PILOT - UTILITY
  - TEST - UTILITY
  - SCHOOL ADV - ADVENTURE
  - MINI-GEN - GENERATOR TO MAKE YOUR OWN ADVENTURES
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# HELP BOARD

I am looking for the soft-cover book "Color Computer News 1981 back issues. It was last advertised by the Program Store (4200 Wisc ave NW, Wash, DC) on page 2 of the October 1983 issue of Color Micro Journal. I did not get a response from them even with a SASE. To complete my collection, I need either the book or any/all of the 1981 issues of CCN. Also, if there were any published after Aug 1983, I would be interested in them. If you have any of these issues, please write to me with your asking price(s).  
Robert J. Sullivan Jr.  
100 Kerri-Lyn Rd.  
Warwick, RI 02886

-----  
I am looking for some information on a hard disk system for my color computer. I am looking for one that can handle any program, not just those that run only OS9. Does

anyone know of such any that would fit this description? I have Elite Word 64, PBJ version that I would like to put on hard disk and a lot of other programs that are not OS9. Any help please write to:  
Richard A. Foreman III  
13509 S.W. 104th St.  
Mustang, Ok 73064

-----  
I would like to use Tandy's OS-9 Hi-Res Screen Dump program to dump pictures from Micro Illustrator to a SG-10 printer. At present, it appears that the screen dump will only work with Radio Shack printers. All I get are random characters sent to the printer. Any suggestions????  
David M. Compton  
252 N. Main Suffield, Ct  
06078

-----  
I need help. My DMP-105 is printing to slow. It will move to side to side then it takes

about 2 seconds to print. Is there a poke statement to fix it. Jason Munson  
3002 Liberty Tree Lane  
Tuscon, Az 85741

=====

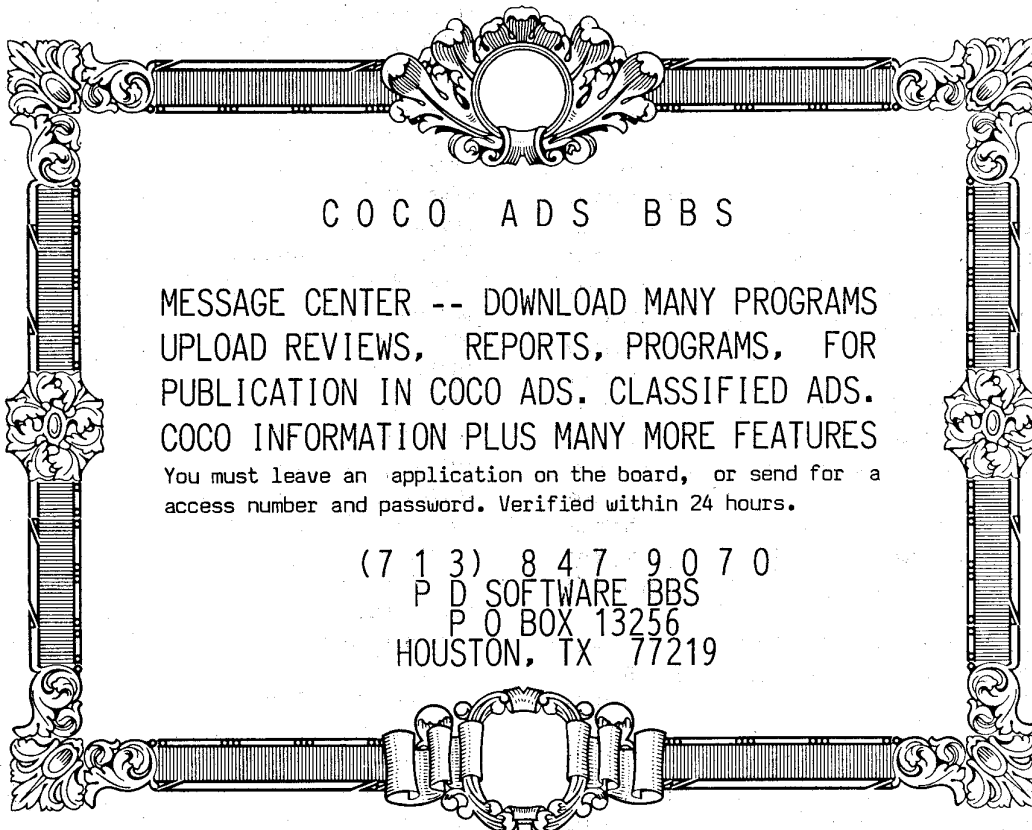
The HELP board is a feature of the COCO ADS for people who would like some help in finding something, help with a program they have, or help with a program that they are writing. Send in your questions to-

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RS3



MODIFIED DOS'S ARE THEY FOR  
YOU?

By Leslie Earl

Hello gang. Today's topic concerns all of us out there in COCO Land, from the earliest beginner to the most experienced user. Almost any one out there who has had a disk system for over two weeks has at least experimented with a modified DOS or DISK OPERATING SYSTEM. Some of you will say "OH NO!" Others will say, "But they are such a pain." Well the good news is they don't have to be a pain, they can be well worth the time and money spent, and once installed can be a great boon to the COCO. The bad news is there are so many to choose from and I hear so much about incompatibility.

Let's start right at the beginning so as not to lose anyone. What exactly is a DOS and what does it do? DOS stands for DISK OPERATING SYSTEM and it does nothing more than control the disk drives. Now many of you will say, "What about all those extra commands." Well they come into play as a secondary function of control, you can't have control without some means of exhibiting that control. Some of the earliest micro's only had a few commands load,save,kill,format and maybe directory. That's right no rename no backup, and no direct file access. In fact some early systems did not even allow file names, you would load and save programs according to which sector the program started on, and boy can you get in trouble fast on a system like that. Imagine saving a program at sector 3 and it saves to sectors 3 thru 15. Now you forget that program runs thru sector 15 and you save your next program to sector 13. Now you have a real mess the first program wants to load sectors 3-15 and when it gets to 13 it is linked to the next program. NOW THAT IS AN EXCEDRIN HEADACHE!

Fortunately for us the COCO has a pretty good DOS with a lot of enhanced features. Well you say if it is such a good DOS then what am I doing reading this? I only said it was pretty good I didn't say it was the best around. Matter of fact there are some modified DOS's around that are much better and I wouldn't even call them great. But most are at least a step above the standard R/S DISK BASIC.

Let's digress a little here and talk about those R/S DOS's. The first R/S DOS 1.0 was brought out a little hurriedly. So R/S did not lose the market to another, now unknown, company which sold the first COCO disk drives. Because of this hurry up method there were some problems with DOS 1.0.

(Commonly called bugs). These bugs are well documented in other articles and could easily take in a whole article in themselves so I won't say much about them here. As the COCO community grew, more and more people complained about these bugs and R/S brought out R/S DOS 1.1. Then the trouble really began. You see a dedicated DOS generally documents the important rom calls for M/L (Machine Language), programmers to use with their own routines. When R/S did this they left several routines undocumented. They warned programmers not to use those undocumented commands. Well the lazy programmers who did not want to write their own routines and the programmers who did not want to waste space with an already written routine used these undocumented calls. When R/S dos 1.1 came out it had maintained the documented routines but had moved some of the undocumented routines. This created total havoc! Some of these programs were doing branches to the wrong places in memory. Much like doing a gosub to a non-existing line, only in M/L you don't get a undefined line error it goes there without question. Thus the problem of incompatibility arose it ugly head!

Now that we have some history behind us we can go on to other more important items. The main issue at hand is probably this incompatibility that we just spoke of. At this point we have discussed two DOS's R/S 1.0 & 1.1. Now while these are different in only a few minor areas they caused a great uproar in the COCO community. A topic of many many hours of debate. This I might add is a great debate topic even now several years after the advent of R/S 1.1, with many great points made on both sides. From these two DOS's sprang many, many more modified DOS's from both R/S 1.0 and 1.1. There is ADOOS a modified 1.0, Colin Stearman DOS, and DOUBLE DOS. Then there is the completely re-written DOS's such as JDOS,SPECTRUM DOS,EDOS2.6, and several others, in both categories. Why so many you say? That is an excellent question, and the answers are many. Mostly these DOS's sprang up due to the fact that many people were very dissatisfied with the R/S DOS. It lacked many features that programmers as well as users hungered for, such as auto line numbering, and error trapping for Basic programs, use of the full 40 tracks available on most disk drives, use of double sided drives, and of course the many bugs that existed in the R/S DOS. Some of which were very bad some only an annoyance. Let's see where were we? Oh yes compatibility. Now we have opened a real can of worms. While most

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RS5

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of the modified R/S DOS's are at least mostly compatible with the DOS they were modified from none are 100% compatible, and the completely re-written DOS's may be compatible only in BASIC, with incompatibility even there in their error trap methods.

The reason that I first went to a modified DOS was to get all of the added commands. It is great to be able to type AUTO and never have to worry about forgetting to put a line number in front of that long string of basic commands and having to redo the whole line, (I only forget the line number when the line is over 50 characters long or longer). There is also the command for loading and executing machine language programs. I really enjoy being able to use all 40 tracks of my drives and also the use of the back side of my double sided drives. But the real reason that I now see for going to a modified DOS is the fix of what I consider to be the worst bug in the R/S DOS. The dreaded head banger! I am sure that all of you upon power up have heard your drive come on, grind, crunch, and then make a noise like a hammer tapping at the side of your disk drive. Each time you sit there and cringe until drive finally finds and reads the directory. The truth of the matter is this banging is just as bad as it sounds. Every time you hear that noise your disk drive is slowly knocking itself out of alignment. Before long you are having trouble reading other peoples disks and they are having trouble reading yours. Never fear there is always someone out there that will align your drive for a mere 35 or 40 dollar\$. And we all know it is more fun to get your drive aligned than that new TOM MIX game right? Wrong!! This one feature alone could pay for the price of a modified DOS. This problem rear's it ugly head because of the way R/S DOS places the drive head on track 17. This is because of the unique way in which R/S reads and writes to the disk. Most common practice for writing to the disk starts at track 0 and moves in to the higher tracks. R/S decided that if they placed the directory in the center of the disk and then made disk access to the closest available track this would save disk access time. A right fine idea but that leaves the read head located directly over the directory at power off and on. I am sure that all of you disk owners at one time or another turned on your system only to find the directory missing from your most prized disk. This is due to an electrical impulse to the head at some powerup situations with the head over track 17 there goes the directory. Also the drive

expects to power up on track 0 so at power up the drive does not know where the head is located. It immediately jumps to track 0 to establish a starting point and then R/S immediately sends it back to track 17 and in the process bangs the head several times. Possibly even glitching the directory in the process. The head banging problem is fixed in most all of the modified DOS's. This one feature could be worth the price of a DOS modification in itself.

Which brings me around to another point that I am sure has crossed many of your minds. Even if I go to a modified DOS don't I still have to boot in R/S DOS? Another excellent question, but the answer is no. Any DOS can be burned into an eprom and placed into your controller for generally a very small fee. These can even be piggy backed so you still have R/S for that one in a million program that won't run on a modified DOS.

So the final decision rests in your hands. That is not only do I want to run a different DOS, if so which one, and when I reach a decision where can I get an eprom burned? As for the first two questions those are entirely up to you my only recommendation is that you check out the features of some of the different DOS's and decide which one best suits your own needs. As for where to get an eprom burned most of the programs will give you an idea of where in your area to look. If you ask around on your local bbs you can probably find someone with an eprom burner. There ar also several companies around who can burn these eproms. If you still run into a blank then send a SASE to: Leslie Earl 22118 Pearl Lake Dr. Katy Tx 77449 and I will send you a price schedule of what I would charge for eprom burning. Incidentally I am probably less expensive than most commercial firms. Also if any of you have questions or comments both are welcome. I can also be reached on the Coco Adds BBS..s I would charge for eprom burning.

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Try-0-Byte  
A Review  
By Bill Smith

I have been doing my own taxes for as long as I have had taxes to pay. In the beginning I only used the 1040A form, but for the last 6 years I have been forced to use the 1040 long form and many of the assorted schedules associated with the long way of doing your taxes.

For the past three years I have been using my computer to help me figure my taxes, along with various software designed for use with the COCO.

I may not really be the one to do this review, due to my expecting too much from a tax preparation program.

The last program on the disk is probably the best part of the hole package. It is the estimating program for future taxes. You are asked for future estimates on items such as, income, deductions, etc, and the program estimates you future taxes based on the 1985 numbers. If your income or expense status changes, you just pull out the program enter your new estimates and bingo your new estimated taxes.

The documentation for the program includes instructions for use of the program with every configuration of the COCO, including the new 16K basic machines. The documentation also warns you that you should go through the different schedules a few times before you try to get a finished copy.

Over all the instructions for the package is very good. It explains how to set the baud rate for for non radio Shack printers. They also have a short description of each form and schedule as you go along. If you keep the instructions open beside you as you go along you shouldn't have too many problems.

The program does not handle errors you make while you are entering data for any of the schedules, but the documentation warns you about this before you start, so be prepared to completely redo any forms or schedules you make an entry error in.

The copy of Try-0-Tax that was sent to me had three syntax errors in it that hindered me some. If I had been a user only, as many of our group are, I would have had to made many phone calls to the company to correct these errors. They were minor errors but when you buy a software package you expect these small bugs to be worked out.

In other programs I have worked with, the tax owed is figured by the program, with a formula in the program so you don't have to look up the taxes owed in a table. In this program you have to determine your own taxes from the table and enter them in the program. It seems a shame to have a number crunching machine, like COCO and not take advantage of it's capabilities.

The program only displays your figures on the printout to the nearest dollar and rounds off the cents. The IRS will accept your tax forms in integer form, with no cents entered, but some people like to see these pennies entered in the form and it would be a very simple matter to have had this ability added to the program. The forms produced by the program can be sent to the IRS just the way they are printed, that is every form except the 1040. This information must be transcribed to the IRS printed 1040 form. But all the other forms may be sent to the IRS, as is. I did like the multiple entry loop the program has, so you may enter many items from any, one section and the computer will figure the totals for you. Such as when you are entering multiple entries from the income section of the W-2 forms and taxes withheld, etc.

This program has the main menu set up in the order of forms as they should be filled out. Information from some forms is required in order to fill out other forms. If you fill out the forms in the order they are presented on the MAIN MENU you will have all the information from the forms that should be filled out first for the subsequent form requiring the information.

The program covers every form and schedule that most tax payers will ever need and then some.

All in all if you have the time to sit down and become familiar with the program, before you start any serious tax calculations, it's not a bad program to own.

There are provisions by 'TRY-0-BYTE' to up grade last years tax program for the 1985 taxes, so I would think they will make arrangements to up grade this package for the 1986 period.

Available throuth:

Try-0-Byte  
1008 Alton Circle  
Florence, SC 29501  
(803) 622 9500



Program of the month  
Eric G. Robichaud

This month's column is dedicated to those who have experienced the agony of an accidentally KILLED program, or a trashed disk (In other words, anyone with a disk system). What I am presenting here is THE utility program--one which will retrieve KILLED files as well as perform a few other functions--and a full explanation of the logic involved. Up until now, retrieving a KILLED file was a difficult task, requiring an expensive disk-zap program, and a full knowledge of how the disk system works--and there a great chance of making the situation worse than it originally was! "RETRIEVE" was designed to operate on its' own with a minimum of user input. "RETRIEVE" is the supreme disk utility (can you tell I wrote it?) because it doesn't require forethought. What I mean is this: there are many utilities around which will format a new disk to 36 tracks, then can be used to stash a copy of the directory on this "hidden" track to be recalled later when necessary. This method has many very real drawbacks. As Murphy's Law suggests, the lost file will always be on the disk that wasn't initialized for 36 tracks, so these programs aren't of any help. Also, what about the thirty or forty disks I already have programs on? To use one of these programs, I would have to reinitialize all of my disks! Finally there is the nuisance of having to copy an updated version of the directory to track 36 after each new SAVE or KILL. Now that I have made my point, and stated the purpose of my program, let's find out how it does it, and why it can do it.

I will break one of the literary laws, and assume that you know what tracks are, and how they are arranged on a disk. If not, refer to the CoCo Disk Owners Manual which explains this concept. Actually, you might want to get out your manual and refer to Chapter 11 anyway, to get a clear picture of what I am presenting, as you follow along.

The tracks on a disk are arranged with track zero on the outside, counting down to thirty-nine at the center. The CoCo disk system is configured to use only the first 35 of these tracks. Thirty-four tracks are used for storage, such as programs and data, with the remaining one, track 17, reserved for the disk directory. The tracks are referenced in sections called sectors. There are 18 sectors on a track. Nine sectors, which is half a track, comprises what Radio Shack calls a granule.

When a file is KILLED, the information remains in tact on the disk until it is over-written with another program. When a KILL command is executed, all the computer does is remove the program's name from the directory listing, and wipe the pointers which tell the computer where the information is stored on the disk. These pointers are contained in a table called the File Allocation Table, or FAT. The FAT is 68 bytes, or characters, long and serves as a list of pointers. Each of the 68 granules on a disk has a position in the FAT that corresponds to it. The first place, for example, holds a pointer for granule #1, and so on. When a program is stored on a disk, it isn't stored in one contiguous area, but rather is broken up into granule sized blocks and stored wherever there is space. For example, a three granule program may be stored on granules 1,12, and 57. This being the case, it is the job of the FAT to hold the pointers that tell the computer which granule of information to load next. In the above case, the first position might hold the 12, then position 12 might hold the 57, then position 57 would hold the code telling the

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computer that it is the last granule of the file (More on this later).

The smallest block the computer will allocate for a file is one granule. If you save only a short, one statement program, the disk will still allocate a full granule for it. Since there are 68 granules on a disk (34 data tracks x 2 granules) this means that the most programs that could possibly be stored on a disk at any one time are 68.

The first step to retrieve a program is to return it to the directory listing. Sectors 3-11 of track 17 contain the directory entries. Each entry is 32 characters long. The first 8 characters of the entry hold the file name. When it is KILLED, the computer over-writes the first character of the file name with a code 0 which tells the computer not to include this name in the directory listing-but the remaining characters are unchanged which helps us identify the program. After returning the name to the directory listing, the next job is to track down the granules that belong to the file.

When a KILL is performed, the computer goes to the FAT and erases all pointers to where the program is being kept on the disk. The vital clue here is the fourteenth character in the directory entry, which is the pointer to the first granule of the file. After a KILL, this piece of information is NOT erased! From this we get the next one, then figure the next, etc., until they all fall into place (Domino theory). This is the area where a little user input is required. I say little because all that you must do is answer simple yes/no prompts. The computer displays a granule and asks if this is part of the file you are trying to recall. All the computer displays is the "empty" granules, some of which are your discarded program.

As mentioned earlier, the smallest block set aside for a file is one granule, so the last step in restoring the file is to determine just how much of the last granule is used. The computer figures this out automatically by subtracting 192 from the value held in the FAT for the last granule. The remainder is the number of sectors of the granule that are used. If the value at 57, using the above example again, is a 196, then subtracting 192 will yeild a 4-so 4 sectors of the gran. are used, and 5 remain empty. If you wish to get really technical, just as data is saved in granule blocks, it is also allocated in sectors.(within the gran.) Bytes 14+15 (Char. pos 15+16 since 0 is a

10

byte) of the directory entry tells how much of the last sector in the granule contains data.

Well, this is the logic behind the program. (it is easier than it sounds) If you have any questions or comments about either this particular article or the column in general, you can write me at 10 Stoneham Drive, Woonsocket, RI 02895 (inslude SASE if you want a reply) or drop a line to the "letters to the editor" c/o this magazine. I have enthusiastic plans for the future, so stay tuned...

```
10 '*****
20 '* KILLED FILE RETRIEVER *
30 '* BY ERIC ROBICHAUD *
40 '* 3/05/86 *
50 '*****
60 '
70 CLEAR2000
80 V=0:DIMG(68),Z(68)
90 GOTO 980
100 '-----restore name to dir
110 CLS:PRINT:PRINT" NAME OF PROGR
AM TO RETRIEVE ":PRINTSTRING$(32,4
5):LINEINPUT" ";PR$
120 IF LEN(PR$)<1 THEN 110
130 IFLen(PR$)=8 THEN 160 ELSEFOR
Z=(LEN(PR$)) TO 7
140 FORZ=LEN(PR$) TO 7
150 PR$=PR$+" ":NEXT
160 PRINT:PRINT" MAKE SURE DISK I
S IN DRIVE ";V:PRINT:LINEINPUT"
HIT <ENTER> ";E$
170 FORX=1 TO 600:NEXT
180 '----read, then search
190 CLS
200 FORZ=3 TO 11
210 DSKI$V,17,Z,A$,B$
220 PRINTA$:PRINT:PRINTB$
230 E$=A$:FL=1:GOSUB280
240 E$=B$:FL=-1:GOSUB280
250 NEXT Z
260 CLS:PRINT:PRINT" SORRY, BUT I
DON'T BELIEVE YOU'RE PROGRA
M IS ON THE DISK.(I CAN'T
FIND IT)"
270 FORX=1TO 3000:NEXT:GOTO980
280 FOR L=1 TO 128 STEP 32
290 Z$=MID$(E$,L,8)
300 IFZ$=PR$ THENPRINT:PRINT" YOUR
PROGRAM IS ALREADY OK!":FORD=1TO
3000:NEXT:GOTO980
310 IF Z$=CHR$(0)+RIGHT$(PR$,7) TH
EN 340
320 NEXT:RETURN
330 STOP:'----ERROR???
340 '
350 IF FL=1 THEN MID$(A$,L,8)=PR$:
```

```

GOTO380
360 IF FL=-1THEN MID$(B$,L,8)=PR$:
GOTO380
370 STOP: '----ERROR???
380 DSKO$V,17,Z,A$,B$
390 CLS:PRINT:PRINT" YOUR PROGRAM
HAS BEEN RESTORED TO THE DISK
DIRECTORY.":FORD=1TO3000:NEXT:GOTO
980
400 '----list disk directory
410 CLS:PRINT" DISK DIRECTORY FOR
DRIVE ";V:PRINTSTRING$(32,45):PRIN
T:Y=1
420 FORX=3TO11:DSKI$V,17,X,A$,B$:F
ORD=1TO128STEP64:PRINTY;" " ;MID$(
A$,D,8),(Y+1);" " ;MID$(A$,D+32,8)
:Y=Y+2:IF(Y/15)=INT(Y/15)THEN LINE
INPUTI$:NEXTD ELSE NEXTD
430 FORD=1TO128STEP64:PRINTY;" " ;
MID$(B$,D,8),(Y+1);" " ;MID$(B$,D+
32,8):Y=Y+2:IF(Y/15)=INT(Y/15)THEN
LINEINPUTI$:NEXTD ELSE NEXTD
440 NEXTX
450 PRINT" HIT <ENTER> TO CONTI
NUE"
460 I$=INKEY$:IFI$=""THEN460ELSE98
0
470 '-----fix fat
480 CLS:PRINT:PRINT" FIX FILE AL
LOCATION TABLE":PRINTSTRING$(32,45
)
490 PRINT@160," DO YOU HAVE A HARD
COPY OF WHAT THE FAT SHOULD LOOK
LIKE?":PRINT:LINEINPUT " ";D$:IF
LEFT$(D$,1)="Y"THEN 900
500 '---figure out fat
510 CLS
520 PRINT:PRINT" WHAT IS THE PROGR
AM'S NUMBER AS LISTED IN THE DIR ?
(ENTER <DIR> IF YOU DON'T KN
OW.) ";:LINEINPUTI$:IF I$=""THEN51
0
530 IFI$="DIR" THEN410
540 '-figure which sector of dir
550 D=VAL(I$):IFD<1 OR D>68 OR D<>
INT(D) THEN510
560 IF (D/8)=INT(D/8) THEN N=D/8:G
OTO580
570 N=INT(D/8):N=N+1

```

```

580 S=(N+2)
590 DSKI$V,17,S,A$,B$
600 '----figure start gran
610 I=INSTR(1,A$,PR$):J=1:IFI=0 TH
ENI=INSTR(1,B$,PR$):J=-1
620 I=(I+31)/32:I=((I-1)*32)+1)+1
3
630 IFJ=1THEN Z$=MID$(A$,I,1) ELSE
Z$=MID$(B$,I,1)
640 Z(0)=ASC(Z$)
650 '-figure subsequent gran
660 '-----which gran are free?
670 DSKI$V,17,2,A$,B$:G=-1:FORX=OT
067:IFASC(MID$(A$,X+1,1))=255 THEN
G=G+1:G(G)=X
680 NEXT
690 '-----which gran are part
of file?
700 Z=1:FORX=0TOG
710 T=INT(G(X)/2):IFG(X)>33 THEN=
T+1
720 IF G(X)/2=INT(G(X)/2) THEN S=1
ELSE S=10
730 CLS:DSKI$V,T,S,A$,B$:PRINTA$:P
RINT:PRINTB$:PRINT:LINEINPUT" IS T
HIS PART OF THE PROGRAM YOU AR
E TRYING TO RECALL? ";H$:H$=LEFT$(
H$,1)
740 IFH$="N" OR H$=""THEN 790
750 IFH$<>"Y" THEN730
760 Z(Z)=G(X)
770 IF Z(Z)=Z(0) THEN 790
780 Z=Z+1
790 NEXTX
800 IF Z=1 THEN 840
810 '---restore first gran
820 DSKI$V,17,2,A$,B$:FORX=0TO(Z-1
):MID$(A$,Z(X)+1,1)=CHR$(Z(X+1)):N
EXT
830 DSKO$V,17,2,A$,B$
840 '--restore last gran to fat
850 T=INT(Z(Z-1)/2):IFZ(Z-1)>33 TH
EN T=T+1
860 IF (Z(Z-1)/2)=INT(Z(Z-1)/2) TH
EN S=1 ELSE S=10
870 FORX=S TO S+8:DSKI$V,T,S,A$,B$
:IFA$=STRING$(128,255)THEN890
880 NEXT
890 S=(X-S)+192:S$=CHR$(S):DSKI$V,

```

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RIDE OF 'FAT FINGERS  
'OR' COMPUTER WIDOW"  
0600-----ZZZZZZZZ-CLICK,ZZZZ  
ZZZZ-CLIK--ZZZZZZZ-----CLIK- -  
---

WHATS THAT,? SNORING? NO.....  
ALARM CLOCK? NO...TERMITES--  
WRONG AGAIN---OH, WELL TIME TO  
GET UP ANYWAY---. THE USUAL  
MORNING GREETING FROM MY OTHER  
HALF AS HE SITS IN FRONT OF  
THE 'GOLDEN COCO' CONSISTS OF  
"GOOD MORNING" AND A KISS ON  
THE LIPS (ALMOST!!) AFTER ALL  
DONT WANT TO MISS ANY THING ON  
THE SCREEN.

0700-TIME TO LEAVE FOR WORK,  
BUT WITH OUR CHILDREN GROWN &  
GONE, I KNOW WE WILL COME HOME  
AND HAVE THE EVENING JUST TO  
OURSELVES (AH YES, JUST THE  
THREE OF US, HE, ME AND THE  
COCO!)

1700 - HOME AGAIN----PEACE &  
QUIET, WITH THE EXCEPTION OF  
COURSE, OF 15-20 "TURKIE CALLS  
"AND A FEW PHONE CALLS FROM  
THE EVER FAITHFULL USERS (ONLY  
DURING DINNER OF COURSE!)  
PICKED UP THE DISHES AND DID A  
LITTLE HOUSE WORK, NOW I CAN  
WATCH SOME T.V. AND DO SOME OF  
THE WORK I BROUGHT HOME FROM  
THE OFFICE.

FAT FINGERS IS ON THE PHONE  
AGAIN DISCUSSING A VERITY OF  
INTERESTING TOPICS --- ALL  
SPELLED 'COMPUTER' - OH DEAR,  
THEYER REALY INVOLVED, (AND  
LOUD!!) - TURN UP THE T.V.  
AGAIN. MAYBE IF I TURN IT UP  
AGAIN HE'LL GET THE POINT.  
---HOORAY IT WORKED (FOR A  
MINUET ANYWAY). WELL NOTHING  
MUCH LEFT ON T.V., DONE WITH  
MY WORK AND CONVERSATION IS  
LIMITED SO I GUESS I'LL TURN  
IN-----

2200--ANOTHER MISLAIED 'KISS'  
A 'GOODNIGHT' AND OFF TO  
BED-----.

MRS.FAT FINGERS

-----  
\*NOTE\*

FROM FAT FINGERS

I DONT BELIVE ANY OF THAT  
(WELL MABIE SOME WELL MABIE  
HALF, OK, OK ALL OF IT,  
HEHEHE)

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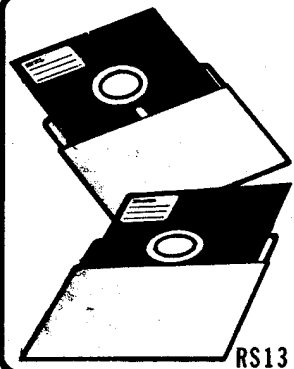
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# P O O L

So you want to learn to play pool. Now your computer will help you learn all those angles and bank shots with this POOL program. Just aim, by using your joystick, and press the fire button and watch the ball go. Full instructions are in the program.

This program was donated by:

C-CUG 1025 4th St. NE New Philadelphia, Oh 44663.

```

10 'POOLGAME'
20 CLEAR80: DIM N$(11), Q(3), QX(3), B
(3), BX(3), NX(3), C(1), CX(1), PX(5), P
Y(5), XN$(5), DG(5), P(5): IC=1
30 PMODE3, 1: PCLS1: IF PEEK(&HC000) <
>68 THEN POKE65495, 0: DRAW" C2; BMB6,
5; U2L6D5R6D5L6U2; C4; BM90, 3; R6D10L6
U10; C3; BM100, 3; D10R6U2; C4; BM110, 3;
R6D10L6U10; C2; BM140, 3; R6D5L6D5U10;
C4; BM150, 3; R6D10L6U10; BM160, 3; R6D1
0L6U10; C3; BM170, 3; D10R6U2"
40 IF IC=1 THEN 50 ELSE 90
50 PMODE4, 1: PCOPY1T04: PCOPY1T02: PC
OPY3T01: SCREEN1, 1
60 PLAY"V31L401CC+L8D": PCOPY2T03: P
COPY1T02: PCOPY1T04: PLAY"L4A+": PCOP
Y3T04: PCOPY3T02: PCOPY1T03: PLAY"L8D
": PCOPY2T03: PCOPY1T02: PCOPY1T04: PL
AY"L4A+": PCOPY3T04: PCOPY3T02: PCOPY
1T03: PLAY"L8D": PCOPY2T03: PCOPY1T02
: PCOPY1T04: PLAY"L4A+": FORI=0T0100:
NEXTI
70 PLAY"LBA+02CC+D01A+02CL4DL801AL
402C01A+": FORI=0T0400: NEXTI: IC=0: C
LS(3): PRINT@160, STRING$(32, 202); : P
RINTSTRING$(32, 211); : PRINTSTRING$(
32, 143); : PRINTSTRING$(32, 220); : PRI
NTSTRING$(32, 202); : PRINT@224, "
    P O O L G A M E": SCREEN0, 1
80 GOTO30
90 DRAW" BMB, 16; C4; R240D160L240U160
; BM16, 24; R224D144L224U144; BM35, 32;
R186; BM232, 43; D106; BM221, 160; L186;
BM24, 149; U106"
100 LINE(29, 26)-(36, 33), PSET: LINE(
18, 37)-(25, 44), PSET: LINE(25, 44)-(3
6, 33), PSET: LINE(220, 33)-(227, 26), P
SET: LINE(231, 44)-(238, 37), PSET: LIN
E(231, 44)-(220, 33), PSET: LINE(220, 1
59)-(227, 166), PSET: LINE(220, 159)-(
231, 148), PSET
110 LINE(231, 148)-(238, 155), PSET: L
INE(36, 159)-(29, 166), PSET: LINE(36,
159)-(24, 148), PSET: LINE(24, 148)-(1
8, 155), PSET: CIRCLE(24, 32), 8, 4, 1, .3
75, .875: CIRCLE(128, 32), 10, 4, .9, .5,
1: CIRCLE(232, 32), 8, 4, 1, .625, .125: C
IRCLE(232, 160), 8, 4, 1, .875, .375

```

```

120 CIRCLE(128, 160), 10, 4, .9, 0, .5: C
IRCLE(24, 160), 8, 4, 1, .125, .625: PAI
NT(24, 32), 4, 4: PAINT(128, 30), 4, 4: PAI
NT(232, 32), 4, 4: PAINT(232, 160), 4, 4:
PAINT(128, 162), 4, 4: PAINT(24, 160), 4
, 4: PAINT(130, 20), 2, 4: PAINT(80, 30),
3, 4: PAINT(170, 30), 3, 4: PAINT(80, 165
), 3, 4

```

```

130 PAINT(170, 165), 3, 4: PAINT(235, 1
28), 3, 4: PAINT(20, 128), 3, 4: PMODE4, 1
: CIRCLE(128, 184), 4, 1, 1: CIRCLE(128,
184), 2, 1, 1: CIRCLE(24, 184), 4, 1, 1: CI
RCLE(232, 184), 4, 1, 1: LINE(230, 184)-
(234, 184), PSET

```

```

140 N$(0)="; BM+3, 0; R4D6L4U6": N$(1)
="; BM+3, 0; R2D6R2L4": N$(2)="; BM+3, +
1; U1R4D4L4D2R4": N$(3)="; BM+3, 0; R4D
3L4R4D3L4": N$(4)="; BM+3, 0; D4R4U4D6
": N$(5)="; BM+7, 0; L4D3R4D3L4U1": N$(
6)="; BM+5, 0; L2D6R4U3L4"

```

```

150 N$(7)="; BM+3, +1; U1R4D6": N$(8)=
"; BM+3, 0; R4D6L4U6; BM+4, +3; L4": N$(9
)="; BM+3, 0; R4D6L2; BM+2, -3; L4U3": DR
AW" BM128, 97; C1; U1R4D3L2D2; BM130, 10
3; D1": GET(125, 96)-(132, 104), Q, G: PU
T(125, 96)-(132, 104), QX, PSET: N$(10)
="; E5G5F5": N$(11)="; H5F5G5"

```

```

160 PX(0)=24: PY(0)=32: PX(1)=128: PY
(1)=32: PX(2)=232: PY(2)=32: PX(3)=24
: PY(3)=160: PX(4)=128: PY(4)=160: PX(
5)=232: PY(5)=160: XN$(0)="BM138, 181
; C1": XN$(1)="BM148, 181; C1": XN$(2)=
"BM158, 181; C1": XN$(3)="BM88, 181; C1
": XN$(4)="BM98, 181; C1": XN$(5)="BM1
08, 181; C1"

```

```

170 DRAW" BM100, 100; C1; R4L2D2U4": GE
T(100, 98)-(104, 102), C, G: GET(1, 1)-(
5, 5), CX, G: GET(70, 161)-(80, 167), NX,
G: PUT(100, 98)-(104, 102), CX, AND: SR=
0: SL=0: BC=0: R=0: L=0: X=5: Y=5: DRAW" B
M35, 32; C0; R186; BM233, 43; D106; BM221
, 160; L186; BM25, 149; U106"

```

```

180 CLS7: PRINT@192, STRING$(32, 246)
; : PRINTSTRING$(32, 143); : PRINTSTRIN
G$(32, 246); : PRINT@224, " YOU NEED I
NSTRUCTIONS <Y/N>"; : INPUTA#: CLS8: I
FA#="Y" THEN185ELSE310

```

```

185 CLS: PRINT"    P O O L G A
M E": PRINTSTRING$(32, 227);

```

```

190 PRINT" POOL IS A ONE, OR A TW
O PLAYERGAME. THE RIGHT JOYSTICK I
S USEDIF THERE IS ONLY ONE PLAYER.

```

```

TWOPLAYERS THEN TAKE TURNS SHOOTI
NGTHEIR SOLID, OR STRIPED BILLARD
BALLS. YOUR TURN IS INDICATED BYA
'<' IN THE LOWER LEFT OR RIGHTOF T
HE SCREEN.

```

```

200 PRINT" THE BALL IS THEN PLACE
D ON THETABLE IN A RANDOM POSITION
, AND THE POINT VALUE FOR EACH POC

```

```

KET IS DISPLAYED NEXT TO THE POCKE
T." ;
210 PRINTSTRING$(32,34);:PRINT" P
RESS <ENTER> TO CONTINUE";:INPUTA$
:CLS
215 PRINT"          P O O L G A M E":
PRINTSTRING$(32,147);
220 PRINT"  IF THE SELECT OPTION
HAS NOT BEEN CHOSEN, YOU MUST PLAY
YOUR FIRST BALL. HOWEVER, IF THE
BALLSELECT OPTION IS ON, A '?' WIL
L APPEAR BESIDE YOUR BALL, ASKING
YOU IF YOU LIKE ITS' POSITION. PR
ESSING 'Y' WILL ALLOW YOU TO SHOO
T AT THE BA
230 PRINT"  PRESSING 'N' WILL THEN
SELECT ANOTHER RANDOM POSITION. Y
OU MAYSELECT UNTIL YOU GET YOUR SH
OT. NOW, HOW DO WE MAKE THE SHOTS!
"
240 PRINTSTRING$(32,34);:PRINT" P
RESS <ENTER> TO CONTINUE";:INPUTA$
:CLS
245 PRINT"          P O O L G A M E"
:PRINTSTRING$(32,211);
250 PRINT"  ADJUST YOUR QUE STICK
POSITION(THE SMALL CROSS HAIR) WIT
H YOURJOYSTICK. PRESSING THE JOYST
ICK FIRE BUTTON WILL CAUSE THE BAL
L TO TRAVEL IN THE DIRECTION OF A
LINE BETWEEN THE BALL, AND THE CR
OSS. ";
260 PRINT"DISTANCE OF BALL TRAVEL,
IS EQUAL TO 'B' TIMES THE CROSS H
AIR TO BALL DISTANCE DIVIDED BYTHE

```

```

DIFFICULTY LEVEL. WHEN THE MULTI
-COLORED BALL APPEARS ALL POCKET
VALUES ARE TRIPLED."
270 PRINTSTRING$(32,34);:PRINT" P
RESS <ENTER> TO CONTINUE";:INPUTA$
:CLS
275 PRINT"          P O O L G A M E"
:PRINTSTRING$(32,163);
280 PRINT"  A ONE PLAYER GAME IS S
IX BALLSAND A TWO PLAYER GAME WILL
BE ATLEAST FIVE BALLS; SIX IF NEE
DEDTO DETERMINE A WINNER. AFTER T
HEGAME A '?' WILL APPEAR PROMPTING
ANOTHER GAME. PRESSING 'Y' WILL RE
-PLAY. PRESSING 'N' WILL SAY GOOD
-BYE ";
290 PRINT"AND THEN END THE GAME.":
PRINT:PRINTSTRING$(32,140);:PRINTS
TRING$(10,191);" GOOD LUCK! ";STRIN
G$(10,191);:PRINTSTRING$(32,131);
:PRINT
300 PRINT@448,"  PRESS <ENTER> TO
BEGIN";:INPUTA$
310 BC=0:CLS8:PRINT@192,STRING$(32
,230);:PRINTSTRING$(32,143);:PRINT
STRING$(32,230);:PRINT@224,"  NUM
BER OF PLAYERS <1-2>";:INPUT PL:IF
PL=1 OR PL=2 THEN 320ELSE:10
320 CLS8:PRINT@192,STRING$(32,198)
;:PRINTSTRING$(32,143);:PRINTSTRIN
G$(32,198);:PRINT@224,"ENTER DIFFI
CULTY LEVEL <1-4>";:INPUT DL:IF DL
>0 AND DL<5 THEN 330ELSE320
330 CLS8:PRINT@192,STRING$(32,166)
;:PRINTSTRING$(32,143);:PRINTSTRIN

```

~~~~~

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```

G$(32,166);:PRINT@224," DESIRE E
LECT OPTION <Y/N>";:INPUT SE$: IF S
E$="Y" OR SE$="N" THEN 340 ELSE 330

340 PUT(123,5)-(133,11),NX,PSET:A$
="BM123,5;C1"+N$(DL):DRAWA$
350 PMODE4,1:SCREEN1,1:DRAW"BM120,
32;C1;R1BD1L1BD1R1BD1L1B;BM120,160
;C1;R1BU1L1BU1R1BU1L1B":DRAW"BM25,
43;C1;E12F1G12;BM220,32;F12G1H12;B
M232,14B;G12H1E12;BM36,160;H12E1F1
2":PUT(X-4,Y-4)-(X+4,Y+4),BX,AND:G
ET(1,1)-(9,9),BX,G:GOSUB790:IF BC=
0 THEN BN=1
360 IF PL=1 THEN L=R
370 IF R=L THEN380ELSE470
380 IFR=6THEN710ELSE390
390 IF RND(7)>3 AND R>0 THEN400ELS
E410
400 BC=1:BN=3
410 R=R+1:A$="BM16,184;C0"+N$(11):
DRAWA$:A$="BM240,184;C1"+N$(10):DR
AWA$:GET(228,180)-(236,188),B,G:IF
BC=1 THEN GET(124,180)-(132,188),
B,G
420 IF PL=1 THEN BC=0
430 PUT(246-R*10,180)-(238-R*10,18
8),B,OR
440 IF PL=2 AND SR>BN*9+SL AND R=6
THEN 710
450 IF PL=2 AND SL>BN*9+SR AND R=6
THEN 710
460 GOTO 510
470 L=L+1:A$="BM240,184;C0"+N$(10)
:DRAWA$:A$="BM16,184;C1"+N$(11):DR
AWA$:GET(20,180)-(28,188),B,G:IF B
C=1 THEN GET(124,180)-(132,188),B,
G
480 BC=0:PUT(R*10+10,180)-(R*10+18
,188),B,OR
490 IF PL=2 AND SL>SR AND L=6 THEN
710
500 IF PL=2 AND SR>BN*9+SL AND L=6
THEN 710
510 X=RND(160)+48:Y=RND(80)+56:GOS
UB820:PUT(X-4,Y-4)-(X+4,Y+4),B,PSE
T:IF SE$="Y" THEN 520 ELSE IF R>L T
HEN 570ELSE590
520 PUT(X+5,Y-4)-(X+12,Y+4),Q,PSET
:PLAY"V31;03;L255;CDEFGCDEFGCDEFG"

530 A$=INKEY$: IFA$="Y" OR A$="N" THEN
540ELSE530
540 PUT(X+5,Y-4)-(X+12,Y+4),QX,PSE
T: IFA$="Y" THEN560
550 PUT(X-4,Y-4)-(X+4,Y+4),BX,PSET
:GOTO510
560 IF R>L THEN570ELSE590
570 PLAY"V31;03;L16;C;LB;A":XJ=5:Y
J=5:FORI=0TO10000:JX=XJ:JY=YJ:XJ=J

```

```

DYSTK(0)*3.03+32:YJ=JOYSTK(1)*1.8+
39:PUT(JX-2,JY-2)-(JX+2,JY+2),CX,A
ND:GET(XJ-2,YJ-2)-(XJ+2,YJ+2),CX,G
:PP=PEEK(65280):IF PP=126 OR PP=25
4 THEN610
580 PUT(XJ-2,YJ-2)-(XJ+2,YJ+2),C,D
R:NEXTI
590 PLAY"V31;03;L16;C;LB;A":XJ=5:Y
J=5:FORI=0TO10000:JX=XJ:JY=YJ:XJ=J
DYSTK(0):XJ=JOYSTK(2)*3.03+32:YJ=J
DYSTK(3)*1.8+39:PUT(JX-2,JY-2)-(JX
+2,JY+2),CX,AND:GET(XJ-2,YJ-2)-(XJ
+2,YJ+2),CX,G:PP=PEEK(65280):IF PP
=125 OR PP=253THEN610
600 PUT(XJ-2,YJ-2)-(XJ+2,YJ+2),C,D
R:NEXTI
610 DX=X-XJ:DY=Y-YJ:D=SQR(DX*DX+DY
*DY):LINE(XJ,YJ)-(X,Y),PSET:DX=4*D
X/D:DY=4*DY/D:PLAY"03;L255;V31":FO
RI=0TO25:PLAY"A;V-":NEXTI:LINE(X,Y
)-(XJ,YJ),PSET
620 FORI=0TO INT(D*2.1/DL):XX=X:YY
=Y:PUT(XX-4,YY-4)-(XX+4,YY+4),BX,A
ND:X=X+DX:Y=Y+DY
630 GET(X-4,Y-4)-(X+4,Y+4),BX,G:IF
PPOINT(X,Y)=5 THEN690
640 PUT(X-4,Y-4)-(X+4,Y+4),B,OR
650 IF X<30 OR X>226THEN660ELSE IF
Y<36 OR Y>157 THEN 670 ELSE 680
660 PLAY"01;L255;V31;CD":DX=-DX:GO
TO680
670 PLAY"01;L255;V31;CD":DY=-DY
680 NEXTI:PLAY"V31;01;LB;A;L4;C":G
OTO350
690 PMODE3,1:SCREEN1,1:J=0:FORI=0T
O5:DX=ABS(PX(I)-X):DY=ABS(PY(I)-Y)
:PLAY"V31;04;L220;BGD;01;BGC":IF D
X+DY<25 THEN J=I
700 NEXTI:GOTO760
710 PUT(125,92)-(132,100),Q,PSET:S
CREEN1,0:FORI=0TO300:A$=INKEY$:IF
A$="Y" THEN750
720 IFA$="N" THEN B60
730 IFI=150 THEN SCREEN1,1
740 NEXTI:GOTO710
750 PUT(125,92)-(132,100),QX,PSET:
GET(1,1)-(9,9),BX,G:SR=0:SL=0:FOR
R=2TO6:PUT(R*10+10,180)-(R*10+18,1
88),BX,PSET:PUT(246-R*10,180)-(238
-R*10,188),BX,PSET:NEXTR:R=0:L=0:G
OTO310
760 IF R>L THEN780
770 SL=SL+P(J)*BN:GOTO350
780 SR=SR+P(J)*BN:GOTO350
790 FORI=0TO3 STEP3:S=SR:IF I=3 TH
EN S=SL
800 DB(I)=INT(S/100):S=S-DB(I)*100
:DB(I+1)=INT(S/10):S=S-DB(I+1)*10:
DB(I+2)=S:NEXTI:X=78:Y=181:FORI=0T
O5:X=X+10:IFI=3THENX=138

```

```

B10 PUT(X,Y)-(X+10,Y+6),NX,PSET:NE
XTI:FORI=0T05:A#=XN$(I)+N$(DG(I)):
DRAWA$:NEXTI:RETURN
B20 FORI=0T05:P(I)=INT(SQR((PX(I)-
X)^2+(PY(I)-Y)^2)/22)
B30 IF I=1 OR I=4 THEN P(I)=P(I)+1

```

```

B40 NEXTI:PUT(36,25)-(46,31),NX,PS
ET:A#="BM36,25;C1"+N$(P(0)):DRAWA$
:PUT(140,25)-(150,31),NX,PSET:A#="
BM140,25;C1"+N$(P(1)):DRAWA$:PUT(2
10,25)-(220,31),NX,PSET:A#="BM210,
25;C1"+N$(P(2)):DRAWA$
B50 PUT(36,161)-(46,167),NX,PSET:A
#="BM36,161;C1"+N$(P(3)):DRAWA$:PU
T(140,161)-(150,167),NX,PSET:A#="B
M140,161;C1"+N$(P(4)):DRAWA$:PUT(2
10,161)-(220,167),NX,PSET:A#="BM21
0,161;C1"+N$(P(5)):DRAWA$:RETURN
B60 POKE65494,0:CLS8:PRINT@135,"GO
OD NIGHT PLAYERS";:PLAY"DIV31L4AFL
8CL4F":FORI=0T070:NEXTI:PRINT@199,
"GOOD NIGHT PLAYERS";:PLAY"L4AFL8G
L4G":FORI=0T070:NEXTI:PRINT@263,"G
OOD NIGHT PLAYERS";:PLAY"L4AFL8A+L
4A+":FORI=0T050:NEXTI
B70 PRINT@322,"I'M GOING TO LEAVE
YOU NOW!!";:PLAY"L6A+L2AL5AL2GL5GL
2F":PRINT@480," "
B71 CLS0:GOTO871

```

Tandy Corporation  
Tandy User Group Newsletter - March, 1986

by Ed Juge, Director of Market Planning,  
Tandy Corporation

#### OUR CLUB MAILING LIST

...has been pared down to about 120 clubs now. We started with a little over 200, and last month killed those who didn't respond to our questionnaires. There certainly are clubs we don't know about (and would like to), and I'm sure a number of the no-responses simply didn't want to receive this newsletter. But it's also likely some no longer exist, or the club contact has changed, with no forwarding address. At any rate, there are now 120 active clubs receiving this newsletter, in case you're a collector of superfluoustri- via.

#### AND THAT LEAVES COCOS...?

But you CoCo owners don't get upset... we sold more CoCos this Christmas than we did Christmas of '84. Believe me, the Coco is in no danger of extinction from today's vantage point.

#### ATTORNEY YET ??

The Ft. Worth CoCo User's Group newsletter dated 2/17 began... "One of the first things an attorney learns is how to say something and not say anything, and how to tell the truth and yet not say the whole truth. This skill also has it's advantages in listening to what others have to say. A most recent example, Tandy exec, Ed Juge, in the recent 'Tandy User Group Newsletter' stated, 'That there will be no new COCO introduced in the spring. "Now, he did not say there would be no new COCO, period. Nor, did he say, there will be no new COCO this winter, next fall, next winter, or even next year..."

You're right Kerry, I didn't. Maybe I missed a more lucrative calling! But I was trying to put to rest a specific rumor... that the introduction of a new one would come in January, February, or certainly no later than spring. Remember, folks, I can't and won't give away confidential information. If you ask me will there be a new one, I'd tell you I haven't seen one, but it seems reasonable to me that with the continued success of the product, one might predict future new products. If you asked me when, I'd just have to say 'no comment'.

Few computer companies comment on new product rumors, and one -- Osborne -- learned the hard way just what actually pre-announcing a new product can do.

#### SAVE ON PRINTER RIBBONS

| Catalog# | All Guaranteed Description   | Per Ribbon | Box of 6 | \$50-\$150 per order |
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Kerry also commented on my statements last month that the CoCo was introduced to fill an entry-level slot in our line, which was in response to questions about our advertising it that way. Then he posed the question "Did I hear someone mention OS-9?" Good point.

Remember, Kerry, the unique character of the CoCo is its low entry-level cost. You can buy one for \$119, to get started. We know that people who upgrade to disk systems want more power, and that's exactly why all of our new disk software will be on OS-9. I wouldn't argue with those who say OS-9 is more powerful than MS-DOS. But I would argue that advertised as a full disk "business" system against the likes of the Tandy 1000 and 1200, it wouldn't stand a chance with new buyers who don't understand the CoCo and OS-9. Uninitiated buyers don't buy on technical excellence, they buy on perceptions and what the world tells them they need... in most cases "PC Compatibility". I've even talked to prospective buyers who knew they had to have it, but weren't sure what the term even meant! If technical excellence sold computers to the general public, the Tandy 2000 would have taken the market by storm, and we all know it didn't.

The CoCo Adventurers Group from Wisconsin countered with "On behalf of our CoCo Club, we would like to congratulate you for a wonderful job of publishing this newsletter. We love it! Keep up the good work!" Bottom line... your feedback is important! Let us know and we'll try to give you what you find useful, in a format you'll like.

#### MORE ON COCO

More on the on-going question of how we position the CoCo as an entry-level machine in our advertising. (I feel just like Ann Landers!) The following is excerpted from an editorial in the Glenside Color Computer Club newsletter...

"We CoCo owners and users love our machine and as president of this user group, I would like to see us continue to grow. We do not stand a chance of this if you (Tandy) try to pit the CoCo up against MS-DOS systems that compete in prices."

He was referring to a recent ad in a computer magazine for a 64K CoCo, 1 drive, and Deskmate, which was very close to a dealer's price on a Tandy 1000 in the same magazine. Good point. So, as I've said, the CoCo is unique partly because of its position in the market and partly because nothing else in its class is capable of doing turned into a powerful, OS-9 based disk system with anything like the same capabilities. But...

we feel initial positioning is critical to its continued success.

#### Source

Tandy Corporation/Radio Shack. Send questions, suggestions to Ed Juge, Director of Market Planning, 1700 One Tandy Center, Fort Worth, TX 76102.

---

## THE STATES

Now you can learn the states of the U.S.A., their abbreviations, and their capitals with this question and answer program.

This program was donated by T&D Software. Please see there ad on page 30.

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- 20 DATA CALIFORNIA, CA, SACRAMENTO, COLORADO, CO, DENVER, CONNECTICUT, CT, HARTFORD, DELAWARE, DE, DOVER, FLORIDA, FL, TALLAHASSEE
- 30 DATA GEORGIA, GA, ATLANTA, HAWAII, HI, HONOLULU, IDAHO, ID, BOISE, ILLINOIS, IL, SPRINGFIELD, INDIANA, IN, INDIANAPOLIS, IOWA, IA, DES MOINES
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100 DATA TEXAS,TX,AUSTIN,UTAH,UT,S
ALT LAKE CITY,VERMONT,VT,MONTPELIE
R,VIRGINIA,VA,RICHMOND,WASHINGTON,
WA,OLYMPIA
110 DATA WEST VIRGINIA,WV,CHARLEST
ON,WISCONSIN,WI,MADISON,WYOMING,WY
,CHEYENNE
120 CLS
130 PRINT@67,"*****
*****":PRINT@99,"* STATES-CAPIT
ALS *":PRINT@131,"* =====
===== *":PRINT@163,"* BY J
.A.WOODWARD *":PRINT@195,"*****
*****"
140 PRINT:PRINT" PRESS <ENTER>
TO PLAY"
160 T$=INKEY$:IF T$="" THEN 160
170 IFT$<>CHR$(13) THEN160
180 DIM A(50),B(50),AN$(50),RA$(50
)
210 DIM A$(50),C$(50),S$(50)
220 PRINT:PRINT" THIS PROGRAM IS
DESIGNED TO HELP YOU LEARN THE
STATES OF THE U.S.A., THEIR AB
BREVI- ATIONS, AND THEIR CAPI
TALS."
230 FOR P=1 TO 50
240 READ S$(P),A$(P),C$(P)
250 NEXTP
260 GOSUB1120
270 CLS
280 CLS
290 PRINT"CHOOSE A CATEGORY BY P
RESSING THE NUMBER IN THE PARENTH
ES."
300 PRINT"(1) NAME THE STATE, GI
VEN ITS ABBREVIATION."
310 PRINT"(2) NAME THE STATE, GI
VEN ITS CAPITAL."
320 PRINT"(3) NAME THE CAPITAL,
GIVEN THE STATE."
330 PRINT"(4) NAME THE CAPITAL,
GIVEN THE STATE'S ABBREVIATION."
340 PRINT"(5) WRITE THE ABBREVIA
TION OF THE STATE, GIVEN THE STAT
E."
350 PRINT"(6) WRITE THE ABBREVIA
TION OF THE STATE, GIVEN THE STAT
E'S CAPITAL."
360 G$=INKEY$
370 G=VAL(G$)
380 IF G>6 OR G<1 THEN 360
390 R=0:W=0
400 CLS
410 FOR Q=1 TO 50
420 CLS
430 PRINT@2,R;" RIGHT ";W;" WRONG
"
440 Z=B(Q)
20

```

```

450 ON G GOSUB 930,960,990,1020,10
60,1090
460 PRINT@64," ";Z$;F$
470 PRINT@96,F1$
480 GOSUB710
490 NEXT Q
500 PRINT@2,R;" RIGHT ";W;" WRON
G"
510 CLS:PRINT@98," WOULD YOU LIKE
TO SEE YOUR MISTAKES ? <Y,N>"
520 X$=INKEY$:IFX$="" THEN 520
530 IFX$="N" THEN640
540 IFX$<>"Y" THEN520
550 IFW=0 THEN PRINT@97,"YOU DID N
OT MAKE ANY MISTAKES!! VER
Y GOOD!!" ELSE580
560 FORE=1 TO1111:NEXTE
570 GOTO640
580 FOR P=1 TO W
590 PRINT@32," YOUR ANSWER WAS ";A
N$(P):PRINT@97,"AND THE CORRECT AN
SWER IS ";RA$(P)
600 PRINT@321,"PRESS THE ENTER KEY
FOR YOUR NEXT MISTAKE"
610 W$=INKEY$:IFW$=""THEN 610
620 IF W$<>CHR$(13) THEN 610
630 NEXTP
640 CLS
650 PRINT@384," THE TEST IS FINISH
ED. WOULD YOU LIKE TO HAVE ANOTHER
TEST? <Y,N>"
660 O$=INKEY$:IF O$="" THEN 660
670 IF O$="Y" THEN 260
680 CLS:PRINT:PRINT:PRINT:PRINT:PR
INT
690 IFO$="N" THEN PRINT" I HOPE YO
U STILL LIKE ME! LET'S PLAY AGAIN
SOMETIME, O.K.?" ELSE 650
700 END
710 PRINT@288,"PRINT YOUR ANSWER A
ND THEN PRESS ENTER"
720 INPUT AN$
730 GOSUB750
740 RETURN
750 LR=LEN(R$):LA=LEN(AN$)
760 IF LA<>LR THEN 830
770 IF R$<>AN$ THEN830
780 R=R+1
790 PRINT@288," RIGHT!!!"
800 PRINT@320," "
810 PLAY"T603L4CFAL4.04CL8.03AL104
C":FORV=1 TO 233:NEXT
820 GOTO910
830 W=W+1
840 FOR L=40 TO 1 STEP-1:SOUND L,1
850 PRINT@288," WRONG":PRINT
@288," WRONG"
860 PRINT@320," "
870 NEXT L

```

```

880 PRINT@288, " THE RIGHT AN
SWER IS "; " ";R#
890 FOR T=1 TO 1300:NEXT
900 RA$(W)=R$:AN$(W)=AN$
910 RETURN
920 FORQ=1 TO 50
930 Z$=A$(Z):R$=S$(Z)
940 F$=" IS THE ABBREVIATION OF WH
AT STATE ?":F1$=" STATE ?"
950 RETURN
960 Z$=C$(Z):R$=S$(Z)
970 F$=" IS THE CAPITAL ":F1$=" OF
WHAT STATE ?"
980 RETURN
990 Z$=S$(Z):R$=C$(Z)
1000 F$=" 'S CAPITOL IS ?":F1$=""
1010 RETURN
1020 Z$=A$(Z):R$=C$(Z)
1030 F$=" IS THE ABBREVIATION OF":
F1$=" THE STATE WHOSE CAPITAL IS ?
"
1040 RETURN
1050 N G GOSUB 930,960,990,1020,10
90
1060 Z$=S$(Z):R$=A$(Z)
1070 F$=" 'S ABBREVIATION":F1$=" IS
?"
1080 RETURN
1090 Z$=C$(Z):R$=A$(Z)
1100 F$=" IS THE CAPITOL ":F1$=" O
F THE STATE WHOSE ABBREVIATION IS
?"
1110 RETURN
1120 FOR N=1 TO 50:A(N)=N:NEXT
1130 FOR I=50 TO 1 STEP-1
1140 PRINT@490, " ";
1150 X=RND(I)
1160 B(51-I)=A(X)
1170 IF X=I THEN 1220
1180 FOR P=X TO I-1
1190 PRINT@490,"PLEASE WAIT";
1200 A(P)=A(P+1)
1210 NEXTP
1220 NEXTI
1230 RETURN

```

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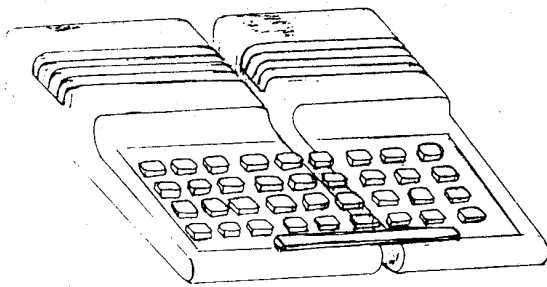
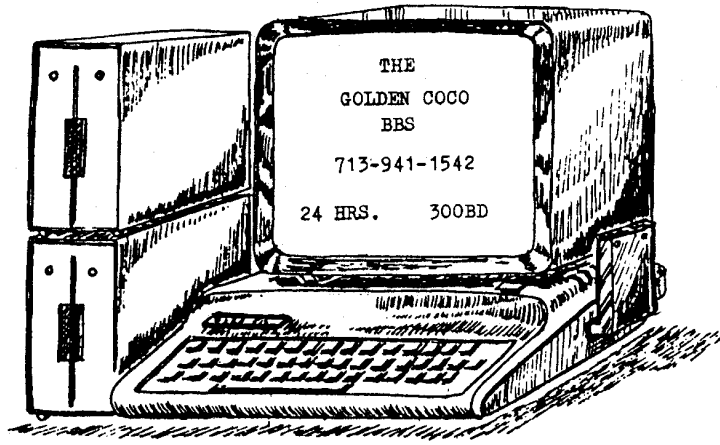
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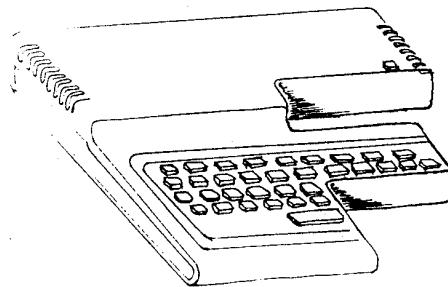
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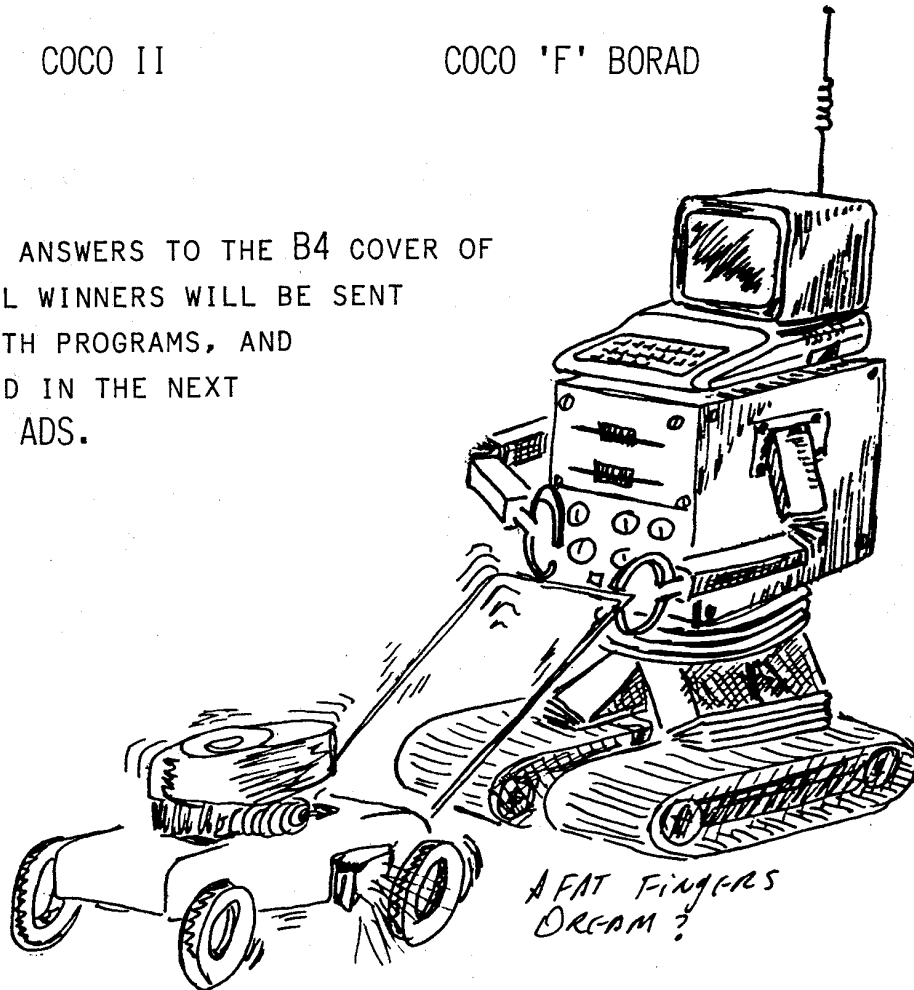
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```
10 '***          DRAW          ***
20 '***    BY PETER STUMPF    ***
30 '*** 1508 APPALOOSA TRAIL ***
40 '*** MC HENRY, IL 60050 ***
50 CLS:DIMN$(32)
60 '***TITLE PAGE***
70 FORZ=1T032:PRINT@Z-1,CHR$(175):
NEXT
80 FORZ=32T063:PRINT@Z,CHR$(255):N
EXT
90 DATA D, ,R, ,A, ,W
100 DATA B,Y
110 DATA P,E,T,E,R, ,S,T,U,M,P,F
120 DATA 1,5,0,8, ,A,P,P,A,L,O,D,S
,A, ,T,R,A,I,L
130 DATA M,C, ,H,E,N,R,Y,"", ,I,L
, ,6,0,0,5,0
140 DATA D,O, ,Y,O,U, ,N,E,E,D, ,I
,N,S,T,R,U,C,T,I,O,N,S,?
150 S=12:NL=7:GOSUB420
160 LP=64:GOSUB360
170 FORZ=96T0127:PRINT@Z,CHR$(207)
:NEXT
180 S=14:NL=2:GOSUB430
190 LP=128:GOSUB360
200 FORZ=160T0191:PRINT@Z,CHR$(239)
):NEXT
210 FORZ=192T0223:PRINT@Z,CHR$(191)
):NEXT
220 S=10:NL=12:GOSUB430
230 LP=224:GOSUB360
240 S=6:NL=20:GOSUB430
250 LP=256:GOSUB360
260 S=7:NL=18:GOSUB430
270 LP=288:GOSUB360
280 FORZ=320T0351:PRINT@Z,CHR$(159)
):NEXT
```

\*\*\*\*\*

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\*\*\*\*\*

```
290 FORZ=352T0383:PRINT@Z,CHR$(223)
):NEXT
300 S=4:NL=25:GOSUB430
310 LP=384:GOSUB360
320 FORZ=416T0447:PRINT@Z,CHR$(175)
):NEXT
330 FORZ=448T0479:PRINT@Z,CHR$(255)
);:NEXT
340 GOTO2480
350 '***PRINT LETTERS***
360 FORI=S TONL+S-1
370 FORLL=448 TO LP STEP-32
380 PRINT@LL+I,N$(I)
390 IFLL<>LP THENPRINT@LL," "
400 NEXTLL,I
410 RETURN
420 '***READ DATA***
430 FOR I=S TO NL+S-1
440 READ N$(I)
450 NEXT I:RETURN
460 '***CHECK FOR INPUT***
470 VM=0:HM=0:DC=3
480 PCLS:X=128:Y=96
490 GOSUB660
500 A$=INKEY$
510 IFA$=CHR$(12)THEN690
520 IFPEEK(345)=247THENGOSUB1450
530 IFA$="S"THENGOSUB1690
540 IFA$="L"THENGOSUB1880
550 IFA$="P"THENGOSUB780
```

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RS10

```
560 IFA$="C"THEN GOSUB 1010
570 IFA$="J"THEN GOSUB 1160
580 IFA$="E"THEN CLS:END
590 IFA$="H"THEN GOSUB 2110
600 IFA$="I"THEN GOSUB 2590
610 IFA$="D"THEN GOSUB 2000
620 IFA$="X"THEN GOSUB 1480
630 GOSUB 1300
640 GOTO 500
650 ***PMODE***
660 PMODE 1,1:SCREEN 1,0:COLOR 3,1
670 RETURN
680 ***CLEAR THE SCREEN***
690 CLS:PRINT "CLEAR THE SCREEN":PRINT
700 PRINT "IF YOU CLEAR THE SCREEN
, YOUR PCITURE WILL BE LOST."
710 PRINT "ARE YOU SURE?"
720 PRINT "YES OR nO"
730 Z$=INKEY$
740 IF Z$="Y"THEN PCLS:GOTO 490
750 IF Z$="N"THEN 490
760 GOTO 730
770 ***PAINT THE SCREEN***
780 CLS:PRINT "PAINT THE SCREEN":PRINT
```

24

```
790 PRINT "THEY ARE FOUR COLORS TO
PAINT WITH. THEY ARE:"
800 PRINT "YELLOW, rED, gREEN, bLU
E"
810 PRINT " e TO EXIT"
820 CO$=INKEY$:IF CO$=""THEN 820
830 IF CO$="Y"THEN CO=2:GOTO 890
840 IF CO$="R"THEN CO=4:GOTO 890
850 IF CO$="B"THEN CO=3:GOTO 890
860 IF CO$="G"THEN CO=1:GOTO 890
870 IF CO$="E"THEN 490
880 GOTO 820
890 PRINT:PRINT "THERE ARE THREE B
ORDER COLORS TO PAINT TO. THEY
ARE:"
900 PRINT "BLUE, YELLOW, rED."
910 PRINT " e TO EXIT"
920 BCC$=INKEY$:IF BCC$=""THEN 920
930 IF BCC$="B"THEN BCC=3:GOTO 980
940 IF BCC$="Y"THEN BCC=2:GOTO 980
950 IF BCC$="R"THEN BCC=4:GOTO 980
960 IF BCC$="E"THEN 490
970 GOTO 920
980 GOSUB 660
990 PAINT(X,Y+2),CO,BCC:RETURN
1000 ***DRAW A CIRCLE***
1010 CLS:PRINT "CIRCLE"
:PRINT
1020 PRINT "MAXIMUM CIRCLE DIAMETE
R IS 166":PRINT:INPUT "CIRCLE DIAM
ETER";CD$
1030 CD=VAL(CD$)
1040 IF CD>166THEN PRINT "TOO LARGE!
MUST BE LESS THAN 166.":FOR Z=1
TO 800:NEXT:GOTO 1020
1050 PRINT:PRINT "HEIGHT TO WIDTH
RATIO- X:1 GREATER THAN 1 MAKE
S CIRCLE HIGHER THAN WIDER AND
VICE-VERSA. 1 IS A PERFECT
CIRCLE"
1060 INPUT HWR
1070 IF HWR<.1 OR HWR >9 THEN 1060
1080 PRINT
1090 INPUT "START POINT OF CIRCLE";
SPC
1100 IF SPC>1THEN PRINT "TOO LARGE!
MUST BE EQUAL TO OR LESS THAN 1":
GOTO 1090
1110 INPUT "END POINT OF CIRCLE";EPC
1120 IF EPC>1THEN PRINT "TOO LARGE!
MUST BE EQUAL TO OR LESS THAN 1":
GOTO 1110
1130 CIRCLE(X,Y),CD,DC,HWR,SPC,EPC
1140 GOSUB 650:RETURN
1150 ***JUMP OVER***
1160 PRESET(X,Y):CLS
1170 PRINT "JUMP OVER":P
RINT
```



```

1180 PRINT" MAXIMUM PIXELS TO JUMP
IS 200.":PRINT:INPUT" NUMBER OF P
IXELS TO JUMP";NP
1190 IFNP<0 ORNP>200THENPRINT" TOO
MANY PIXELS! MUST BE LESS THAN
200.":FORZ=1TO800:NEXT:GOTO1180
1200 PRINT"PRESS:":PRINT" uP, dOWN
, rIGHT, lEFT":PRINT" e TO EXIT"
1210 VH$=INKEY$:IFVH$=""THEN1210
1220 IFVH$="D"THENY=Y+NP:GOTO1280
1230 IFVH$="U"THENY=Y-NP:GOTO1280
1240 IFVH$="R"THENX=X+NP:GOTO1280
1250 IFVH$="L"THENX=X-NP:GOTO1280
1260 IFVH$="E"THEN490
1270 GOTO1210
1280 GOSUB650:RETURN
1290 '***JOYSTICK ROUTINE***
1300 A=JOYSTK(0)
1310 B=JOYSTK(1)
1320 IFA=63 THEN X=X+1
1330 IFA=0THEN X=X-1
1340 IFB=63 THEN Y=Y+1
1350 IF B=0 THEN Y=Y-1
1360 GOSUB1370:RETURN
1370 '***CHECK BORDERS***
1380 IFX<0 THEN X=0
1390 IFX>256 THEN X=256
1400 IF Y<1 THEN Y=1
1410 IF Y>191 THEN Y=191
1420 PSET(X,Y,DC)
1430 RETURN
1440 '***ERASE ROUTINE***
1450 PRESET(X-HM,Y-VM)
1460 RETURN
1470 '***DRAW A LINE***
1480 CLS:PRINTTAB(9);"DRAW A LINE"
:PRINT
1490 PRINT" MOVE THE JOYSTICK SO T
HE TWO BOTTOM NUMBERS ARE ABOUT
THE SAME AS THE TOP TWO. WHEN
YOU ARE FINISHED, PRESS enter."
1500 PRINT@320,X;Y
1510 X1=INT(4*JOYSTK(0))
1520 Y1=INT(3*JOYSTK(1))
1530 PRINT@352,X1;Y1
1540 IFINKEY$=CHR$(13)THEN 1560
1550 GOTO 1510
1560 GOSUB 660
1570 'N1=X1:N2=Y1
1580 X1=INT(4*JOYSTK(0))
1590 Y1=INT(3*JOYSTK(1))
1600 PSET(X1,Y1,DC)
1610 FORZ=1TO30:NEXT
1620 IFINKEY$="X"THEN1650
1630 IFPEEK(345)=247THEN PRESET(X1
,Y1)
1640 GOTO 1580
1650 LINE(X,Y)-(X1,Y1),PSET
1660 X=X1:Y=Y1
1670 RETURN

```

```

1680 '***SAVE ROUTINE***
1690 CLS
1700 PRINT" SAVE ROUTINE
":PRINT
1710 INPUT" FILENAME";F$
1720 IFLEN(F$)>8THENPRINT" NAME TO
O LONG!":GOTO1710
1730 PRINT" PRESS:":PRINT" c TO CS
AVE TO CASSETTE d TO SAVE
TO DISK":PRINT" e TO EXIT"
1740 A$=INKEY$:IFA$=""THEN1740
1750 IFA$="C"THENAUDIO ON:GOTO1790

1760 IFA$="D"THEN1800
1770 IFA$="E"THENGOTO490
1780 GOTO 1710
1790 CSAVEMF$,PEEK(186)*256,PEEK(2
5)*256-1,138:AUDIO OFF:GOTO1820
1800 SAVEMF$,PEEK(186)*256,PEEK(25
)*256-1,138:GOTO1820
1810 GOTO 1710
1820 PRINT" FINISHED SAVING FILE"
1830 FORZ=1TO800:NEXT
1840 GOSUB660
1850 A$=""
1860 RETURN
1870 '***LOAD ROUTINE***
1880 CLS
1890 PRINT" LOAD ROUTINE
":PRINT
1900 INPUT" FILENAME";F$
1910 IFLEN(F$)>8THENPRINT" NAME TO
O LONG!":GOTO1900
1920 PRINT" PRESS:":PRINT" c TO CL
OAD FROM CASSETTE d TO LOAD
FROM DISK":PRINT" e TO EXIT"
1930 A$=INKEY$:IFA$=""THEN1930
1940 IFA$="C"THENGOSUB660:AUDIO ON
:CLOADMF$:AUDIO OFF:GOTO490
1950 IFA$="D"THENGOSUB660:LOADMF$:
GOTO490
1960 IFA$="E"THEN490
1970 GOTO1900
1980 RETURN
1990 '***CHANGE DRAWING COLOR***
2000 CLS:PRINT" CHANGE DRAWIN
G COLOR":PRINT
2010 PRINT:PRINT" THERE ARE THREE
COLORS TO DRAW IN. THEY ARE:"
2020 PRINT" bLUE, rED, yELLOW"
2030 PRINT" eXIT"
2040 AZ$=INKEY$:IFAZ$=""THEN2040
2050 IFAZ$="B"THENDC=3:GOSUB660:RE
TURN
2060 IFAZ$="R"THENDC=4:GOSUB660:RE
TURN
2070 IFAZ$="Y"THENDC=2:GOSUB660:RE
TURN
2080 IFAZ$="E"THENGOTO490
2090 GOTO2040

```

```

2100 '***HELP!***
2110 CLS:PRINT"          HELP!"
:PRINT" right joystick - MOVES CUR
SOR"
2120 PRINT" spacebar - ERASES"
2130 PRINT" clear - CLEARS THE SCR
EEN"
2140 PRINT" p - PAINT"
2150 PRINT" s - SAVE ROUTINE"
2160 PRINT" l - LOAD ROUTINE"
2170 PRINT" c - CIRCLE"
2180 PRINT" j - JUMP OVER"
2190 PRINT" e - EXITS"
2200 PRINT" i - FULL INSTRUCTIONS"

2210 GOSUB2220:GOTO490
2220 '***HIT ANY KEY***
2230 FORZ=1TO20:NEXT
2240 PRINT@490,"hIT ANY KEY";
2250 GOSUB2460
2260 PRINT@490,"HiT ANY KEY";
2270 GOSUB2460
2280 PRINT@490,"HiT ANY KEY";
2290 GOSUB2460
2300 PRINT@490,"HiT aNY KEY";
2310 GOSUB2460
2320 PRINT@490,"HiT AnY KEY";
2330 GOSUB2460
2340 PRINT@490,"HiT ANY KEY";
2350 GOSUB2460
2360 PRINT@490,"HiT ANY KEY";
2370 GOSUB2460
2380 PRINT@490,"HiT ANY KeY";
2390 GOSUB2460
2400 PRINT@490,"HiT ANY KEY";
2410 A$=INKEY$
2420 IFA$="I"THEN2590:GOTO490
2430 IFA$="E"THENGOTO490
2440 IFA$=""THEN2220
2450 RETURN
2460 FORZ=1TO30:NEXT:RETURN
2470 '***INSTRUCTIONS?***
2480 XL=493
2490 PRINT@XL,"y OR N";
2500 GOSUB2460
2510 PRINT@XL,"Y OR n";
2520 GOSUB2460
2530 A$=INKEY$
2540 IFA$=""THEN2480
2550 IFA$="Y"THENGOSUB2590:GOTO470

2560 IFA$="N"THEN470
2570 GOTO2480
2580 '***FULL INSTRUCTIONS***
2590 CLS
2600 PRINT"          DRAWING"
2610 PRINT:PRINT" DRAWING IS DONE
WITH THE right joystick. A CURSO
R MOVES IN THE DIRECTION THE JO

```

```

YSTICK IS POINTED. A LINE TRAILS
BEHIND THE CURSOR."
2620 PRINT" TO CHANGE THE DRAWING
COLOR, PRESS d. THEN BY PRESSIN
G BLUE, YELLOW, rED, THE CURSOR'S
COLOR WILL CHANGE."
2630 PRINT" HOLDING DOWN spacebar
CAUSES THE CURSOR NOT TO DRAW A
LINE & ERASES WHERE EVER THE CU
RSOR GOES."
2640 GOSUB2230
2650 CLS:PRINT"          PAINTING COM
MANDS"
2660 PRINT:PRINT" TO PAINT THE SCR
EEN, PRESS p. THERE ARE FOR COLO
RS TO PAINT WITH. THEY ARE:"
2670 PRINT" rED, BLUE, YELLOW, GRE
EN."
2680 PRINT" PAINTING BEGINS 2 PIXE
LS BELOW THE CURSOR. IT CONTINUES
UNTIL IT REACHES A BORDER OF A S
PECIFIED COLOR. THE BORDER COLO
RS TO CHOOSE FROM ARE:"
2690 PRINT" rED, BLUE, YELLOW."
2700 GOSUB2230
2710 CLS:PRINT"          SAVE ROUT
INE"
2720 PRINT:PRINT" PICTURES CAN BE
SAVED TO BE USED LATER. THIS I
S DONE BY PRESSING s. A FILENA
ME IS ASKED FOR & THEN PRESS t
OR d TO SAVE IT ON TAPE OR DISK.
"
2730 PRINT" TO ABORT SAVE, PRESS e
& THE PROGRAM WILL RETURN TO T
HE GRAPHIC SCREEN. IF YOU MAK
E A MISTAKE IN ENTERING THE FILE
NAME, PRESSING A KEY OTHER
THAN t OR d WILL LET YOU RE-
ENTER THE FILENAME."
2740 GOSUB2230
2750 CLS:PRINT"          LOAD ROUT
INE"
2760 PRINT:PRINT" PICTURES PREVIOU
SLY SAVED CAN BE LOADED IN BY PR
ESSING l. A FILENAME IS ASKED &
THEN t OR d IS PRESSED TO LOAD I
T OFF TAPE OR DISK."
2770 PRINT" TO ABORT LOAD, PRESS e
& THE PROGRAM WILL RETURN TO T
HE GRAPHIC SCREEN. IF YOU MAK
E A MISTAKE IN ENTERING THE FILE
NAME, PRESSING A KEY OTHER
THAN t OR d WILL LET YOU RE-
ENTER THE FILENAME."
2780 GOSUB2230
2790 CLS:PRINT"          CIRCLE"

2800 PRINT:PRINT" TO DRAW A CIRCLE
PRESS c. DIA- METER IS THEN ASKE

```

D FOR. THE MAXIMUM DIAMETER FOR A CIRCLE IS 166."  
 2810 PRINT" HEIGHT TO WIDTH RATIO IS ALSO ASKED FOR. A NUMBER GREATER THAN 1 MAKES A CIRCLE HIGHER THAN IT IS WIDE & VICE-VERSA . 1 IS A PERFECT CIRCLE."  
 2820 GOSUB2230  
 2830 CLS:PRINT" CIRCLE (CONT)  
 2840 PRINT:PRINT" THE LAST OPTION AVAILABLE ON THE CIRCLE ALLOWS YOU TO DRAW JUST PART OF A CIRCLE."  
 2850 PRINT" START POINT AND END POINTS ARE ANY NUMBERS FROM 0 TO 1. 0 IS EQUAL TO 3 O'CLOCK ON A CLOCK. DRAWING ACTION GOES CLOCKWISE. .50 WOULD BE 9 O'CLOCK."  
 2860 PRINT" BY JUST PRESSING enter TO BOTH QUESTIONS, A FULL CIRCLE WILL BE DRAWN."  
 2870 GOSUB2230  
 2880 CLS:PRINT" DRAW A LINE":PRINT  
 2890 PRINT" TO DRAW A LINE QUICKLY, PRESS x. YOU WILL BE ABLE TO DRAW A LINE MUCH MORE QUICKLY THAN WITH THE SLOW CURSOR."  
 2900 PRINT" YOU ARE ASKED TO CALIBRATE THE JOYSTICK TO THE NUMBERS GIVEN ON THE SCREEN. WHEN THE BOTTOM NUMBERS ARE ABOUT THE SAME AS THE TOP ONES, PRESS enter. BY MAKING THE NUMBERS THE SAME,"  
 2910 PRINT" YOU WILL KNOW WHERE YOU CURSOR IS. YOU WILL NOTICE THE CURSOR MOVES AROUND MORE FREELY."  
 2920 GOSUB2230  
 2930 CLS:PRINT" DRAW A LINE (CONT)":PRINT  
 2940 PRINT" JUST MOVE THE CURSOR TO WHERE YOU WANT A LINE TO GO TO AND A LINE WILL BE DRAWN BETWEEN THAT CURSOR AND THE ONE BEFORE YOU PRESSED x."  
 2950 PRINT" IF YOU PRESS spacebar WHILE POSITIONING THE CURSOR, NO DOTS WILL BE DRAWN WHERE THE CURSOR GOES. BUT, BE CAREFUL, BECAUSE YOU MAY ACCIDENTALLY ERASE DOTS WHERE THINGS HAVE BEEN DRAWN."  
 2960 GOSUB2230  
 2970 CLS:PRINT" JUMP OVER"  
 2980 PRINT:PRINT" TO MOVE THE CURSOR AROUND THE SCREEN WITHOUT DRAWING A LINE, PRESS j. THE NUMBER

OF PIXELS TO JUMP OVER IS ASKED OR. 200 IS THE MAXIMUM NUMBER."  
 2990 PRINT" THEN THE DIRECTION TO JUMP IS ASKED FOR. THEY ARE: RIGHT, LEFT, UP, AND DOWN."  
 3000 GOSUB2230  
 3010 CLS:PRINT" CLEAR THE SCREEN"  
 3020 PRINT:PRINT" TO CLEAR THE GRAPHIC SCREEN PRESS clear. THE QUESTION, 'ARE YOU SURE?' WILL APPEAR ON THE SCREEN. THEN, TO CLEAR THE SCREEN PRESS y. IF YOU DECIDE NOT TO, PRESS n."  
 3030 PRINT" SOMETIMES, WHEN THE PROGRAM IS FIRST RUN, GARBAGE WILL APPEAR ON THE GRAPHIC SCREEN. PUSHING clear WILL ELIMINATE IT."  
 3040 GOSUB2230  
 3050 CLS:PRINT" EXIT THE PROGRAM"  
 3060 PRINT:PRINT" TO EXIT THE PROGRAM, PRESS e. IF THE PROGRAM IS ACCIDENTALLY EXITED, TYPING 'RUN 490' WILL CONTINUE THE PROGRAM WITH NO HARM TO THE PICTURE."  
 3070 GOSUB2230  
 3080 CLS:PRINT" HELP!"  
 3090 PRINT:PRINT" IF YOU FORGET A COMMAND, PRESSING h WILL LIST THEM AND BRIEFLY DESCRIBE THEM."  
 3100 PRINT" HOWEVER, IF YOU NEED MORE INSTRUCTION, YOU CAN COME BACK TO THESE INSTRUCTIONS."  
 3110 GOSUB2230  
 3120 CLS:PRINT:PRINT" THAT'S ALL YOU NEED TO KNOW TO BEGIN DRAWING!!"  
 3130 PRINT:PRINT" TO REVIEW INSTRUCTIONS, HIT i"  
 3140 GOSUB2230:GOSUB660:RETURN  
 3150 END

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# DISK SPEED

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program. Instructions are in the program.  
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```

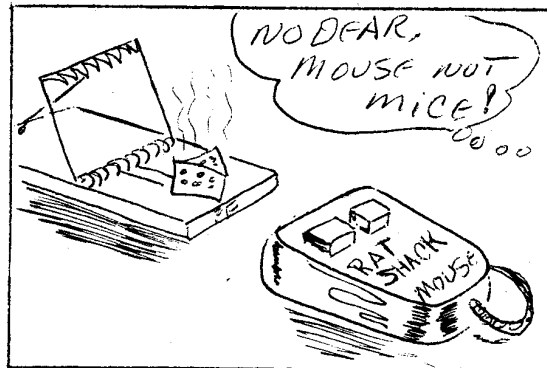
100 CLS: CLEAR 500
110 READ B$: IFB$="END" THEN 130
120 A$=A$+B$: READ DUMMY$: GOTO 110
130 FORX=1 TO LEN(A$)/2
140 Y=VAL("&H"+MID$(A$,X*2-1,2))
150 POKE X+3585,Y: C=C+Y: NEXT X
160 IFC<>4001 THEN 490
170 S$=STRING$(32,61)
180 F1$="TRIAL ## SPEED ###.##"
190 F2$="AVERAGE      ###.##"
200 PRINT"DRIVE SPEED CHECK"
210 PRINTS$
220 PRINT@128,"WHICH DRIVE";
230 INPUT DV: PRINT@142," "
240 IF DV<0 OR DV>3 THEN 220
250 PRINT: PRINT"PLEASE MOUNT ";
260 PRINT"AN INITIALIZED"
270 PRINT"DISK IN DRIVE"; DV;
280 INPUT"& PRESS ENTER"; X
290 CLS: PRINT" SPEED CHECK -- ";
300 PRINT"DRIVE"; DV: PRINTS$;
310 DSKI$ DV,17,1,A$,B$
320 POKE &HFF48,3
330 TL=0: FOR TR=1 TO 10
340 POKE 2437,120: EXEC 3586
350 SP=PEEK(3584)*256+PEEK(3585)
360 IF SP=0 THEN 450
370 SP=SP*0.026779174
380 PRINT USING F1$; TR,SP
390 TL=TL+SP: NEXT TR
400 AV=TL/10
410 PRINT TAB(9)"-----"
420 PRINT USING F2$; AV
430 PRINT@498,"PRESS ENTER";
440 INPUT X: CLS: GOTO 170

```

```

450 PRINT@384,"**** ERROR ****"
460 PRINT"PLEASE CHECK DISK";
470 PRINT"INDRIVE"; DV
480 GOTO 430
490 PRINT"DATA ITEM INCORRECT"
500 STOP
510 REM ML ROUTINE
540 DATA"3413" ,"ST PSHS A,X,CC
550 DATA"1A50" ," ORCC #$50
560 DATA"9E8A" ," LDX $8A,
570 DATA"B602" ," LDA #$02
580 DATA"3001" ,"L1 LEAX 1,X
590 DATA"2719" ," BEQ EX
600 DATA"B5FF48" ," BITA $FF48
610 DATA"27F7" ," BEQ L1
620 DATA"9E8A" ," LDX $8A
630 DATA"3001" ,"L2 LEAX 1,X
640 DATA"2710" ," BEQ EX
650 DATA"B5FF48" ," BITA $FF48
660 DATA"26F7" ," BNE L2
670 DATA"3001" ,"L3 LEAX 1,X
680 DATA"2705" ," BEQ EX
690 DATA"B5FF48" ," BITA $FF48
700 DATA"27F7" ," BEQ L3
710 DATA"BFOE00" ,"EX STX $E00
720 DATA"3593" ," PULS CC,X,A,P
C
730 DATA"END","MARK END OF DATA

```



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T/S WORD  
by Lonnie Hortick

At long last Radio Shack has released a format program that compliments T/S EDIT which has been available for several years. As you know T/S EDIT is a line or full screen editor that runs under OS-9. It had many features that made it the beginning of a fairly inexpensive word processor. But it was difficult to center text, underline and perform all the other functions needed to fully utilize it for serious word processing. Consequently it was used to modify the MOTD or enter program listings.

But late last year all of that changed. Radio Shack released T/S WORD which is a dynamic formatter for T/S EDIT text files. It was written by Dale Lear who gave us T/S EDIT and other programs such as DOUBLEBACK. It has a visual shell with a pull down menu under the Options command. The keyboard is the only input device required. It supports multiple disks and directories and has the option of accessing the shell without having to invoke T/S WORD command again.

Radio Shack, and I, recommend that you make a backup of the disk before attempting the copying of any files. After you have your backup I strongly suggest that you copy TSEDIT and TSPARS from whatever disk you have them on to the newly backed up T/S WORD disk. This way you will have everything in one place.

After you boot your new T/S WORD - EDIT disk you will be able to create text or program files, format them and see how they will appear printed before a single letter strikes a page.

All of the T/S EDIT commands still remain intact and the VIEW function of T/S WORD gives you several more that are pretty sophisticated including a page by page graphic representation of your document. In the VIEW function the following parameters can be modified: top margin, bottom margin, page length, page offset (left margin), line length, title (automatically left justified, centers and right justified a 3 part title line), footers, fonts (access up to 3 different fonts), center, underline, page , tabs, fill/adjust (to give right justified margins), spacing, paragraph, page break, and blank line. As you access and change each and any of these commands, with the exception of the fonts, you will see an immediate change on the graphic representation of your printed document.

Other functions available in T/S WORD are PRINT (which does what it says), EDIT (to

access T/S EDIT), DIR, SPELL (for a future dictionary I am told) and OPTION. In the OPTION mode you can select from several standard commands including RENAME, COPY, FREE, DEL, SHELL, and EXIT. Since this is an OS-9 program you are also given the option of modifying this menu or any of the icons used in the menu. There is a realtime clock that is visible at the main menu. The files under the current directory are shown on the screen also.

I have found T/S WORD to be well worth the \$39.95 price tag it carries. Since no software is perfect I do have some complaints although I have found that I can live with the shortcomings I am about to describe. First, there is no provision for printing a file and editing another simultaneously. Second, you have to type in the name of the directory you wish to examine instead of being able to use the cursors as you do when you wish to examine a file.

What sets T/S WORD apart is it's ability to work with any printer since you can imbed hex codes right in the text. You can also modify the control codes in the VIEW function to access the different fonts of any printer.

On a scale from 1 to 10 I would rate T/S WORD an 8. It would have gotten a 10 if simultaneous functions were available. My recommendation is that if you already own T/S EDIT then spend the less than \$40 to fully utilize the powerful capabilities of T/S EDIT.

## MACHING LANGUAGE ADDRESS

THIS PROGRAM WILL DISPLAY OR PRINT TO THE PRINTER THE MACHING LANGUAGE ADDRESSES OF ALL M/L PROGRAMS ON THE DISK IN THE DRIVE.

```
10 :CLS:PRINTTAB(10)"** ML ADDR **
":PRINT
20 CLEAR 1500:DIM GR(68)
30 PRINT"PROGRAM WILL DISPLAY ON S
CREEN .....START, END , EXEC...
.....ADDRESSES FOR MACHINE LANGUAG
E PROGRAMS ON DISK IN DRIVE 0"
40 PRINT:PRINT"HOLD SPACEBAR DOWN
TO PAUSE.... RELEASE/PRESS AGAIN T
O CONTINUE"
50 PRINT:INPUT"DO YOU WANT HARD CO
PY (Y/N)";P$
60 IF P$="Y" OR P$="N" THEN 70 ELS
E 50
70 PRINT:INPUT"PRESS (ENTER) TO BE
GIN";MM$:CLS
```

```

80 FT$(0)="BASIC PROGRAM":FT$(1)="
BASIC DATA"
90 FT$(2)="MACHINE LANGUAGE":FT$(3
)="SOURCE CODE"
100 AF$(0)="BINARY":AF$(1)="ASCII"

110 DSKI$ 0,17,2,A$,B$:FB$=LEFT$(A
$,68)
120 FOR I=1 TO 68:GR(I-1)=ASC(MID$(
FB$,I,1)):NEXT I
130 FOR X=3 TO 11
140 DSKI$ 0,17,X,AA$,BB$
150 AA$=AA$+LEFT$(BB$,120)
160 FOR N=0 TO 7
170 NA$=MID$(AA$,N*32+1,8):EX$=MID
$(AA$,N*32+9,3):GR=ASC(MID$(AA$,N*
32+14,1))
180 FG=GR
190 FT$=MID$(AA$,N*32+12,1):AF$=MI
D$(AA$,N*32+13,1)
200 IF LEFT$(NA$,1)=CHR$(0) THEN 3
60
210 IF LEFT$(NA$,1)=CHR$(255) THEN
370
220 AF=ASC(AF$)AND 1
230 FOR I=1 TO 68
240 IF GR(GR)<128 THEN GR=GR(GR):N
EXT I
250 IF ASC(FT$)=2 THEN 380
260 IF ASC(FT$)=2 THEN PRINTTAB(9)
NA$+ "/" + EX$: IF P$="Y" THEN PRINT#-
2,TAB(9)NA$+ "/" + EX$
270 IF ASC(FT$)=2 THEN PRINTTAB(7)
"START, END , EXEC": IF P$="Y" THEN
PRINT#-2,TAB(7)"START, END , EXEC
"

```

```

280 IF ASC(FT$)=2 THEN PRINTTAB(7)
"$";BP$;",";EP$;",";EA$: IF P$="Y
" THEN PRINT#-2,TAB(7)"$";BP$;",";
EP$;",";EA$
290 IF ASC(FT$)=2 THEN PRINTTAB(7)
;:PRINT USING "#####";BP;:PRINT",";
;:PRINTUSING"#####";EP;:PRINT",";:
PRINTUSING"#####";EA
300 IF ASC(FT$)=2 AND P$="Y" THEN
PRINT#-2,TAB(7);:PRINT#-2,USING"##
###";BP;:PRINT#-2,"";:PRINT#-2,US
ING"#####";EP;:PRINT#-2,"";:PRINT
#-2,USING"#####";EA
310 IF ASC(FT$)=2 THEN 320 ELSE 36
0
320 QQ$=INKEY$
330 IF QQ$="" THEN 350 ELSE 340
340 WW$=INKEY$: IF WW$="" THEN 340
350 IF P$="Y" THEN PRINT#-2," "
360 NEXT N,X
370 END
380 LG=GR(GR):LS=LG AND 31:LL=GR
390 LB=ASC(MID$(AA$,N*32+16,1))
400 IF FG<34 THEN TN=INT(FG/2) ELS
E TN=INT(FG/2)+1
410 SN=1+(FG AND 1)*9
420 DSKI$0,TN,SN,A$,B$
430 BP=ASC(MID$(A$,4,1))*256+ASC(M
ID$(A$,5,1))
440 BP$=HEX$(BP):BP$=STRING$(4-LEN
(BP$),"0")+BP$
450 EP=BP+ASC(MID$(A$,2,1))*256+AS
C(MID$(A$,3,1))-1
460 EP$=HEX$(EP):EP$=STRING$(4-LEN
(EP$),"0")+EP$

```

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30

```

470 IF LL<34 THEN TN=INT(LL/2) ELS
E TN=INT(LL/2)+1
480 SN=(LL AND 1)*9+LS
490 DSKI#0,TN,SN,A$,B$:A$=A$+LEFT$
(B$,127)
500 EA=ASC(MID$(A$,LB-1,1))*256+AS
C(MID$(A$,LB,1))
510 EA$=HEX$(EA):EA$=STRING$(4-LEN
(EA$),"0")+EA$
520 GOTO 260

```

## OS9

By Bill Smith

Color Computer owners have long been known for bragging about the power of our machine. We compare it to Commodore, Atari, Apple and IBM computers. Speedy disk access is usually mentioned. We speak of its superior processor with the ability to run more than one program at the same time.

But the power of the Coco's 6809 processor has only been indirectly available to most Coco users. Unless you are using OS9 or you are an assembly language programmer, you probably haven't used multi-tasking. Microsoft BASIC doesn't support it. The available programs that will let BASIC perform two or more tasks simultaneously have limited use.

The OS9 user, on the other hand, is able to tap the full range of capabilities of the Coco. He has available to him many of the same facilities to which the user of mini-computers and mainframes have long been accustomed.

Well, enough bragging! What is OS9 and what does it do? Simply put, OS9 is an operating system; a program that controls the resources of the computer and runs the other programs. With OS9 it's a simple matter to run two or more programs at the same time without any special preparation by the programmer. This is known as multi-tasking. Output can be re-directed to another device such as the printer or a disk file, or to another program as input, or to both. All this is done by OS9 at the request of the operator. The programs themselves aren't directly involved.

Often a user finds that he is constantly repeating a series of commands or procedures while he works with the computer. These can be entered into a file and can be executed at any time with a single command. This type of file is usually called a

procedure file. A special procedure file, named startup, can contain commands that will be automatically executed when OS9 is initialized. This is handy for setting printer baud rates and can be used to run whole series of programs.

There are a large number of commands that can perform useful functions for any user. There are commands to list files, to build them, to merge them, to compare two files, and many, many more. In BASIC it would be necessary to write small programs to perform these functions; a time consuming task for programmers and very difficult for those with little programming experience. There are two ways to boot OS9, depending on the type of disk controller you have. When you turn on the computer, basic displays it's sign on message 'DISK EXTENDED COLOR BASIC 1.n', where n is the version of BASIC in your controller. If you have version 1.0, then put the OS9 BOOT DISK into drive 0 and type RUN "\*\*". You will be asked whether to check the disk speed or boot OS9. Type <B> to boot OS9, and put in the OS9 SYSTEM MASTER when you are told to do so.

If you have DISK BASIC 1.1 or later, put the OS9 SYSTEM MASTER into drive 0 and type <DOS>. From this point OS9 is the same for all versions of BASIC.

The first thing you should do when you get OS9 is to make a back-up of the master disk. It's a good policy to set the OS9 master aside and use it only to make copies, and then use the copies. That way you always have an unmodified master disk to fall back on if you have problems. To make a backup, follow the directions in the book "Getting Started With OS9" that comes with the system. Once you have made the backup, you can feel free to experiment all you like with it. If you make too many mistakes, you can just make another copy.

Let's explore a little bit around the system disk. Probably the most often used command in OS9 is 'dir'. It gives you a list of some of the files on the disk. Type the word DIR and press <ENTER>. You should see something like:

```

Directory of . 22:09:43
OS9Boot  CMDS  SYS
DEFS      startup

```

The first line tells you that this is a directory listing and that it was made at 22:09:43 which is military time for 43 seconds after 10:09 PM. Beginning on the second line of the directory listing are the names of the files. Notice that on the first

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line it says that this is a directory listing of '.'. The dot is OS9 shorthand for the current data directory. What? What's a 'current data directory?' Well, that's one of the interesting features of OS9. A disk can have more than one directory. Let's take a closer look at the file names in the above directory listing. Some of them are made entirely of upper case letters. Some are all lower case, and some are mixed. It's a convention of OS9 that file names contain lower case letters and directories are made entirely of upper case letters. A name that contains both, such as "OS9ome are all lower case, and some are mixed. It's a convention of OS9 that file names contain lower case letters and directories are made entirely of upper case letters. A name that contains both, such as "OS9Boot", is therefore a filename. This is not a hard and fixed rule. You can break it if you like. As long as you know which names represent files and which represent directories, all is well.

In the above directory listing, SYS is the name of a directory. If you type the command "dir SYS", you will get a directory of the files (or directories) in SYS:

```
Directory of sys 21:40:35
errmsg      password  cmds.hp
```

Any directory can contain files or directories. That means that directories can be nested one inside another till they are several levels deep. Imagine a directory named DIRA that contains a directory named DIRB that contains a directory named DIRC, etc. If DIRC contains a file named filea, then filea can be referred to as DIRA/DIRB/DIRC/filea. The slash is used to separate the various levels. This could require a lot of typing if you have to refer to filea very often. A command that alleviates this problem is CHD. After typing CHD DIRC, you are located in DIRC, and filea can be called simply filea. CHD means change directory. Any file that is in the directory that you are "in" can be referred to by its name. The directory that you are in is called the current data directory.

Try using the CHD command to move around among the various directories on your system master. While you are doing this you can examine the files on the disk with the LIST command. You can see the startup file by typing LIST startup, for example. If you try to list a directory, you will get an error message. Don't worry about errors. OS9 uses error messages both to warn about errors and to give information. You will get used

to them.

In next month's column, we will discuss the meaning of some of the common error messages. In addition, there will be a listing for a program that will explain errors whenever you ask it to.



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## IMPOSSIBLE TRIANGLE

You thought it couldn't be done. Wait till you see this twisted triangle on your screen. The impossible. GREAT ART.

```
70 CLS4:PRINT@46, " THE ";
80 PRINT@102, "IMPOSSIBLE TRIANGLE
";
90 FORX=1TO2000:NEXT
100 PMODE 3,1
110 PCLS 4
120 SCREEN 1,0
131 COLOR 1,4
132 FORX=1TO40
134 READ A,B,C,D
140 LINE(A,B)-(C,D),PSET
150 NEXT X
160 PAINT(56,20),1,1:PAINT(136,64)
,1,1:PAINT(120,80),1,1
170 PAINT(192,88),3,1:PAINT(76,48)
,3,1:PAINT(124,60),3,1
180 PAINT(68,12),2,1:PAINT(80,84),
2,1:PAINT(92,128),2,1
190 PAINT(36,156),2,1:PAINT(36,168)
,3,1:PAINT(84,178),2,1
200 PAINT(88,118),2,1:PAINT(144,86)
,2,1
210 GOTO 210
220 DATA 68,4,200,76,52,12,112,44,
128,52,172,76,128,52,68,84,112,44,
84,60,128,68,100,84,68,36,96,52,12
8,68,154,84,126,68,126,116,130,54,
130,68
230 DATA 68,4,52,12,172,76,142,90,
142,76,142,108,142,108,200,76,200,
76,200,92,200,92,68,164,128,116,84
,140,52,12,52,154,52,154,68,164,68
,164,68,100,68,36,68,84,84,45,84,7
6
240 DATA 84,109,84,140,68,100,96,1
16,84,124,112,108,68,84,128,116,84
,76,112,92,112,77,112,108
250 DATA 84,119,92,115,142,86,148,
83,180,66,186,62,186,62,236,90,236
,90,68,184,68,184,16,154,16,154,52
,133,16,154,16,160,16,160,68,190,6
8,190,68,184,68,190,236,96,236,96,
236,90
```



## "PITSTOP II" a review by Joseph Kohn

Epyx has finally created a road race game worthy of the CoCo. Past attempts were disappointing because they either used overhead views, silly car crashes as hazards or were limited to a single player. "PITSTOP II" has cured all this!

The game is on an unprotected disk and requires 64k and joysticks. I personally recommend the self-centering type or even a Koala pad. The disk must be kept in the drive since screen displays are auto-loaded when necessary.

There are several modes of play: 1 or 2 players, 6 race tracks modeled after real ones, number of laps per race, and 3 skill levels. It is not clear what changes with the different skill levels.

Now for the action! Once all the mode options are selected, the screen splits. The upper screen is the view for the first player and lower screen for the second player or the computer, if playing solo. Both cars are shown from the rear with a slight downlooking angle. This is important, since all tires must be watched during the race, as explained later. Instrumentation consists of a digital speedometer and a fuel gauge. Each player's screen has a small map of the track showing their car's location.

The racetrack stretches off in the distance to the hills, sky and clouds, which scroll horizontally with turns in the road. This is one shortfall of the graphics, a relatively uninteresting background. But "PITSTOP II" makes up for it!

Firebuttons start the race and may be used to "turbo" accelerate. The joystick controls steering, acceleration and braking. The objective is to finish the race and beat your opponent. Simple? Right? Wrong!

Planning and skill are required to win, at levels higher than needed for other race games. There are no crash hazards, in fact it is not even possible to go off the track. The hazards, as for a skilled race driver, are the tire wear and fuel consumption. You have to watch both or you may be stuck out on the track with no way back.

Here is where strategy comes into play. Tires wear out by high speeds, bumping cars and riding the white/red curbs. Wear indicators appear as changing colors on each tire. The worst is white, which means you'll probably get a blowout before the race ends.

Each racer must observe his tires and fuel. At the end of each lap, a decision must be made whether or not to make a "pit stop". The pit is entered by steering into the

black/white curb near the start/stop line. Once in the pits, the player's screen changes to show the car, stacks of tires and two pit crewmen. With the joystick you select and control the movements of each of the crew. One is in charge of the fuel and the other changes tires. You have to remember which tires needed changing.

Needless to say, while you're in the pits, your opponent is whizzing along! After service is complete, select the driver and you're off and running again. The action in the pits can be crucial and it will take some practice just to master this aspect of the game.

The track action is well done. Besides your opponent there are random cars that must be passed. Everything is synchronized, a car you have to pass will have to be passed by your opponent. Things get real busy when the two contenders are trying to pass each other and a third car. All the action is right there, from each player's perspective. You have to slow down or hug the inside of the curves to keep tire wear down. You can almost feel yourself skidding around the turns!

Overall, the game is excellent, the graphics are super, the sound is good and the simulation is well developed. The ability to have two players race simultaneously is significant, too many games only allow solo performances. In summary, this is probably

the "P-51" of road racing. "PITSTOP II" is sold by Radio Shack (#26-3282) at \$29.95

## NAME FILE

A simple data base to store names and addresses. Print out what fields you wish. Very user friendly.. Save the data to disk or cassette.

```

1 CLS: CLEAR 7000: DIM A$(1000): GOTO 30
2 T$=STRING$(T,128): A=LEN(A$): IFA+
T>31 THEN A$=A$+STRING$((31-A),32)
3 PRINT A$ " "; A=(PEEK(136)*256)+PE
EK(137): A=A-1024: PRINT T$;: PRINT @A,
";: LINE INPUT A$: RETURN
4 PRINT "PRESS ANY KEY TO CONTINUE"
;
5 A$=INKEY$: IFA$="" THEN 5
6 A=VAL(A$): RETURN
30 CLS: PRINT: PRINT "1. ADD/INPUT DA

```

```

TA": PRINT "2. LOAD DATA": PRINT "3. S
AVE DATA": PRINT "4. EDIT/VIEW DATA"
: PRINT "5. PRINT DATA": PRINT "6. PRI
NT COLUMN W/TOTAL": PRINT "7. TOTAL
COLUMN": PRINT "8. END PROGRAM"
40 GOSUB 5: ON A GOTO 100,200,300,40
0,500,600,700,50
50 IFS=0 THEN PRINT "DATA NOT SAVED "
;: INPUT "END Y/N"; AA$: IFAA$<>"Y" THE
N 30 ELSE END
60 END
100 RESTORE: READ X: CLS: PRINT "ENTER
* IN FIRST FIELD FOR MENU": PRINT
110 READ A$: READ T: Z=Z+1
115 GOSUB 2: A$(Z)=AA$: IFAA$="" THE
N Z=Z-1: GOTO 30
120 FOR Y=Z TO (X+Z)-2: Z=Z+1
130 READ A$: READ T: GOSUB 2: A$(Z)=AA$
140 NEXT: RESTORE
199 GOTO 100
200 CLS: PRINT TAB(8) "LOADING DATA":
PRINT TAB(6) "ENTER * TO ABORT": T=8
: A$="enter FILENAME OF DATA ": GOSU
B 2: IFAA$="" THEN 30
205 PRINT "TAPE OR DISK (T/D)": GOSU
B 5: IFA$="T" THEN A=-1: GOTO 210
206 IFA$="D" THEN A=1 ELSE GOTO 205
210 OPEN "I", #A, AA$: INPUT #A, Z
220 FOR Y=1 TO Z: INPUT #A, A$(Y): NEXT
230 CLOSE: RESTORE
299 RESTORE: READ X: PRINT: PRINT Z/X; "
FILES LOAD": GOSUB 4: GOTO 30
300 S=1: CLS: PRINT TAB(8) "SAVING DAT
A": PRINT TAB(6) "ENTER * TO ABORT": P
RINT: T=8: A$="enter FILENAME OF DAT
A ": GOSUB 2: IFAA$="" THEN 30
305 PRINT "TAPE OR DISK (T/D)": GOSU
B 5: IFA$="T" THEN A=-1: GOTO 310
306 IFA$="D" THEN A=1 ELSE GOTO 305
310 OPEN "O", #A, AA$: PRINT #A, Z
320 FOR Y=1 TO Z: PRINT #A, A$(Y): NEXT
330 CLOSE: RESTORE
399 PRINT: PRINT Z/X; " FILES SAVED":
GOSUB 4: GOTO 30
400 CLS: PRINT TAB(8) "EDIT DATA": PRI
NT: PRINT "USE ARROW KEYS TO SCAN DA
TA. PRESS UP ARROW TO EDIT FILE
DISPLAYED. PRESS THE @ KEY TO
DELETE A FILE. PRESS * TO RETUR
N TO MENU": PRINT: GOSUB 4
410 Y=1
420 RESTORE: READ X: CLS
430 FOR N=Y TO ((Y+X)-1)
440 READ A$: READ T: PRINT N; ". " A$; " ";
A$(N): NEXT: Y=Y+X: PRINT: PRINT
450 GOSUB 5
451 IFA$=CHR$(8) THEN Y=Y-(X+X): IF
Y<=0 THEN 410 ELSE 420
452 IFA$=CHR$(9) AND Y<Z THEN 420

```

```

453 IFA$="*"THEN30
454 IFA$="@ "THEN460
455 IFA$="^"THEN470
456 GOTO450
460 PRINT"ARE YOU SURE YOU WISH TH
IS FILE DELETED":GOSUB5:IFA$<>"Y" T
HEN420
461 FORW=Z TO Z-X STEP-1
462 A$(Y-1)=A$(W):Y=Y-1:NEXT
463 Z=Z-X:Y=Y+1:GOTO420
470 Y=Y-X:INPUT"EDIT WHICH LINE";A
:IF A<1 OR A>Z THEN420
480 PRINT"ENTER NEW DATA":LINEINPU
TA$(A):GOTO420
500 RESTORE:READX:CLS:PRINTTAB(4)"
PRINT DATA TO PRINTER":PRINT:PRINT
"DO YOU WISH TO PRINT IN ROW OR C
OLUMN (R/C)":GOSUB5:IFA$="R" THENR
=0:GOTO510
505 IFA$="C"THEN R=13ELSE 30
510 FORY=1TOX:READA$:READT:PRINT"P
RINT USING ";A$;" (Y/N)":GOSUB5:IF
A$="Y" THEN R(Y)=1 ELSE R(Y)=0
520 NEXT:PRINT:INPUT"NUMBER OF BLA
NK SPACES BETWEEN FILES";R(0):IF
R(0)<0 THEN R(0)=0
530 PRINT"PRINT USING HEADINGS (Y/
N)":GOSUB5:A=ASC(A$)
535 IFA=89 AND R=0 THEN GOSUB591

```

```

540 CLS:PRINT:PRINT:PRINT:PRINTTAB
(10)"PRINTING"
550 FORY=1 TO Z STEPX:RESTORE:READ
X
555 FORW=1TO X
556 READA$:READT:IF R(W)=0 THEN 58
0
560 IF A=89 THEN PRINT#-2,A$;" ";
570 PRINT#-2,A$((W+Y)-1),CHR$(R);
580 NEXT:FORW=1 TO R(0):PRINT#-2,"
":NEXT
590 NEXT:GOTO30
591 RESTORE:READX:FORW=1TOX:READA$
:READT:IF R(W)=0 THEN 593
592 PRINT#-2,A$,
593 NEXT:PRINT#-2," ":A=0:R=0:RETU
RN
600 CLS:PRINT:PRINT:PRINTTAB(6)"TO
TAL WHICH COLUMN":PRINT
610 RESTORE:READX:FORY=1TOX:READA$
:READT:PRINTY". "A$:NEXT:PRINT:GOS
UB5:IFA$="*"THEN30
615 RESTORE:READX:FORY=1TOA:READA$
:READT:NEXT:PRINT#-2,,A$
620 FORY=1 TO Z STEPX
625 PRINT#-2,,A$((Y+A)-1)
630 GT=GT+VAL(A$((Y+A)-1)):NEXT
640 PRINT#-2,,STRING$(LEN(A$),"=")
:PRINT#-2,"TOTAL EQUALS "GT:PRINT:
GOTO30
700 CLS:PRINT:PRINT:PRINTTAB(6)"TO
TAL WHICH COLUMN":PRINT
710 RESTORE:READX:FORY=1TOX:READA$
:READT:PRINTY". "A$:NEXT:PRINT:GOS
UB5:IFA$="*"THEN30
720 FORY=1 TO Z STEPX
730 GT=GT+VAL(A$((Y+A)-1)):NEXT
740 PRINT:PRINT"TOTAL EQUALS "GT:P
RINT:GOSUB4:GOTO30
1000 DATA5
1010 DATA NAME,26
1020 DATA ADDRESS,25
1030 DATA CITY,15
1040 DATA STATE,2
1050 DATA ZIP,5

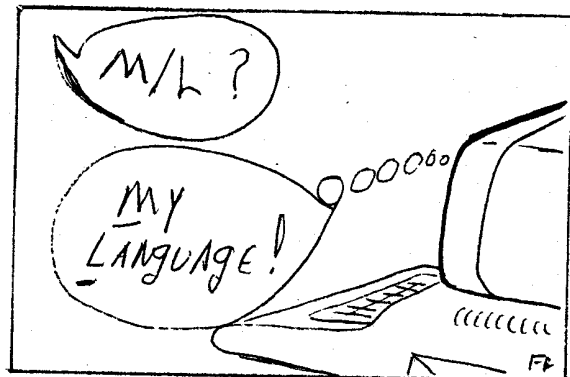
```

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# HANGMAN

HANGMAN IS A NICE LITTLE GAME TO HELP YOU SPELL WORDS. JUST FOLLOW ALL PROMTS AND TRY TO GUESS THE WORDS.. YOU CAN ADD OR CHANGE THE WORDS IN THE DATA STATEMENTS AT THE END OF THE PROGRAM.

```

1 GOTO6
2 FORT=1TO1000:NEXT:RETURN
3 FORT=1TO5:SOUNDRND(99)+99,1:NEXT

4 GOSUB2:PRINT@450,C$;LEFT$(C$,2);
:RETURN
5 C=1:R=R+1:PRINT@360+X,I$;:RETURN

6 FORX=8TO0STEP-1:CLS(X):PRINT@238
,X+1;:SOUND35,X+2:NEXT
7 CLS:PRINT@172,"HANGMAN":PRINT@20
7,"by":PRINT@234,"DS LEWANDOWSKI":
PRINT@265,"DONATED TO CCOG"
8 A$="DRIVEDRIVEDRIVEDRIVEDRIVEDRI
VEDRIVEDRIVEDRIVEDRIVE":C$="FORFOR
FORFORFORFORFORFORFORFORFORFORFORF
ORFORFORFORFORFORFORFORFORFOR"
9 DIMW$(50),W(50),I(90)
10 FORX=1TO50:READW$(X):W(X)=0:NEX
T:FORX=65TO90:I(X)=0:NEXT
11 GOSUB2
12 P=RND(50):IFW(P)=1THEN12
13 CLS(0):PRINT@265,A$;:X=18:FORY=
0TO15:SET(X,Y,5):NEXT:SET(19,14,5)
:SET(20,15,5)
14 PRINT@58,"WON";:PRINT@90,W;:PRI
NT@153,"LOST";:PRINT@186,LO;:IFW+L
0=49THENGOSUB66
15 Y=0:FORX=19TO31:SET(X,Y,5):NEXT
:SET(20,1,5):SET(19,2,5)
16 SET(31,1,5):Y=417:FORX=65TO90:Y
=Y+1:PRINT@Y,CHR$(X);:NEXT
17 L=LEN(W$(P)):W(P)=1:FORX=361TO(
360+L):PRINT@X,"-";:NEXT
18 PRINT@450,"YOUR GUESS";
19 I$=INKEY$:IFI$=""THEN19
20 IFPEEK(282)=0THENPOKE282,255:GO
TO19
21 X=ASC(I$):IFI(X)=1THENPRINT@450
,"YOU USED THAT LETTER";:GOSUB3:GO
TO18
22 IFASC(I$)<65THEN PRINT@450,"inv
aild character";:FORX=1TO1000:NEXT
:PRINT@450,C$;:GOTO18
23 FORX=1TOL:IFI$=MID$(W$(P),X,1)T
HENGOSUB5
24 NEXT
25 X=ASC(I$):PRINT@418+(X-65),CHR$
(X+32);:I(X)=1
26 IFC=1THEN34
27 H=H+1:ON H GOTO 28,29,30,31,32,
33

```

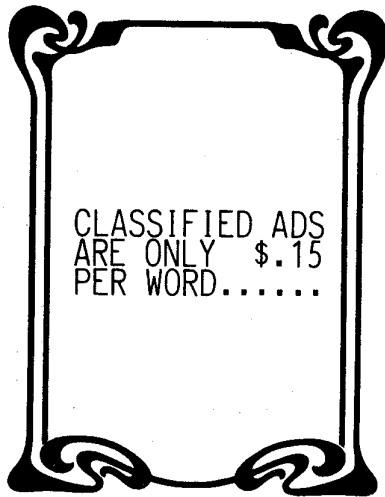
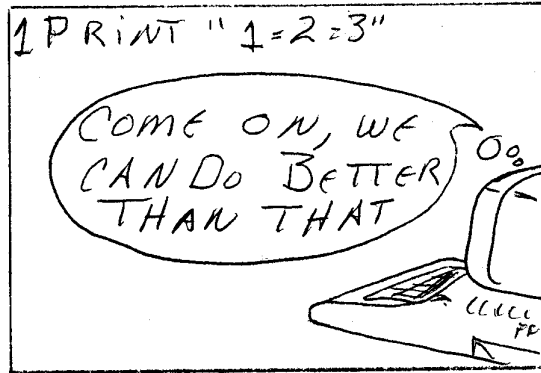
```

28 PRINT@450,"I AIN'T GOT NO BODY"
;:GOTO47
29 PRINT@450,"WATTA BOD'";:GOTO48
30 PRINT@450,"WHAT'S LEFT";:GOTO49

31 PRINT@450,"THAT'S RIGHT, wrong"
;:GOTO50
32 PRINT@450,"DIDN'T YOU READ WEBS
TER";:GOTO51
33 PRINT@450,"GOOD-BYE CRUEL WORLD
";:GOTO52
34 C=0:IF R=L THEN54
35 ON R GOTO 36,37,38,39,40,41,42,
43,44,45,46
36 PRINT@450,"GREAT GUESS !!";:GOS
UB3:GOTO18
37 PRINT@450,"THAT'S THE WAY";:GOS
UB3:GOTO18
38 PRINT@450,"KEEP IT UP";:GOSUB3:
GOTO18
39 PRINT@450,"DON'T STOP NOW";:GOS
UB3:GOTO18
40 PRINT@450,"YOUR ALMOST THEIR";:
GOSUB3:GOTO18
41 PRINT@450,"YOUR REALLY COOKING"
;:GOSUB3:GOTO18
42 PRINT@450,"IT CAN'T BEAT YOU NO
W";:GOSUB3:GOTO18
43 PRINT@450,"YOU'VE GOT IT MADE";
:GOSUB3:GOTO18
44 PRINT@450,"UNBELIEVABLE";:GOSUB
3:GOTO18
45 PRINT@450,"SORRY, NO WORDS THIS
LONG!!";:GOSUB3:GOTO54
46 GOTO54
47 FORX=30TO32:SET(X,2,2):SET(X,4,
2):NEXT:SET(29,3,2):SET(33,3,2):GO
SUB3:GOTO18
48 FORY=6TO9:FORX=28TO33:SET(X,Y,4
):NEXT:NEXT:SET(31,5,2):GOSUB3:GOT
O18
49 SET(27,6,8):SET(26,7,8):SET(25,
8,8):GOSUB3:GOTO18
50 SET(34,6,8):SET(35,7,8):SET(36,
8,8):GOSUB3:GOTO18
51 FORY=10TO13:SET(32,Y,3):NEXT:SE
T(33,13,3):GOSUB3:GOTO18
52 FORY=10TO13:SET(29,Y,3):NEXT:SE
T(28,13,3):GOSUB3
53 LO=LO+1:GOTO55
54 PRINT@450,"YOU WIN !!";:W=W+1:G
OTO56
55 PRINT@361,W$(P);:PRINT@450,"THE
WORD WAS ";W$(P);
56 FORX=65TO90:I(X)=0:NEXT:H=0:C=0
:L=0:R=0
57 GOSUB3
58 PRINT@450,"TRY AGAIN ??";
59 B$=INKEY$:IFB$=""THEN59
60 IFB$="Y"THEN12ELSEEND

```

61 DATA APPLE, AIRPLANE, AUNT, ATOMIC  
 , ASPRIN, BATTLESHIP, BASEBALL, BULKHE  
 AD, CARGO, COOKIE  
 62 DATA COMPUTER, CONGRESS, CAMERA, D  
 EXTROSE, DIVIDE, DECIMAL, CAMPHOR, EAR  
 TH, EASEL, EBONY  
 63 DATA FLIGHT, FELONY, GOATEE, GODDE  
 SS, HEART, HATCH, INDENT, INLAND, JUDGE  
 , JUBILANT  
 64 DATA KEYNOTE, KAZOO, LARYNX, LASER  
 , MALACHITE, MARBLES, NEBULOUS, NERVOU  
 S, OBSERVE, OFFICIAL  
 65 DATA QUEST, RECEIVE, SABER, TAILOR  
 , ULTIMATE, VACCINE, WAIVE, XENON, YACH  
 T, ZENITH  
 66 FORX=1T050:W(X)=0:NEXT:RETURN



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|----------|-------|----------|---------|----------|-------|----------|-------|
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| BASICMAP | U,K   | BIORHYTH | G,K,P   | CALENDER | U,P   | CALPRINT | U,P   |
| CHECKERS | G,J   | CHESS    | G,K     | COMPLAWS | G,K   | CONVERSE | U     |
| CONVERT  | E,B   | DEC<>HEX | U       | DIRLIST  | U,D,P | DISKDUMP | U,D,P |
| DISKLIST | U,D,P | DISKTEST | U,D     | DODGE-EM | U,D   | DOGPICT  | PICT  |
| DOORS    | G,K   | ELECTMAZ | G,J     | EVADER   | G,K   | FUELCOST | B     |
| GOLDMINE | G,K   | HANGMAN  | G,K     | HEXTODEC | U     | HOMOYMS  | E     |
| ICE      | G,J   | IN-OUT   | DESIGN  | JOYPAINT | G,J   | LANDER   | G,K   |
| MAILLIST | F,P,C | ML ADDR  | U,D,P   | NUKATTC  | G,K   | OHMSLAW  | U,B   |
| OTHELLO  | G,K   | PAINT    | DRAW    | PATROL2  | G,J   | PINGPONG | G,J   |
| PRINUTIL | U,K   | PUMPKIN  | PICTURE | ROMRAM   | U,64K | SOISAYS  | G,K   |
| SOUNDDEM | DEMO  | STATECAP | G,K     | TANKS    | G,J   | TESTPATT | U     |
| UPPER32K | U,64K | WHERISIT | G,K     |          |       |          |       |

F-FILE G-GAME B-BUSINESS U-UTILITY E-EDUCATIONAL C-CASSETTE D-DISK  
 P-PRINTER K-KEYBOARD J-JOYSTICK

RS20

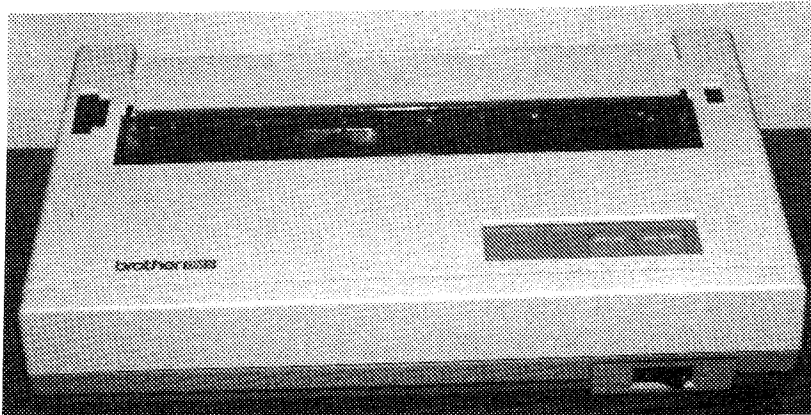
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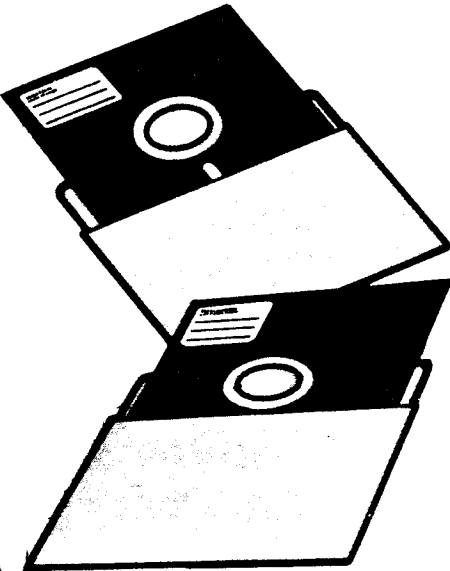


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