

TRS-80[®]

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Microcomputer News

- Games Issue
- Profile III Plus Series
- CoCo in Education





Fort Worth Scene

Well, it seems like July is here once again. Besides July 4th, July is interesting around here because it is the start of Tandy Corporation's fiscal year. This makes it kind of like Christmas. The new budget is out and everyone gets to see how much of what they requested got approved. We have requested some changes in *TRS-80 Microcomputer News*, and should know by July if we get them or not. Since I am writing this in May, all I really know is that the changes are being considered. If we get the changes, you can expect to see some of them in the September or October issues.

Well, back to the present (which for me is May 10th). I will be attending the National Computer Conference (NCC), which begins May 16th. NCC is really kind of fun for me, since it is my big opportunity to see what is happening in the world of computers outside Tandy/Radio Shack. (Yes, there are computers made by companies other than Radio Shack!)

My wife, Denise, is coming along and we are going to take our first "real" vacation. Since NCC is in Anaheim, California this year, we are going to Disneyland and some other neat places. Marcella, my production coordinator and right hand lady, tells me that this vacation is long overdue. Apparently I have been a little cranky lately.

This issue of *Microcomputer News* is full of all types of games, and game related programs and articles. We have games for the Color Computers, the Model I/III/4, and even Pocket Computer games to fill in the holes. We have deliberately kept other material to a minimum so we could get as many of these programs to you as possible.

We expect you to notice a wide variety in the programming skills of the program authors. If you are just beginning your computing activities, you may want to study these programs and the methods the authors used to accomplish their goals. Programming styles are very individual and each programmer must create his/her own. We hope that you can have fun with some of the games, pick up a few programming how to's (or how not to's depending on your view point), and maybe you will even take the time to translate a program to run on your machine.

A NOTE TO COLOR COMPUTER GAMERS

Klendathu (26-2567), a game program for Color Computers, does not specify that it requires Extended Color BASIC to run, it should have. Klendathu is a terrific program with exceptional graphics. If you have an Extended Color BASIC Computer I recommend this game highly.

A NOTE TO MODEL II/12/16 HARD DISK OWNERS

If you own a Radio Shack 8 or 12 Meg Hard Disk system for your Model II/12/16, you received a Media Error Map with each of the hard drives in the system (probably in a little plastic bag attached to the underside of the drive). You will need this Media Error Map to format the hard drives for Xenix or TRSDOS 4.3.11 for ArcNet.

We recommend that you make at least one photocopy of this map and store the copy in a safe place. If you should happen to misplace the Media Error Map and not have a copy available, another one will have to be created and this could require taking the hard drives to a Radio Shack repair facility.

MAGAZINES

Below are five magazines of special interest to TRS-80 owners that we believe have editorial content of high quality and will be of use to our customers.

Basic Computing - The TRS-80
User Journal (Name change for
80-US Journal—covers all TRS-80's)
3838 South Warner Street
Tacoma, WA 98409
(206)475-2219

Color Computer Magazine
Highland Hill
Camden, ME 04843
(207)236-9621

Color Computer Weekly
P.O. Box 1355
Boston, MA 02205

Rainbow (Covers the TRS-80 Color Computer)
5803 Timber Ridge Dr.
Prospect KY 40059
(502)228-4492

two/sixteen magazine
P.O. Box 1216
Lancaster, PA 17603
(717)397-3364



The front cover shows two children playing games on a TRS-80 Color Computer.

TRS-80[®] Microcomputer News

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The TRS-80 Newsletter welcomes the receipt of computer programs, or other material which you would like to make available to users of TRS-80 Microcomputer systems. In order for us to reprint your submission, you must specifically request that your material be considered for reprinting in the newsletter and provide no notice that you retain copyrights or other exclusive rights in the material. This assures that our readers may be permitted to recopy and use your material without creating any legal hassles.

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Material may be submitted by mail to P.O. Box 2910, Fort Worth, Texas 76113-2910, or through CompuServe. The Microcomputer News' CompuServe user ID number is 70007.535.

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View From the Seventh Floor

by Jon Shirley
Vice President
Radio Shack Computer Merchandising

The editors tell me this issue is on games. Now, while I do not play a lot of games, I see enough of them to drive me nuts. My home is a test bed for Color Computer games with my 13 and 16 year olds being the active testers. I see a lot of games that you will never see either, because they simply do not make the grade, or because they go through a lot of modifications from start to finish. To preserve my sanity, I do have the kids wear earphones to play some of the action games.

I know of some fantastic games for the Color Computer that will be out this fall, including the best adventure game ever, but you will have to wait to find out about them. What I want to talk about are games that are really educational programs in disguise. We have been working with the Childrens Computer Workshop for over a year and a half to bring out some really good educational software.

The Childrens Computer Workshop is an offshoot of the The Childrens Television Workshop, the Sesame Street people. With a little luck, as you read this, the first programs should be available in the stores. These are cassette programs for 16K Color Computers with Extended BASIC. They are grouped by age group and the first set out will be for kids in the 3 to 6 year old set and the next set will be for the 7 to 10 year olds.

While these programs, with names like Taxi, Grover's Number Rover, Ernie's Magic Shapes, and Peanutbutter Panic, look and play like games, they have high educational value. A lot of research went into each product, and they are designed to instruct in specific areas. For example, the 7 to 10 set teaches cooperative strategy—where two players, working together, will do better than if they compete with each other.

The 3 to 6 age group is taught basic numbers, words, shapes, and relational values. Each package has a lot of play value and repeat value, as all have multilevels of play. In fact, the programs are on cassette because they are much too large to fit in a program pak. If you have children in these age groups, come take a look at these programs. We are very proud of them and we believe they represent an advance in the technology of using computers to teach.

MODEL II OWNER'S NOTE—If you have an early version Model II, the one that came with a disk drive terminator, and you have an expansion bay, you have probably noticed that the disk in drive 0 can be badly messed up, if the expansion bay is not on when the Mod II is booted or if the drive is accidentally turned off. Our new auto power strip (26-1429) will force the drive to turn on correctly but will not help if the bay is turned off separately.

A small company sent me a sample solution for that problem. The item is a small in-line connector that goes between the Model II and the disk bay cable. We tested it, and it works quite well. The device allows the bay to be turned

off or on, at any time, without any bad effects. The only drawback would be if you use both a disk bay and a hard disk as the device covers the hard disk connector. The product is called the SeeBee and costs \$59.95 plus \$3 postage from Systems Enhancement Engineering, P.O. Box 40215, Indianapolis, IN 46240. It looks like a good device, especially for Mod II users who have various people using the machine that might not follow the power up instructions.

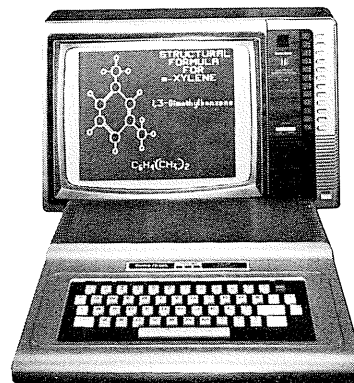
Once in a while I get asked by the press: What is the best new program you have seen recently? Right now, my answer to that question would be Multiplan, the Microsoft spreadsheet program. It is available from us for the Model II and 12, and we have a multiuser version for the Model 16. It will be available shortly for the Model 4. (I am sorry, but it simply will not fit in a Model III or I due to memory limitations.)

Multiplan is a super, user-friendly program. All selections are made from menus, and there is a Help key that brings up a screen of information that is keyed to the command you are using at that time. You can read all about that command then hit Resume and be right back where you were. Multiplan has many features over the original spreadsheet, VisiCalc, the best of which is probably the ability to link several sheets together automatically so that memory size need not be a limitation.

But while it is truly a second (third?) generation spreadsheet in features, it is the user-friendly interface that is its most visible and best feature. Many commands bring up additional menus and often suggest a response based on what you have been doing! If you last did a Copy down 5 rows, the next time you do a Copy, the program will suggest 5 again. It is almost as if the computer was thinking for you. In a recent review of Multiplan, the reviewer noted that the suggested responses were exactly what he wanted, about 80% of the time.

If you want to take a look into the future of software, come and get a demo of Multiplan, as I believe that a lot of software will have similar capabilities in the future.

Until next month.



Accessing Profile III Plus Data From BASIC

The small Computer Company

P.O. Box 2910

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By Ivan Sygoda, Director, Pentacle

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More readers have written in to ask about accessing Profile III Plus data from BASIC than about anything else. It's really quite easy, once you get the hang of it. Relatively few commands are involved, and they always follow the same pattern, regardless of your application.

THE BASIC FACTS

Profile III Plus stores your data record by record in variable length random access files, in ASCII format. To get an overview of what this involves, re-read your Model III Disk System Owner's Manual (26-2111), pages 123-125, 134-145, and 150-154. The pertinent commands are illustrated there, and you should refer to these sections if you have trouble following the sample program.

To simplify matters, I'll use the STAMPCAT stamp collector's data base from last month's Profile article. This is a one-segment file that records information about each stamp in my collection. Figure 1 lists the STAMPCAT fields I created with their lengths, and the variable names I arbitrarily assigned to each in the buffer:

Field	Heading	Length	Buffer variable
1	Cat#	6	CT\$
2	Suffix	1	SF\$
3	Item ID	2	ID\$
4	#Stamps	2	NS\$
5	Year	4	YR\$
6	Denom	5	DN\$
7	Series	15	SR\$
8	Color/Var	12	VR\$
9	Dealer	3	DL\$
10	Purch.date	8	PD\$
11	Price	7	PR\$
12	Mint/Used	1	MU\$
13	Cond:Recto	10	CR\$
14	Cond:Verso	10	CV\$
15	Scott val	7	SV\$
16	Mkt val	7	MV\$
17	Source	3	SC\$
18	±%	5	CH\$
19	Last upd	8	LU\$
20	Marker	1	MK\$
21	Face val	6	FV\$

Figure 1: STAMPCAT field assignments

Figure 2 shows how Profile stores the data in STAMPCAT/KEY, as one string of 127 ASCII characters after another, in the order the records were entered. You can get such a printout for any Profile data segment by entering the command "LIST filename/ext (ASCII,PRT)" at TRSDOS. The figure also illustrates the reason that the buffer containing these records has to be "fielded". This, is so BASIC will know how to find, for instance, the name of the dealer who sold the stamp. In each record, this three-character string is buried in the midst of other alphanumeric characters.

A MATTER OF STYLE

One comment before we dive in. There are as many styles of BASIC programming as there are programmers. That's one of the reasons programming is fun. The program that follows is neither the fastest nor the most compact way to display data (nor is it the most elegant). You'll think of a better way, and we'll be delighted to hear about it. Also, if you're interested in perfecting your programming skills, I heartily recommend Lewis Rosenfelder's *Basic Faster and Better* (62-1002), available at your local Radio Shack store with the companion program disks (26-2021). It's full of ideas about displaying and manipulating data.

DATA ON DISPLAY

DISPLAY/BAS (see listing 1) displays data about my stamps on the screen, 12 stamps to a "page". I can page forward or backward one page at a time, restart at the first page, or exit to my STAMPCAT user menu. The program gets its data from two different Profile files. The first of these is "STAMPCAT/IX1," which is the user index containing the list, sorted by catalogue number, of the records in my file. It is accessed through buffer 1 and has a record length of 10 (my sort field length of 7 plus 3 "housekeeping" bytes). The second is "STAMPCAT/KEY," which contains the physical records in my data base. It is accessed through buffer 2 and has a record length of 127, which is the segment length I specified when I created my file. If your file contains additional segments (userfile/DAT, /DA2 and /DA3), OPEN and FIELD them in buffers 3, 4, and 5. Don't forget to open BASIC for variable length files (2V, 3V, etc.).

When I first sat down to write this program, I made a false assumption that complicated my programming task. I assumed that it would be too difficult to access my user index, so I tried to do everything using only the key segment. This

File = STAMPCAT/KEY LRL = 127 REC = ASCII

```
332 S 11908 .02Wash.-Franklin FP, P.12 db1ZEN78/11/16 6.00*xf, sm cr og,
nh 7.50 32.00HAR 43383/03/27U .02 334 S 11908 .04Wash.-Frankli
n FP, P.12 db1ZEN78/11/16 75.00*xf gem og, nh 27.50 85.00HAR 1383/02
/27 .04 335 S 11908 .05Wash.-Franklin FP, P.12 db1ZEN78/11/16 65.00*
vf-xf vih 40.00 105.00HAR 6283/02/27 .05 336 S 11908 .0
6Wash.-Franklin FP, P.12 db1SAM74/06/05 8.00*xf-vf nh 50.00 120.0
0HAR 140083/02/27 .06 331 1908 .01Wash.-Franklin FP, P.12 db1
/D083/03/27W .00 506
1917 .06Wash.-Franklin FP, P.11 unW
/D083/03/27W .00 541 S 11919 .03Wash.-Franklin P.1
1x10 TyIIZEN78/11/16 115.00*vf-xf nh 37.50 100.00SAN -1383/03/27
.03 538 S 11919 .01Wash.-Franklin RP, P.11x10 ZEN78/11/16 9.00*vf+
nh 20.00SAN 12283/03/27 .01 524 S 11918 5.00Wash
.-Franklin FP, P.11 unW SAM74/04/12 60.00*vf nh 725.00 450.00SAN
65083/03/27 5.00 530 S 11918 .03Wash.-Franklin OF, P.11 unW ZEN78/11/1
6 5.00*xf lh -10083/03/27 .03 383 S
11911 .01Wash.-Franklin FP, Imp sng SAM76/02/03 2.00*vf+ nh
-10083/03/27 .01 384 S 11911 .02Wash.-Franklin FP, Imp
sng SAM73/10/13 1.80*vf+ nh -10083/03/27 .02
442 CS 11914 .02Wash.-Franklin P.10H Ty I SAM74/04/12 3.50*vf
lh -10083/03/27 .02 444 CS 11914 .02Wash.-Fra
nklin P.10V Ty I SAM74/04/12 8.00*vf lh 37.50 50.00SAN 5258
3/03/27 .02
```

Figure 2: How Profile stores data

```
10 'DISPLAY/BAS BY IVAN SYGODA
15 'OPEN BASIC FOR 2V FILES
20 CLS: CLEAR5000:DEFINT A-Z
30 EF$=STRING$(26,"=")+"END OF FILE"+STRING$(27,"=")
40 OPEN"R",1,"STAMPCAT/IX1",10
45 FIELD 1,7 AS KY$,2 AS QQ$,1 AS XX$
50 OPEN"R",2,"STAMPCAT/KEY",127
60 FIELD 2,6 AS CT$,1 AS SF$,2 AS ID$,2 AS NS$,4 AS YR$,5 AS DN$,15 AS SR$,12 AS
VR$,3 AS DL$,8 AS FD$,7 AS FR$,1 AS MU$,10 AS CR$,10 AS CV$,7 AS SV$,7 AS MV$,3
AS SC$,5 AS CH$,8 AS LU$,1 AS MK$,6 AS FV$
70 GOSUB2000
80 PA=128:PG=1:LR=4
100 FORN=1TO12
110 GET1,LR
125 RR=CVI(QQ$)
130 GET2,RR
150 PRINT@PA,CT$+SF$+" "+YR$+" "+SR$+" "+DN$+" "+VR$+" "+ID$;NS$;MU$;FR$;RIGHT$(
"+STR$(LOC(2)),4);
155 PRINT@1018,RIGHT$(" "+STR$(PG),5);
160 PA=PA+64:LR=LR+1:IFLR>LOF(1)PRINT@PA,EF$;:GOTO180
170 NEXTN
180 GOSUB1000
190 END
1000 'INKEY ROUTINE
1010 K$=INKEY$:IFK$=""GOTO1010
1020 IFK$<>"P"GOTO1030
1022 IFFG=1GOTO1010
1024 LR=LR-(PA/64-2)-12
1026 PA=128:PG=PG-1
1028 GOSUB3000:GOTO100
1030 IFK$<>"N"GOTO1040
1032 IFLR>=LOF(1)+1GOTO1010
1036 PA=128:PG=PG+1
1038 GOSUB3000:GOTO100
1040 IFK$<>"F"GOTO1050
1045 IFFG=1GOTO1010
1047 GOSUB3000:GOTO80
1050 IFK$="X"GOTO1070
1060 GOSUB3000:GOTO1010
1070 CLOSE:POKE16916,0:CLS:CMD"I","STAMPCAT"
2000 'SET UP HEADER AND FOOTER
2010 PRINT@0,"Scott # Year Series";@29,"Denom Color/Var. ID/# Price Rec#";@64
,STRING$(64,131):POKE16916,2
2020 PRINT@896,STRING$(64,143);@960,"<F>rev <N>ext <F>irst page or E<X>it to Use
r Menu.";@1014,"Page ";
2030 RETURN
3000 'CLEAR PAGE
3010 PRINT@128,CHR$(31);:GOTO2020
```

Listing 1: DISPLAY/BAS


```

File = STAMPCAT/IX1      LRL = 10      REC =    1
1...5...10...15...20...25...30...35...40...45...50...55...60
..
File = STAMPCAT/IX1      LRL = 10      REC =    1
..
0022222221
0000000009
-----
File = STAMPCAT/IX1      LRL = 10      REC =    2
..
0022222221
7000000009
-----
File = STAMPCAT/IX1      LRL = 10      REC =    3
..
0022222221
0000000009
-----
File = STAMPCAT/IX1      LRL = 10      REC =    4
331      ...
3332222001
3310000509
-----
File = STAMPCAT/IX1      LRL = 10      REC =    5
332      ...
3332222001
3320000109
-----
:
-----
File = STAMPCAT/IX1      LRL = 10      REC =   16
538      ...
3332222001
5380000809
-----
File = STAMPCAT/IX1      LRL = 10      REC =   17
541      ...
3332222001
5410000709
-----
EDF

```

Figure 3: The User Index

meant I had to eliminate unused or deleted records by hand (so to speak). It's much smarter to let Profile do this at assembly language speed. When I discovered this, I changed the program so that the user index does all the sorting and selecting, after which DISPLAY/BAS displays the result. This way, if I want to change sort or selection criteria, I don't have to reprogram.

Figure 3 shows how Profile stores my user index, STAMPCAT/IX1. The listing was obtained by entering "LIST STAMPCAT/IX1 (PRT)" at TRSDOS. Records 1-3 are internal housekeeping records. This explains why, in line 80 of my program, the variable LR (logical record) is initialized at 4. Record number 4 contains the first sorted record of this (and any other) user index.

Let's examine the user index in more detail: The three lines in each record form 10 columns across. The first seven columns refer to my sort length, which is 7. The last three columns are used for housekeeping purposes.

The top line is the ASCII representation of the hexadecimal codes contained in the bottom two lines. In record #4, "331" refers to the lowest catalogue number in my file. (The hex code for "3" is 33H, which corresponds to decimal 51, and "1" is 31H, decimal 49. 20H—decimal 32—corresponds to a space. A list of these ASCII codes can be found in your BASIC Reference Manual.)

This particular catalogue number is only three digits long, so the program fills the remaining four bytes with spaces. If I had defined my field as numeric instead of alphanumeric, the three numerals would have been "right-justified" in the field.

Columns 8, 9, and 10 are the three housekeeping bytes mentioned above. TRSDOS prints periods for non-displayable ASCII codes, those below 20H. The tenth column is not relevant here. It exists for the sake of consistency with memory-based indexes used internally by Profile. (For those who are curious, it usually indicates the offset into the segment of the sort field specified by the user.)

Columns 8 and 9 are the important ones for my display program. Together, they serve as a two-byte hexadecimal representation of the physical record number, indicating the place in which the data about stamp 331 is stored. The LSB (least significant byte) comes first, followed by the MSB (most significant byte). Thus, the first sorted record to be displayed is 0005H, or physical record #5.

GET IT, GOT IT, GOOD

Accessing this indexed record number is easy; it's done in lines 40, 45, and 110 of the program. Line 40 opens the index file in buffer 1. Line 45 fields buffer 1: "KY\$" is the 7-byte sort field, "QQ\$" is the location of the desired record, and "XX\$" is the remaining, unused character. Line 110 GETs the LRth record beginning, as we have seen, with logical record #4. Line 125 converts the alphanumeric string, contained in the buffer as "QQ\$", into an integer (CVI means convert to integer). And line 130 gets the desired (RRth) record from the /KEY segment in buffer 2.

Lines 100-170 contain the FOR NEXT loop that fills the screen with the 12 records that fit on each page. Line 160 increases the variables for each successive record and tests for the end of the index file. An interesting embellishment would be to create a second or alternate screen to display additional data from each record. I had this in mind when I went to the trouble, in line 60, of fielding all the data fields in the segment, instead of only those I actually display.

Lines 1000-1070 contain the INKEY subroutine that processes responses to the prompts displayed at the bottom of the screen (see figure 4). Inappropriate responses are ignored. Line 1024 computes the number of records dis-

Scott #	Year	Series	Denom	Color/Var.	ID/#	Price	Rec#
331	1908	Wash.-Franklin	.01	FP, P.12 dbl			5
332	1908	Wash.-Franklin	.02	FP, P.12 dbl S	1*	6.00	1
334	1908	Wash.-Franklin	.04	FP, P.12 dbl S	1*	75.00	2
335	1908	Wash.-Franklin	.05	FP, P.12 dbl S	1*	65.00	3
336	1908	Wash.-Franklin	.06	FP, P.12 dbl S	1*	8.00	4
383	1911	Wash.-Franklin	.01	FP, Imp sng S	1*	2.00	11
384	1911	Wash.-Franklin	.02	FP, Imp sng S	1*	1.80	12
442	1914	Wash.-Franklin	.02	P.10H Ty I	CS 1*	3.50	13
444	1914	Wash.-Franklin	.02	P.10V Ty I	CS 1*	8.00	14
506	1917	Wash.-Franklin	.06	FP, P.11 unw			6
524	1918	Wash.-Franklin	5.00	FP, P.11 unw S	1*	60.00	9
530	1918	Wash.-Franklin	.03	OF, P.11 unw S	1*	5.00	10

.....
<P>rev <N>ext <F>irst page or E<X>it to User Menu. Page 1

Scott #	Year	Series	Denom	Color/Var.	ID/#	Price	Rec#
538	1919	Wash.-Franklin	.01	RP, P.11x10 S	1*	9.00	8
541	1919	Wash.-Franklin	.03	P.11x10 TyII S	1*	115.00	7

=====END OF FILE=====

.....
<P>rev <N>ext <F>irst page or E<X>it to User Menu. Page 2

Figure 4: The Display Index

played on the current page and then subtracts 12 to get the first record of the previous page. "- 2" is necessary because of the two-line header. Line 1070 is the exit routine. It releases the two-line scroll "protector" established for the header in line 2010, CLOSEs all open files (very important!), and returns me to my Profile user menu, STAMPCAT/CMD.

The subroutine beginning at line 2000 sets up my scroll-protected header and footer. Finally, the subroutine at line 3000 clears the screen before each new page is displayed. The jump to line 2020 reprints the footer.

Some of the variables may not be obvious. For example, "PA" refers to the PRINT@ position for successive display lines. It is initialized at 128, the third screen line. "PG" is the page number. "LR" is the logical record number, from STAMPCAT/IX1. "RR" is the physical record number, from STAMPCAT/KEY.

CHOICES, CHOICES

The pattern is quite simple: OPEN, FIELD, GET, and (when you've finished) PUT, if information has been altered, and CLOSE. Once you GET your data into BASIC, you can do almost anything you want with it. (But whatever you do, develop your program using an extra backup of your Profile disks.) You'll need to use **(BREAK)** while debugging your program, and this might zap any OPEN Profile data files. Files must always be CLOSED when you finish.

There are dozens of programming ideas that can expand the flexibility and convenience of your Profile data bases. For example, you can write a program that allows you to perform global edits on alphanumeric data in the way that Profile's math package permits you to manipulate numeric data. For instance, you could initialize a billing program for a new fiscal year in one fell swoop. Move this year's closing balance into next year's opening balance, zero out the monthly (or quarterly, etc.) payments and dates, and make any necessary adjustments in payment due dates.

You can also write programs that do elaborate computations with dates, such as feeding into a pre-defined field the number of days between two dates. Or you might want to write a program that transfers data from one Profile data base to another. (Be sure to OPEN enough buffers. The limit is 15.)

You can create programs that perform conditional operations, feeding the result back into a pre-defined field or to printer output. For instance, such a program might tell an invoice to print a "second notice" if the "due date" has elapsed.

Or you can write a program that flags and eliminates duplicate entries in a mailing list. And much more, with as many or as few "bells and whistles" as you want.

WRITE HOME

Write us at the address above and describe the ways you've accessed your own Profile data from BASIC. We'll print some of the best ideas in a future column.

PROFILE Editor's Note: This is Mr. Sygoda's eight article in a series of 'how to' Profile III+ articles. Other articles in the series will be published over the next few issues in this column. We hope that you enjoy this feature, and we look forward to your comments and questions on Profile III+.

Pentacle is a New York City-based non-profit service organization specializing in administrative services for performing art groups.

PROFILE'S PRINT LABEL PROGRAM

We've recently discovered a problem in Profile's "print labels" program. In Profile III Plus, this program is "EFCB"; and in Profile Plus, "LABEL/EFC."

The problem is this: You've designed a label format and used the "push-left" indicator (<) with the zip code field. When you print your labels, most of them look fine. But then you notice that one looks like this:

```
..... Acme Pet Supplies
..... 1432 Putnam Lane
63612
```

After a moment's thought, you realize that you've forgotten to fill in the city and state fields for Acme Pet Supplies. When you fill in the information and print the label again, it prints correctly:

```
..... Acme Pet Supplies
..... 1432 Putnam Lane
..... Quarrytown, WI 63612
```

But you've discovered a problem: The push-left indicator keeps pushing left—all the way to the edge of the paper—if the field or fields that come before it on the format line are empty.

Now you're concerned that records may print wrong on the format you just created. You designed it so that the title field (a push-left field) would move to the left-hand margin, if the name field was empty. It's likely that the name field will be empty in quite a few cases. The way the program works, those labels would look like this:

```
Personnel Director
..... Bentley's Department Store
..... 259 Cherry Avenue
..... South Bedford, NH 09876
```

Well, you can stop worrying. The following patches solve the problem quite well. The first set of patches is for Profile III Plus (EFCB), and the second set for Profile Plus (LABEL/EFC).

Patches for Profile III Plus print labels program, EFCB:

```
PATCH EFCB/CMD
(ADD=5470, FIND=202020202020, CHG=E511C8641911)
PATCH EFCB/CMD (ADD=5746, FIND=20, CHG=00)
PATCH EFCB/CMD
(ADD=5477, FIND=202020202020, CHG=00ED4B0E52)
PATCH EFCB/CMD (ADD=547C, FIND=2020, CHG=1832)
PATCH EFCB/CMD
(ADD=54B0, FIND=202020202020, CHG=7EFE2ACA3755)
PATCH EFCB/CMD
(ADD=54B6, FIND=202020202020, CHG=FE3FCA375518)
PATCH EFCB/CMD (ADD=54BC, FIND=20, CHG=33)
PATCH EFCB/CMD
(ADD=54F0, FIND=202020202020, CHG=FE3CCA3755FE)
PATCH EFCB/CMD
(ADD=54F6, FIND=202020202020, CHG=40CA37552313)
PATCH EFCB/CMD (ADD=54FC, FIND=2020, CHG=1832)
PATCH EFCB/CMD
(ADD=5530, FIND=202020202020, CHG=05C2B0541100)
PATCH EFCB/CMD
(ADD=5536, FIND=202020202020, CHG=002A0B5219D1)
PATCH EFCB/CMD (ADD=553C, FIND=2020, CHG=1836)
PATCH EFCB/CMD (ADD=5574, FIND=20202020, CHG=19C38C53)
PATCH EFCB/CMD
(ADD=538C, FIND=202020202020, CHG=D1EBC3F75B)
PATCH EFCB/CMD (ADD=5BF4, FIND=19D1EB, CHG=C37054)
```

Patches for Profile Plus print labels program, LABEL/EFC:*

```
PATCH LABEL/EFC A=6071 F=00000000000000000000
C=E511826319110000ED4B
PATCH LABEL/EFC A=607B F=00000000000000000000
C=70447EFE2ACA9B60FE3F
PATCH LABEL/EFC A=6085 F=00000000000000000000
C=CA9B60FE3CCA9B60FE40
PATCH LABEL/EFC A=608F F=00000000000000000000
C=CA9B60231305C27D6011
PATCH LABEL/EFC A=6099 F=00000000000000000000
C=00002A6D4419D119D1EB
PATCH LABEL/EFC A=60A3 F=000000 C=C3DB40
PATCH LABEL/EFC A=40D8 F=19D1EB C=C37160
```

Get Hung Up in the Dungeons of Kesmai

Editor's Note: The CompuServe Information Service is one of the largest information and entertainment services available to owners of personal computers and computer terminals. With each issue of TRS-80 Microcomputer News, various features of CompuServe will be discussed. The CompuServe Information Service is sold at Radio Shack stores nationwide and in Canada.

The Dungeons of Kesmai is a fantasy role-playing game where the player descends into an ancient underground fortress defended by the forces of Evil. The goal of the game is to slay as many evil creatures as possible and to bring back the treasures found below. The players become adventurers on a remote island, the site of ancient catacombs. Kesmai is not a computerized version of the popular Dungeons and Dragons fantasy game, although the basic concepts of fantasy role-playing are similar.

Kesmai uses a detailed model to represent your character. This model can be subdivided into personal characteristics and combat characteristics. The most important of the personal characteristics are the six primary statistics used to help keep track of your character's strengths and weaknesses. These characteristics are strength, or how much weight a character can carry around; intelligence, which gives the character more magic points; wisdom, which is important for determining the use of spells; dexterity, or how quickly the character can move; constitution, or how much damage a character can sustain without dying, and charisma, which reflects the strength and attractiveness of the character's persona.

The most important combat skills are hits and hits on. Hit points is the number that determines how much a player can sustain, and when the player has died. The number is randomly determined at the outset, and increases with the character's experience.

The number of damage points currently sustained tells the player whether he is in danger of dying at that moment. If the number of Hits On equals the number of Hits available, death ensues.

Every player must choose one of three basic character classes which defines the basic capabilities and weaknesses listed above.

The Fighter class gains experience by physical combat, and rarely, if ever, uses magic. The second class, the Thaumaturgy, calls upon the power of their gods to aid them in ridding the earth of hostile forces. And the third class, Wizards, is a discipline of magic. They use magic almost exclusively. Wizardry is a difficult discipline to learn, but is very powerful once reached.

The game begins in the town located above the dungeon. Here the adventurer can purchase supplies, sell trea-

sure, enhance experience, or learn new magical spells. Once down in the bowels of the earth, adventurers are given directional, fighting, spell and other commands to enlist in the conquering of evil and the capturing of treasure.

Beware of the Dragon!

GET IN THE GAME WITH THE ADVENTURE SERIES AND MEGAWARS

Two of the most popular games are the Adventure series and MegaWars. Adventure uses your computer as your eyes and hands to battle snakes and dwarves in Colossal Cave in search of lost treasure. The object of the game is to gather treasure for points, or accomplish a goal such as preventing the destruction of the nuclear plant in Mission Impossible. Adventure has caused a stir with CompuServe customers. Adventure even has its own T-shirt, puzzle, two different Adventure maps to guide adventurers through the games (one is the advanced version), and a full-color poster depicting a confrontation between explorers and a large green snake in Colossal Cave.

An extension of Adventure and advanced Adventure is the Scott Adams Adventure Series by CompuServe and Adventure International. Within the Series are nine separate adventures varying in difficulty. The higher the number the more difficult the game. The first in the series is Adventureland, the game that started it all. Wander through an enchanted realm to recover 13 lost treasures. The difficulty on Adventureland is moderate. Beware of the wild animals, magical beings, and other perils and mysteries.

Pirate Adventure leads you through an exploration of a strange island in search of clues to the lost treasures of Long John Silver. The difficulty level on Pirate Adventure is easy.

The Count is a moderately difficult adventure which begins when you awake in a brass bed in a castle in Transylvania. You must beware of the evil that awaits you as you discover who you are, where you are, and why the postman left a bottle of blood.

You are at the galaxy's rim in Strange Odyssey. Can you recover the treasures and advanced technologies left behind by a long-dead alien civilization, and still return home? Prepare yourself for this moderately difficult challenge.

The Mystery Fun House awaits your entry. This moderately difficult adventure puts you into a mystery fun house and challenges you to find your way through and out of it.

The Pyramid of Doom will take you into a maddeningly dangerous land of ruins and trackless desert wastes. If you can pull this adventure off, you will take home jewels, gold, and all the other treasures awaiting you in this moderately difficult adventure.

You must explore a once-thriving mining town that is now a Ghost Town. This is rated hard in difficulty, and leads you

through a search for 13 treasures. Just to keep you on your toes it includes rattlesnakes, runaway horses, and a special bonus scoring system, pardner.

MegaWars is another popular games as a real-time space battle game, where up to 10 players can play at one time. The object of the game is to choose whether to captain a star ship or an enemy ship, and thus proceed to attack your opponents' space ships and capture planets.

As an elite space fighter, you are in total command of your own ship and control terminal, free to enter and leave a battle as your individual objectives are executed. The outcome of any clash between two space ships will usually depend upon the skill of their commanders.

The most dangerous enemy of this game is the dreaded Acheron which moves about the galaxy concealed by his cloaking device. If destroyed, the Acheron will only appear elsewhere in the galaxy. Once you have chosen your battlefield, you will be informed of your rank. Promotions will be determined by your merit.

MegaWars space ships are Scouts, Fighters, Miners, and Flagships. Each has a special mission entrusted to its design. The survival of you and your spaceship depends on your prowess. Once you have made your commitment to battle, go out and seek your destiny!

MegaWars, like Adventure, has its own accessories including T-shirts, brochures, and a full-color poster depicting a confrontation between colonists and the Kryon Empire.

Questions and comments about the CompuServe Information Service can be sent to Richard A. Baker, Editorial Director, or Jacqueline A. Farthing, Assistant Editor, CompuServe Information Service, 5000 Arlington Centre Boulevard, P.O. box 20212, Columbus, Ohio 43220, or through Feedback, main menu item 5, CompuServe User Information.

MODEL I/III (From page 26)

I would like to refer to the article on page 47 of the March 1982 *TRS-80 Microcomputer News*, entitled 'SUB DESTROYER.' I have taken it upon myself to modify this game to run on my computer system.

I have included the original CoCo listing as well as my modified Model III listing. The instructions are the same as before, with the exception of aiming, now you must use the left and right arrow keys.

```

Ø CLS
5 REM SUB-DESTROYER
1Ø REM BY R. BRUCE NAGEL 7/81
2Ø REM MODIFIED BY S. C. BERNDT
21 REM TO RUN ON THE 16K MODEL III
22 REM INITIALIZATION
25 CLEAR 477
3Ø K=16Ø
   : QQ=5Ø1
4Ø DIM P(9)
5Ø PRINT STRING$(9, 191)
6Ø PRINT @9, "SUB-DESTROYER";
7Ø PRINT STRING$(42, 191);
75 PRINT STRING$(64, 128);
8Ø PRINT STRING$(96, 191);
9Ø PRINT @16Ø, STRING$(32, 191);
   : PRINT @K, "<*>";

```

```

95 PRINT @192, STRING$(255, 191);STRING$(65, 191);
1ØØ FOR X=Ø TO 9
11Ø P(X)=RND(288)+221
12Ø IF X=Ø THEN 14Ø
13Ø FOR Q=Ø TO X-1
   : IF P(X)=>P(Q)+2 OR P(X)=<P(Q)-2 THEN NEXT Q
   ELSE 11Ø
14Ø PRINT @P(X), "<";
15Ø NEXT X
16Ø FOR X=Ø TO 9
17Ø IF P(X)=Ø THEN 22Ø
18Ø P(X)=P(X)-1
19Ø IF P(X)<192 THEN 24Ø
2ØØ PRINT @ P(X)+1, CHR$(191);
21Ø PRINT @ P(X), "<";
22Ø NEXT X
23Ø IF A$ <> "F" THEN 25Ø ELSE RETURN
24Ø PRINT @ P(X)+1, CHR$(175);
   : XX=XX-5
   : P(X)=5Ø7
   : GOTO 2ØØ
25Ø A$= INKEY$
26Ø QQ=QQ-1
   : PRINT @36, "SCORE-"XX, "TIME-" QQ;
27Ø IF QQ=Ø THEN 53Ø
28Ø IF A$=CHR$(8) THEN PRINT @K, STRING$(3, 191);
   : K=K-2
29Ø IF A$=CHR$(9) THEN PRINT @K, STRING$(3, 191);
   : K=K+2
3ØØ IF A$="F" THEN GOSUB 36Ø
31Ø IF K<128 THEN K=128
32Ø IF K>191 THEN K=191
33Ø PRINT @ 16Ø, STRING$(64, 191);
   : PRINT @ K, "<*>";
34Ø GOSUB 16Ø
35Ø GOTO 25Ø
36Ø II=K
37Ø FOR I=Ø TO 9
38Ø II=II+32
39Ø IF II>511 THEN 49Ø
4ØØ GOSUB 16Ø
41Ø PRINT @ II, "I";
42Ø FOR T=Ø TO 9
43Ø IF P(T)=II THEN 44Ø ELSE 46Ø
44Ø P(T)=Ø
   : XX=XX+1Ø
   : Z=Z+1
   : PRINT @ II, CHR$(191);
45Ø IF Z=1Ø THEN 5ØØ ELSE 49Ø
46Ø NEXT T
47Ø PRINT @ II, CHR$(191);
48Ø NEXT I
49Ø A$=""
   : GOTO 16Ø
5ØØ Z=Ø
51Ø CLS
   : PRINT @ 231, "ALL SUBS DESTROYED!!"
515 PRINT @ 6, "SCORE-" XX "TIME-"QQ;
52Ø GOTO 54Ø
   : REM CO-CO MUSIC ROUTINE WAS HERE
53Ø PRINT @ 72, "TIME HAS EXPIRED#####";
54Ø PRINT @ 96, "RATING-";
55Ø IF XX <1ØØ THEN PRINT "STICK TO RAFTS"
   : END
56Ø IF XX <2ØØ THEN PRINT "SAFE IN A ROWBOAT"
   : END
57Ø IF XX <3ØØ THEN PRINT "DINGHY PILOT"
   : END
58Ø IF XX <4ØØ THEN PRINT "NAVY MATERIAL"
   : END
59Ø IF XX <5ØØ THEN PRINT "P.T. CREWMAN"
   : END
6ØØ IF XX <6ØØ THEN PRINT "DESTROYER CAPTAIN"
   : END
61Ø IF XX <7ØØ THEN PRINT "FLEET COMMANDER"
   : END

```

```

620 IF XX <800 THEN PRINT "ADMIRAL OF THE NAVY"
: END
630 IF XX <900 THEN PRINT "SECRETARY OF THE NAVY"
: END
640 PRINT "COMMANDER-IN-CHIEF"
: END

```

```

500 INPUT "ENTER TO PLAY AGAIN ";M
: GOTO 110
510 '
520 NEXT T
530 PRINT @X," "
540 NEXT
550 GOTO 360
560 PRINT @Y," "
570 Y=Y+3
580 PRINT @Y,B$
590 RETURN
600 PRINT @Y," "
: Y=Y-3
610 PRINT @Y,B$
620 RETURN
630 '
640 V=Y
650 V=V-64
660 IF V<X THEN RETURN
670 IF V<65 THEN RETURN
680 PRINT @V-64+1,C$
690 IF V=X THEN PRINT @X,"***"ELSE 730
700 PRINT @X+1-128,""
710 GOSUB 770
720 FOR P=1 TO 500
: NEXT P
: GOTO 240
730 IF V<31 THEN RETURN
740 GOTO 650
750 '
760 RETURN
770 S=S+120
: PRINT @0,"SCORE =" ;S
780 IF S>A1 THEN GOSUB 800
790 RETURN
800 CLS
810 FOR I=1 TO 57
820 PRINT CHR$(23);"BONUS !! ";
830 NEXT I
840 S=S+500
850 A1 =A1+3500
860 RETURN

```

Invasion

Marty Faivre
39 South Glenview
Lombard, IL 60148

I have written a game for the Model I or III, called "Invasion". It is a fast-paced action game. An alien comes down at you and you have to shoot it before it gets past you. There are eight levels of play, with level one being the hardest. For every alien destroyed, you receive 120 points; with every 3000 points scored, you are awarded 500 bonus points.

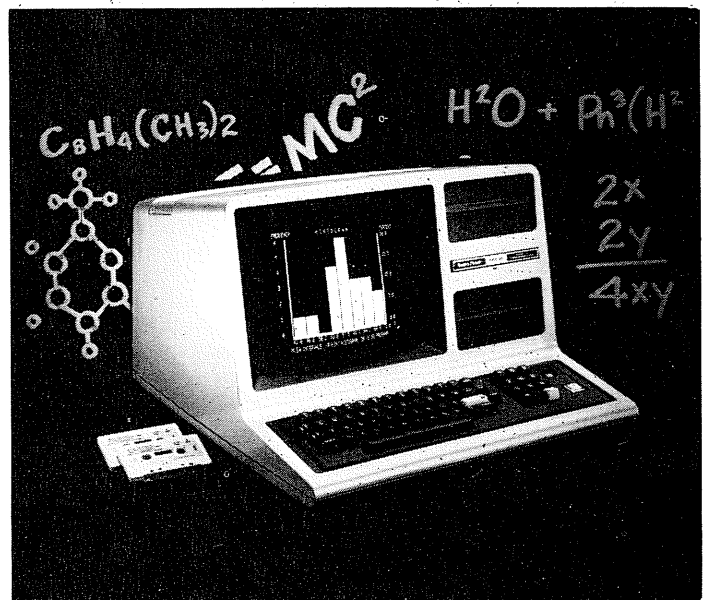
Controls:

"<" Moves your ship to the left.
">" Moves your ship to the right.
(SPACEBAR) Fires at the aliens.
Here is the program:

```

100 REM Invasion - by Marty Faivre
110 CLS
120 S=0
130 A1=3000
140 INPUT "LEVEL (1-8) ";C1
150 IF C1<1 OR C1>8 THEN 140
160 IF C1=1 THEN C=2
170 IF C1=2 THEN C=5
180 IF C1=3 THEN C=15
190 IF C1=4 THEN C=20
200 IF C1=5 THEN C=45
210 IF C1=6 THEN C=60
220 IF C1=7 THEN C=75
230 IF C1=8 THEN C=100
240 R=RND(5)
250 IF R=1 THEN X=11
260 IF R=2 THEN X=29
270 IF R=3 THEN X=41
280 IF R=4 THEN X=20
290 IF R=5 THEN X=35
300 CLS
310 PRINT @0,"SCORE =" ;S
320 C$="!"
330 Y=861
340 A$="<->"
350 B$="<*>"
360 PRINT @Y,B$
370 FOR A=1 TO 12
380 I$=INKEY$
: IF I$="" THEN 420
390 IF I$="." THEN GOSUB 560
400 IF I$="," THEN GOSUB 600
410 IF I$=" " THEN GOSUB 630
420 X=X+64
430 PRINT @X,A$
440 FOR T=1 TO C
450 IF X>Y THEN PRINT @Y,"***" ELSE 510
460 FOR P=1 TO 500
: NEXT P
470 P$=""
480 CLS
: IF S>1200 THEN P$="THIS IS VERY GOOD!"
490 PRINT "YOU DIED WITH";S;"POINTS." ;" ";P$

```



Games, Games, and More Games

Color Computer Games

There are many different types of games for the Color Computer. There are fast action games, adventure games, arcade-type games, educational games, and many more. There are games for just about anyone on the Color Computer.

Color Computer games are sold on three types of media. The three types are:

- 1) Fast-loading and easy-to-use ROM paks.
- 2) Cassette tape.
- 3) Floppy diskette.

Let's discuss the ROM pak games first.

Improve your bridge game with **Bridge Tutor** (26-3158). This is a program for the novice and average bridge player alike. There are 100 instructional hands—each completely analyzed. You can play South, East, or West, or exchange with your partner. The computer can help you if you have problems in bidding, or give you advice. The computer can also review the bidding and playing of the entire game. If you like, you can sit back and watch a bridge game as an observer with the computer bidding and playing all four hands! (Joysticks optional: Minimum system—4K).

Avoid cantankerous mountain goats, arrow-shooting Indians, and rock-dropping eagles as you try to climb to the rim of the canyon in our new game, **Canyon Climber** (26-3089). Canyon Climber has three different sections that you must complete: The Crevasse, Indian Hills, and Eagle Cliffs. The obstacles that you must overcome will increase in each round. (Joysticks optional: Minimum system—16K.)

Bring to life a medieval drama with **Castle Guard** (26-3079). Fight the continuing battle of Lord Schmegley and Sir Dumschtuff by defending your castle from the giant fireball, using Merlin's magical pikes. To win this mystical battle, you must destroy your opponent's castle—then watch it sink into the ground. (Joysticks required: Minimum system—16K).

Play the popular game of **Chess**—against your computer! Chess (26-3050) is an audio/visual program that is designed to provide you with an opponent that plays a challenging game. This game has eight different levels of play and is a tireless player. Your computer will provide you with the means to become a more competitive player. Play a quick game at level one, or play a slow, thoughtful game at level eight. (Joysticks optional: Minimum system—4K).

In **Clowns and Balloons** (26-3087) the object of the game is to pop the rows of balloons by bouncing a clown off of a trampoline. The difficulty lies in the fact that you must also catch the clown when he comes back down. If you don't catch the clown, he will fall to the ground and die! This game has three levels, so as you get better at catching the clown, you can make the game more challenging! Clowns and Balloons also has entertaining music, including a funeral

march if you miss the clown and he dies. (Joysticks required: Minimum system—16K).

Play the popular game that combines strategy with luck (and blood lust) with **Color Backgammon** (26-3059). Color Backgammon has all of the features of a standard backgammon game, including an allowance for vengeance, triumph, total revenge, and a sense of righteous self-satisfaction. Also included is the use of the doubling cube to make the game worth more. The computer makes it easy on you by keeping score. The computer also monitors every turn and will never let you cheat or move out of turn. Dishonest moves are simply ignored by the computer which allows you to make an honest mistake without embarrassment. (Joysticks optional: Minimum system—4K).

Play that maddening cube puzzle on your computer or use your computer to solve your cube with **Color Cubes** (26-3075). Color Cubes displays a three dimensional cube that is made up of 27 cubes and six colors. This allows you to rotate any horizontal or vertical slice of the cube. With this cartridge, the computer will record your last 255 moves and will undo and redo them. You have the option of either entering cube configurations, or of letting the computer randomly mix a cube for you. Color Cubes has an option for playing against time. You can even save the current configuration of the cube, the history of your moves (up to 255), and the elapsed time to an optional cassette recorder! (Minimum system—4K).

A fun introduction to the concepts and procedures of programming can be found in the program **Color Robot Battle** (26-3070). You tell the two robots how and where to move, how to react to situations around them, when to fire lasers and missiles, when to stay and fight, and when to run. The robots can even be programmed to dance! You can program both robots yourself, or challenge another player to see whose programming skills produce the conqueror! (Minimum system—4K: Optional cassette recorder: Optional printer).

The first word in word fun is **Crosswords** (26-3082). One to four people can play this fast-paced word game. There are two different game modes: Combination Mode and Single Play Mode. In the combination mode each player must create one word by combining seven letters selected by the computer with those already on the playing field. Each letter may be used only once per turn. In the single play mode, each player begins with a clear playing field and must make up as many words as possible before his turn runs out. New letters are added automatically as each word is played. The length of each player's turn can be selected at the beginning of the game. There is also an option for no-time-limit on a turn. (Joysticks optional: Minimum system—4K).

You can control a dinosaur's actions with the game **Dino Wars** (26-3057). This is a two player game in which each player controls one dinosaur. Win control of the territory by

making several successful attacks on your enemy. Get close to the enemy dinosaur and "bite" it from behind—but watch out! Your opponent can "bite" you too! (Joysticks required: Minimum system—4K).

Circle objects to gain points in **DoubleBack** (26-3091). This is a game of skill and coordination. To score points, you must circle apples, cherries, magnets, skates, yo-yos, pears, and spiders (which mysteriously appear on your screen) by forming a complete loop with your trail. If you are successful in your efforts, you may encounter an added danger—skulls! The more objects you circle at one time, the more points you will get. You will have to be fast, your trail fades away quickly! (Joysticks required: Minimum system—4K).

Save the Earth from the aliens in **Galactic Attack** (26-3066). You must avoid enemy spaceships that try to dive-bomb you, you must also avoid the bombs that the aliens drop at you. Destroy the squadron of aliens before they reach the ground and the alien will revert to a night attack! Joysticks required: Minimum system—4K).

Anyone for a game of Gin? Beginners or pros alike can enjoy **Gin Champion** (26-3083). If you are a beginner, use Gin Champion to brush up on your basic technique. If you are a seasoned player, use Gin Champion to keep your cut-throat tactics and sneaky maneuvers from rusting. You can play 16 different versions of Gin at 10 different skill levels, ranging from innocent novice to hard-core "pro". (Joysticks optional: Minimum system—16K).

Make math fun with **Math Bingo** (26-3150). This program allows players with varying levels of knowledge to compete on an equal basis by stressing two different skills: accuracy and speed. Solve the problems and be the first to score a Bingo or play Speed Math or Number Hunt. This program tests your skill in addition, subtraction, multiplication and division. Problems feature addition, addition with missing addend, subtraction, multiplication, multiplication with missing multiplier, division, and mixed problems. This game is for one or two players. (Joysticks required: Minimum system—4K).

Insecticide won't help you defeat these bugs! In **Mega-Bug** (26-3076) you are "The Mouth" roaming through the maze eating the white dots. However, you leave a trail of colored dots that the Mega-Bugs can follow to find you and eat you. You can leave false trails and confuse the Mega-Bugs. Each time you remove all of the white dots without being caught, a harder maze will appear, along with an extra Mega-Bug to bug you! (Joysticks optional: Minimum system—16K).

Save the world from harmful bacteria in the form of Microbes and X-Factors with your Disinfector that shoots antibiotics. **Microbes** (26-3085) has 16 different levels to challenge you. You must defeat three different sizes of Microbes. Also, be wary of the X-Factor that appears without notice and without any warning of which direction it will come from. You have the power of becoming invisible on your side, however, every time you use this feature, your Disinfector is moved to a new screen location and you have no control over where your Disinfector will reappear. (Joysticks optional: Minimum system—16K).

Beware of the evil scientist's mechanical monsters as you thread your way through the complex dungeons in search of stacks of gold in **Monster Maze** (26-3081). You have to be very quick and sneaky in this game. The mechani-

cal monsters have only one goal in life—to kill you and keep you from getting the gold! Be careful—the mechanical monsters aren't the only danger that you will encounter in this maze of passageways. The walls are even deadly! Be very alert, the monsters can shoot through the walls! (Joysticks required: Minimum system—16K).

Defend your islands from enemy missiles in **Poltergeist** (26-3065). With your fleet of three submarines, intercept smart bombs and multiple warhead missiles before they wipe out your islands. As the game progresses, your attempts to save your islands will be thwarted because the enemy missiles will continue to rain down their shower of missiles that increase in speed and in number. The better you are, the higher the level number you will reach, and you will receive a higher score multiplier! Be sure to keep track of which submarine you fired from, for each submarine has a limited number of missiles. When you use all of the missiles, there are no more! (Joysticks required: Minimum system—4K).

Are you afraid of ghosts? Defeat the Poltergeist and rescue Carol Anne in this game based on Steven Spielberg's hit movie, **Poltergeist**. **Poltergeist** (26-3073) has three different levels that you must complete in order to rescue Carol Anne. In level one, which is the Westhaven development, you must collect the five items in the village while avoiding being run over by the cars. Be wary, the Poltergeist is here trying to defeat you. In level two, you must climb to the top of the staircase without being caught by one of the moving barriers. The Poltergeist is here, too. The Poltergeist will move from side to side, and up and down the staircase trying to catch you . . . if the Poltergeist succeeds, you will have to go back to Westhaven and collect the five items again. If you conquer the staircase, you then have to defeat the Poltergeists that appear in the energy field in level three. Be careful—Carol Anne is also in the energy field. If you kill her instead of the Poltergeist, you'll have to go back to Westhaven. One thing to make this game even harder, on each level you have a time limit of 30 seconds. (Joysticks required: Minimum system—16K).

For a fun challenge of hand-eye coordination, play **Popcorn** (26-3090). At the top of the screen there are 5 rows of kernels. You control the paddles that are in the middle of the screen. When you clear all five rows of kernels, you get an extra paddle. If you miss a kernel, you not only lose a paddle, but the five rows of popcorn reappear in their entirety. The popcorn will fall faster and faster as you catch it. The game is over when you lose all of your paddles. To make it even more challenging, there are nine skill levels. (Joysticks required: Minimum system—4K).

Travel through space and do battle with the fleet of Zykon, commandant of the Imperial Fleet of Lord Scylla, ruler of six galaxies with **Project Nebula** (26-3063). Use your joystick to control the motions of your ship. This game has four modes of skill, each with 10 levels of difficulty. Practice first, with a target shoot, then progress on to the other levels. Be sure to keep an eye on your gauges—may luck go with you on this mission! (Joysticks required: Minimum system—4K).

Play the classic Roman game of strategic placement. **Roman Checkers** (26-3071) is played on a standard checkerboard consisting of 64 squares. Outsmart your opponent and win the game by occupying most of the squares with your tokens. Tokens are two-sided and have an eagle on one

side and a Roman monument on the other side. Trap your opponent between two of your tokens, and then flip his token so that it is the same as yours. Games in progress may be saved on an optional cassette recorder. Play against the computer, against another person, or watch the computer play itself. (Joysticks optional: Minimum system—16K: Optional cassette recorder).

Are you a good shot? If so, you'll enjoy **Shooting Gallery** (26-3088). Even if you're not a good shot, you'll have lots of fun shooting at the moving targets. Shoot at ducks, bunnies, bull's eyes, and diamonds. Hitting the bull's eyes will reverse the direction that the rows of targets are moving. Hitting a diamond gives you extra bullets. If you completely clear a screen of the moving targets, a bear will come out. Hit the bear as many times as you can. Each time you hit the bear, he will change directions and run faster. When the bear gets away, you start the next round. Each round has fewer bullets than the previous round, but the same number of targets! (Joysticks optional: Minimum system—16K).

Whether you are a novice or a skiing 'aficionado' you'll enjoy **Skiing** (26-3058). Maneuver down the slope, steering between all the pairs of flags (gates), to the finish banner and the cheering crowd. Challenge your friends to see who can make it down the slope in the least amount of time. If you don't like the set course, you can change the layout. If you choose to change the layout, the computer will choose a new course at random. There will always be 29 gates, but their position and distance apart will change. Play with simple joystick control in which all you have to do is maneuver side-to-side and use a front-back motion on the joystick to control speed. If you want more challenge, switch to complex joystick control. Side-to-side steering is the same as the simple control, but your speed is affected by three different factors. You control your ski poles; the hills, slopes, and moguls affect your speed—every time you turn your speed is affected. The best thing about this game, is that you probably don't run the risk of breaking your legs while going down the slope. (Joysticks required: Minimum system—4K).

Eliminate the invaders before they get you in **Space Assault** (26-3060)! Hide behind protective bunkers as you shoot at the invaders. Beware! The invaders can destroy your bunkers too. No matter how hard you try, your efforts will always be thwarted because the enemy continually receives fresh reinforcements. This game has two skill levels, Beginner and Expert. Be brave and have fun! (Joysticks required: Minimum system—4K).

Have some knock-down fun with **Super Bustout** (26-3056). Break through three brick walls, getting points for each brick you knock out. Play with or without gravity! If you do play with gravity the difficulty of the game increases. You can play alone, with a partner, or against up to three competitors. You determine, between 1 and 20, how many balls you get to play with. (Joysticks required: Minimum system—4K).

Tennis anyone? Yes, now you can play tennis on your Color Computer. **Tennis** (26-3080) allows you to challenge a friend or the computer to a realistic tournament consisting of games, sets, and matches. Tennis even keeps score, based on the standard rules of tennis. Tennis has two skill levels, and each player selects his skill level individually. At beginner level, contact between your player, and the ball will automatically cause a return. In the "expert" mode, the ball travels faster, and you must press the button to return the ball.

Should you get exhausted while playing, you can take a break. (Joysticks required: Minimum system—16K).

Make or break your financial standing with **Wildcatting** (26-3067). Drill for oil beneath the Earth's surface. Hit a gusher and strike it rich! Keep an eye on the taxes and drilling fees to make sure that the production keeps up with them. If your fees get too high, sell the well! One to four people can play this game. The player with the most profit wins and is the successful oil tycoon. (Joysticks optional: Minimum system—16K).

*NOTE: ROM paks are also referred to as Program Paks or Cartridges.

Radio Shack currently has four Adventure games on cassette tape and one on disk. What is an Adventure Game? An adventure game is an interactive role-playing game played in a set scenario. Placement of objects and occurrences in an adventure game are often determined randomly. In most adventure games, there are treasures to be collected and things to escape. You suffer any perils that you get yourself into (including injury or death). Most adventure games are played by reading word descriptions and then acting accordingly. However, some adventure games do have pictures.

Pyramid 2000 (26-3310) is an adventure game in which you explore an ancient pyramid for treasures. In this adventure you encounter a large serpent, bottomless pits, a mummy, a maze, and other not-so-ordinary things. Directions can usually be abbreviated; S for South, N for North, W for West, E for East, U for Up, D for Down, and even NW for Northwest. In this game, there is a difference between "climb" and "up," use each in the appropriate place. At times it may be necessary to THROW things. To get full credit for an item, you must return to your original starting place. The treasures that will get points are emerald, vase (you must have the pillow to drop the vase), key, gold, diamonds, jewelry, coins, chest, pearl, silver, and eggs. Good luck and may you survive the exploration of the pyramid! (Minimum system—16K: Cassette recorder required).

In **Raaka-Tu** (26-3311) you venture into the temple of a forgotten civilization. You will encounter viscious guards, serpents, statues, gargoyles, and other things. In Raaka-Tu you are not limited to the use of two-word commands as you are in many adventure games. The object of Raaka-Tu is to collect all of the treasures and return to the point from which the game began. In order for you to find all of the treasures, it may be necessary for you to EXAMINE each room you are in. To keep yourself on track, it may be necessary for you to DROP an item and then GET it again. To get past an obstacle, it may be necessary for you to ATTACK WITH SWORD repeatedly. The treasures in this game are as follows: lever, idol, ring, gem, and the chopsticks. In Raaka-Tu, as with any other adventure game, you will find it very helpful to draw a map. (Minimum system—16K: Cassette recorder required).

Enter the world of the insane with **Bedlam** (26-3312). In Bedlam you are in an insane asylum and you are trying to get out. In the asylum you will meet such "crazies" as Napoleon Bonaparte, Merlin, Houdini, X-ray Johnson, and others. Wander through the asylum gathering keys, pills, and possibly frontal lobotomies. If you do get a frontal lobotomy, there is a secret word to make you better—but I don't want to give it away, so I won't tell you what it is! Bedlam will accept full sentences for commands. Be sure to make a map—you

might even note the colors of the doors on your map. Good luck, I hope that you can make it out of the asylum with your sanity! (Minimum system—16K: Cassette recorder required).

Madness and the Minotaur (26-3313) is probably the most maddening and frustrating adventure game that we carry at this time. In this game, the only thing that is not random is the location and description of the rooms. You must not only collect treasures but also spells, weapons, and magical items. You must also defeat monsters that are in the maze. There are four floors in this game, each floor has 64 rooms mapped on an 8 by 8 grid. Each floor will include a maze, with the fourth floor being almost entirely a maze. There are several objects which are protected by magic spells or which you can not get into your possession unless you have the proper objects in your inventory. The items or spells necessary to gain these items are chosen at random. Sound impossible? Take heart, there is an Oracle wandering around who can provide you with clues to what items are necessary to gain possession of the protected objects. When you encounter the Oracle, the information he gives you may not be applicable at the time you encounter him but may be useful later in the game. Also, the Oracle is semi-crazy, so the information that he gives you may be in the form of a riddle. (Minimum system—16K: Cassette recorder required).

Sands of Egypt (26-3290) is currently our only adventure game on disk. This game is very interesting because it shows your movements. Yes, it is an animated graphical adventure game. You use words to direct yourself through the adventure, and the computer responds with both words and pictures. In this game you take on the role of Sir Percival Brighton Snobworthy, who was abandoned by the members of his archeological party. Sir Percy was left to die in the desert with out even a canteen! The object of this game is to find the treasure in as few moves as possible and not die of thirst or other perils along the way. In this game you will use commands such as KILL, OIL, PULL, MOUNT, BRAID, ROW, and TRANSLATE. This game is really a lot of fun to play, and to look at! As with other adventure games, you will find it helpful to draw a map. May your camel carry you back to civilization safe and sound! (Minimum system—16K Extended Color BASIC: Color Disk System required).

Happy adventuring!

For you card buffs we have a set of card games on cassette tape. **Card Games** (26-3320) has Solitaire, Solo Poker, Last Pirate, Go fish, Blackjack, and War. The manual contains general rules on playing the games as well as information on scoring. When playing these games, the cards are actually drawn on your screen and appear much as they would if you were playing with a solid deck of cards. Should you try to cheat, the computer won't let you—it makes an honest player out of you! Control of the cards through the keyboard is logical and in many cases simplified to limit any excess key pushing. (Minimum system—16K Extended Color BASIC: Cassette recorder required).

Model I/III Games

"Ah I know this sounds crazy, but I was told that you have someone who can give me some help with a game I'm playing."

"Do you really have a department that helps people who are trying to play your adventure games?"

The answer, of course, is that we can help you. Women and children call us for answers, but many of our calls are from businessmen (who are embarrassed to admit that they have spent hours, weeks, and even months trying to solve the games).

The game most frequently asked about is "Raaka-Tu." Usual questions are:

1. How do you get across the rug in the large rectangular room?
2. How do you get past the gargoyle?
3. I have the ring, lever, chopstick, and the idol. I've found the secret passage and I can get outside, but I only get twenty points out of the fifty I am supposed to have. Where are the rest of the points?

It is interesting and can take a great deal of time trying to find a solution to the problem of trying to cross the rug.

To get past the gargoyle you must have the candle and know how to light it. (Be careful that the fumes don't kill you!)


If you are missing points, you probably have not found the gem. When you have the ring, lever, chopstick, idol, and gem you will receive twenty-five points. To get the additional twenty-five points, you must get back to the point in the jungle where you started.

The most amusing comments we receive are usually when we help someone find the answer to getting by the serpent in "PYRAMID 2000." Perhaps it's best if we don't put those in print, but a few hints on solving the game are as follows:

1. Get all treasures. If you have to drop some, remember where they are.
2. When the mummy steals treasures, he puts them where you should run across them later.
3. Drop lamp only in one place (Chamber of High Priest — trying to go West).
4. There is a difference between "climb" and "up," use them in appropriate places.
5. When you get to explore at random, keep trying until it gets you somewhere.
6. Odd instructions are: wave scepter, throw bird, pour water, fill bottle.
7. Don't drop the vase without the pillow.
8. On any return trips you have to make, you'll find obstacles are eliminated if you have already passed them.
9. Take notes.
10. "Inventory" tells you what you're carrying.
11. "Look" tells you where you are.

Learn the secrets in "Haunted House", and you can materialize through walls, walk through fire, and kill ghosts.

"Bedlam" can make you feel like you need a mental hospital, but if you stay out of the electric shock therapy room and away from that crazy nurse, you will regain your senses much sooner. Take care of the window hook, for it is of great importance to you in your attempts to escape.

"ZORK," the very best of all the games! Take notes and draw a map as you go through this game. It is fun and interesting, from the beginning (when you try to find an entrance to the house) to the end (after traveling down a river, going through a maze, exploring a mine, calming Cyclops, and many other experiences). 

The TRS-80 Color Computer in Education—Not Just a Toy

By L. A. Kelly

The Color Computer is great for games, but it isn't just for games. It's also a powerful, serious computer with great potential for education. The Radio Shack Education Division has been collecting information to address the concerns of educators who want a color system, but aren't aware that the TRS-80 Color Computer is far more than a toy. Since this month's topic is "games," it seems appropriate to present just a little of the evidence here.

THE HARDWARE: POWER AND EFFICIENCY

The TRS-80 Color Computer is truly a state-of-the-art machine. An important fact that hasn't been widely publicized to educators is that in power and performance, the TRS-80 Color Computer is at least a generation newer than some of its major competitors. The reason behind this is the microprocessor (the most important part of the computer's calculating machinery). The Color Computer uses a Motorola 6809E, a microprocessor that is widely used in industrial applications and is much newer than the 6502 microprocessor found in, for example, the Apple computer.

Because of the 6809's superiority, in fact, the TRS-80 Color Computer was selected by NRI Schools (a division of McGraw-Hill) for use in its courses in electronics and robotics. The 6809E comes with a better machine language with a larger vocabulary than the 6502, making it possible for the machine language programmer to write more versatile, concise programs that run faster and use less memory. A machine language programmer whose specialty is computer graphics has said, "Almost everything I always wished I could do on the 6502 can be done on the 6809 . . . I would say that the Color Computer represents a significant step forward in technology beyond the Apple."

What the Color Computer's power means to you, the educator, is that comparable programs will almost always run faster and better on the Color Computer than on a 6502 machine. A specific example is the popular educational programming language LOGO. Versions of LOGO for the TRS-80 Color Computer, Apple II or Apple II Plus, and Texas Instruments microcomputers were recently compared by *Instructor Magazine*. The results? *Instructor* rated Radio Shack Color LOGO "fast," Apple LOGO "moderate," and TI LOGO "slow." Dr. Paul Kimmelman, Assistant Superintendent of the Norton City Schools in Norton, Ohio, summarizes: "In my opinion, the TRS-80 Color Computer is the finest, most economical computer available to use for computer instruction."

It seems that the Color Computer hardware isn't just a good educational value for the money—it's a good educational value by any standards.

THE "BASIC" ADVANTAGES

An educator who teaches programming to elementary and junior high school students in Washington state has been able to compare the Color Computer with its competitors. He favors the Color Computer for this application, "owing to the better BASIC in the TRS-80's . . . Such things as easier print formatting, a much better editing system, the ability to directly control a printer, the ability to reliably use tape storage rather than disk if desired, give the TRS-80's an edge." A review in the March 1983 issue of *The Color Computer Magazine* also applauded the Color Computer's Extended Color BASIC as comparable to the BASIC in the far more expensive IBM personal computer. The Color Computer uses a "Microsoft BASIC interpreter with Microsoft's own special sound and graphics routines . . . Try some experiments [with the CoCo] . . . Then see who needs an IBM."

While generating sound on some other computers is difficult and requires machine language programming, the Color Computer's SOUND command (in Standard BASIC) and the PLAY command available in Extended Color BASIC allow even the novice programmer to begin programming tones and music on the Color Computer. The value to education of the easy-to-use, versatile sound and graphics commands of Extended Color BASIC is considerable. First, the commands make it easier to program educational software that takes full advantage of the computer's ability to provide an exciting, motivating learning environment. Second, the commands increase the motivating rewards that are available to the student or teacher who is just beginning to learn about programming.

A summary of the Color Computer's BASIC advantages was given by Suzanne Spahn, the Microcomputer Lab Program Coordinator for the Division of Community Services, Broward Community College, Ft. Lauderdale, Florida. Spahn told the Education Division in a recent letter that she at first thought of the Color Computer as "little more than a nice toy for children to play games on." But, after looking at all the major computers available, they chose the TRS-80 for faculty and student use. Spahn says: "With simple to use BASIC graphic commands (LINE, PAINT, CIRCLE), a 256 x 192 high-resolution graphic screen, 128 colored block graphic characters, and sound generating commands (PLAY, SOUND), the CoCo quickly becomes an easily programmable machine which can outdo several of its competitors."

THE SOFTWARE: A SPECTRUM TO CHOOSE FROM

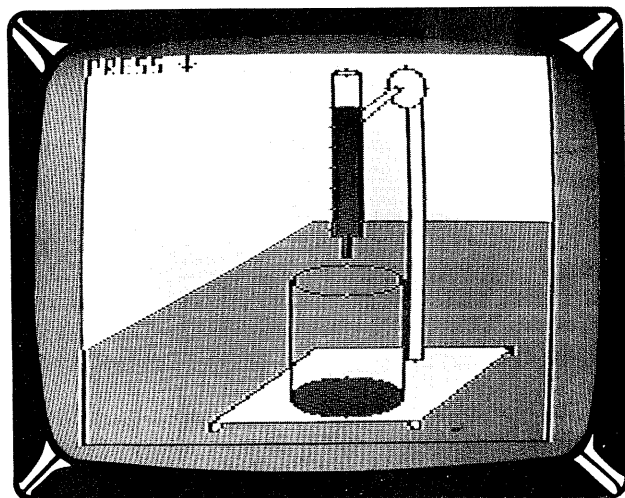
Whether your school district will be doing much of its own programming, or obtaining all of its educational programs from outside sources, a wide range of software for the Color

Computer is available to meet your needs. The Radio Shack Education Division is currently working on the second edition of the Educational Software Sourcebook, a compilation of listings of third-party educational software available for all TRS-80 machines. A preliminary look at the Color Computer listings indicates that the Sourcebook will include more than 175 content summaries of different Color Computer courseware programs in a wide range of subject areas: Reading, Language Arts, Foreign Language, Mathematics, Science, Social Studies, Computer Science, Business Education, and Teacher and Administrator Aids. In some cases, a listing will point to an entire series of courseware programs, so the number of programs available through the sourcebook is actually greater than indicated. Let's take a quick look at some of the kinds of packages that will be featured.

In the field of elementary education, Color LOGO (available from Radio Shack on diskette or ROM Pak) remains an important item. In addition, Children's Computer Workshop (the Sesame Street group) is developing two series of educational games for the Color Computer. Four packages for ages 3-6 use Sesame Street's Grover, Ernie, Big Bird, and the Cookie Monster to teach pre-reading and pre-math skills. Three packages for ages 7 and up teach cooperative problem-solving skills through challenging educational games.

The popular Moptown programs developed by The Learning Company are now available for the Color Computer. Moptown games help students develop logical skills by progressing from simple matching games to games that require higher level problem-solving skills.

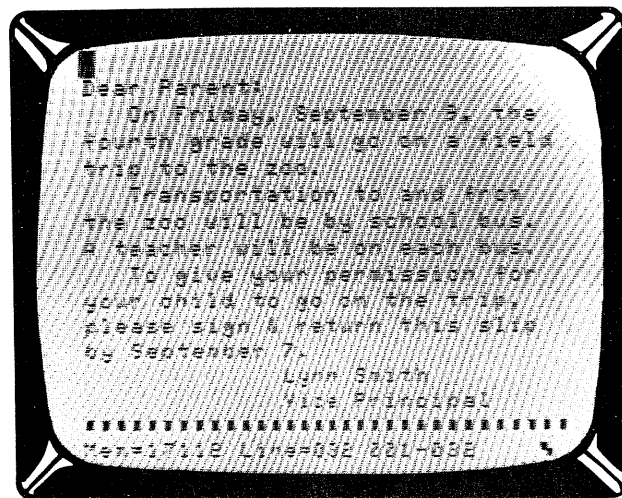
Mathematics packages available for the Color Computer include drill and practice, instructional games, simulations, and tutorials for pre-school through college skill levels. One of these is a "two-part learning adventure" from Walt Disney Productions called "Space Probe: Math." It presents the formula for determining area and perimeter and demonstrates the use of multiplication and division.



In the field of science, Radio Shack's TRS-80 Chemistry Lab, Volume One (Color Computer version Cat. No. 26-2626) is a versatile laboratory simulation program for the kinetic theory, Charles' law, Boyle's law, titration, conductivity, and solubility.

Teacher and administrator aids available for the Color Computer range from multi-purpose word processing pro-

grams to third party programs that address very specific needs. Representative titles are: School Absentee and Data Package, Questions (a quiz-development program), and Electronic Master (a program that generates mathematics worksheets). Radio Shack's TRS-80 Color PILOT, available on diskette (Cat. No. 26-2709) or cassette tape (Cat. No. 26-2710), is an easy-to-use courseware authoring language for creating programs in any subject area.



For language arts and reading instruction, the Color Computer user has a large selection of courseware to choose from, in a wide range of skill levels. A series of audio/visual tutorials in phonics, drill and practice programs in vocabulary and spelling, and instructional word games, are among the kinds of programs available.

Inclusion of listings in the Educational Software Sourcebook does NOT indicate that Radio Shack endorses the software. However, the Sourcebook does serve as a valuable forum for educational publishers and a valuable resource for schools.

NETWORK 2

The Radio Shack Network 2 system is a convenient and time-saving alternative to using stand-alone Color Computers in the classroom. Using the Network 2 Controller, a Color Computer system as host, and Color Computers as student stations, teachers can connect as many as 16 student stations to the host system. This allows the teacher to load all 16 computers with the same program simultaneously or to load computers with different programs, in groups. An education article in the May issue of *TRS-80 Microcomputer News* described how to use Radio Shack's Color LOGO program on the Network 2. Although not all Color Computer software will work with the Network 2, much will.

HOW YOU CAN USE THE COLOR COMPUTER

For more information on the TRS-80 Color Computer, contact your local Radio Shack store or Computer Center, or contact the Radio Shack Regional Educational Coordinator in your area. Radio Shack has 24 Regional Educational Coordinators located around the country to help local schools and districts determine and meet their educational computing needs.

Communications Corner

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Welcome back to our corner. We've noticed that much of the mail we received from you has had to do with Bulletin Boards. If you would like us to include something about Bulletin Boards every month, please let us know, and we'll be happy to oblige!

Since the theme of this month's issue is GAMES, we thought we would touch upon Communications type games with you, as well as the subjects of Direct Cursor Addressing and methods of Printer Dumping. We have had many questions about this on our own bulletin board and are glad to answer these questions at last. First to the games.

There are several types of games that are played over modems, and we hope there will soon be more available. One type is called COMBAT and is a war game (not surprisingly) played by two people across a modem line with the scenario being World War II. The game is initialized by one of the computers, then each has the opportunity to organize their defense and plan an attack strategy. Once this is completed, World War II breaks out on your screen, with you and your "foe" personally involved.

Other types of modem games are to be found on CompuServe and The Source. An example is MEGAWARS—an advanced type of STAR TREK in which each player logging onto the game belongs to either the empire (the Bad Guys) or the Federation (Good Guys who, no doubt, ride in the white spaceships), and each player battles in outer space. In this game, you are pitted against other people accessing CompuServe who are playing at the same time, and you must "destroy" them or be "killed" yourself.

Page GAM-1 on CompuServe offers the caller a large selection of online games to play; here is a list of the titles available at this writing (more are added as time goes by):

- | | | |
|--------------------|---------------|-------------|
| Adventure | New Adventure | Blackjack |
| Civil War | Eliza | Fantasy |
| Fastermind | Bridge | Decwars |
| Megawars | Golf | Gomoku |
| Hangman | Lunar Lander | Space War |
| Startrek | Football | Scott Adams |
| Biorhythms | Banshi | Backgammon |
| Concentration | Craps | Chess |
| Cube Solver | Furs | Hammurabi |
| Maze Maker | Mugwump | Othello |
| Rt Trek | Roulette | Scramble |
| Wumpus | Astrology | Kesmai |
| Real Time Startrek | | |

If you cannot find something in the above list to tickle your fancy, you are indeed a Games Gourmand! But for the jaded palate there is also the CompuServe CB simulation, which is less of a game and more of a crowded cocktail party,

with many conversations going on simultaneously, all of which you are welcome to "dive" into. This gives you an opportunity to chat "live" with other callers about anything under the sun. Those people using the CB section tend to use extravagant and often exotic "handles," and one can become quite impressed by the expressiveness CB'ers can accomplish with the written word < < **ASTONISHED GASP** > >. For privacy, you can move over to any of 40 different numerically designated "stations" or "channels," some of which are reserved by various groups at different times.

The Source is a service similar to CompuServe and has equivalent games and services to offer.

Another place to find games, for the aficionado who doesn't wish to spend the hourly cost of the above mentioned services (or the cost of purchasing games outright), is to visit the various Bulletin Boards of the nation, many of which offer adventure (and other type) games as part of their services. Our board (DRUCOM-215 855 3809) currently offers a total of five online games to play as well as over 80 download-able games and such this month. (The items on the download sections of most bulletin boards change from time to time.)

ONLINE GRAPHICS

We are certain you have noticed that one does not generally find graphics type games online. The reason for this is that software has not caught up with technology! Specifically, one needs an 8 bit word to generate graphics characters.

Printable ASCII characters range from 20 Hex (or 32 Decimal) to 5F Hex (or 95 Decimal). Graphics, on the other hand usually start with 80 Hex (or 128 Decimal) and run to BF Hex (or 191 Decimal). You'll notice that the above range excludes the high order bit. Most software takes this into account and strips the high order bit from the data word being accepted. Since graphics characters are hardware-dependant (they change from machine to machine), the writers of the software feel they are doing the user a favor by removing the high order bit.

In reality, if the software engineers would offer translation tables in all communications software, it would not make a difference, since the end user would be able to assign what he wants printed as he receives each code. To our knowledge there are two boards at this writing dedicated to Radio Shack computers who do send graphics, and if you are in the 8 bit mode with special software you can receive graphics.

Generally speaking, the alternative to sending graphics to enhance the look of a screen is Direct Cursor Addressing in which you may place any printable character anyplace on your screen. This is done using the table below. For example:

Using the statement PRINT CHR\$(27);CHR\$(48) will home the cursor and clear the screen.

Your manual will contain these Direct Cursor Addressing codes which your machine will receive and process. Radio Shack uses the VT52 or Vidtex Convention. (VT100 frequently works as well). The convention follows:

Vidtex Code	Hex Codes	Description
ESC I	1B 6C	64 Characters Per Line Mode
ESC m	1B 6D	32 Characters Per Line Mode
ESC J	1B 4A	Clear to End of Screen
ESC K	1B 4B	Clear to End of Line
ESC j	1B 6A	Clear Screen, Home Cursor
ESC A	1B 41	Cursor up one line
ESC B	1B 42	Cursor down one line
ESC C	1B 43	Cursor right one space
ESC D	1B 44	Cursor left one space
ESC H	1B 48	Home Cursor
ESC Y xx yy	1B 59	Direct Cursor Positioning
	xx yy	Move Cursor to Row xx, Column yy

NOTE: xx and yy are offset by 20 Hex, therefore Row 1 would be called for xx 21.

If you dial DRUCOM (or any COMMNET systems) or Lance Micklus's MOUSENET you will see examples of this, provided you sign onto these boards with Vidtex-compatible software.

Lance was the first sysop in the country to use this technique. The Commnet boards (Drucom included) were the first network as a whole to use this method, which was developed for use on Commnet by Steve King. To our knowledge, the above mentioned are the only systems using Direct Cursor Addressing. If we're wrong about this, please write, and we'll be more than happy to correct the error.

We hope you will take the time to look over some of these "Animated Screens" before you rush into the various bulletin boards to play some of their online games. Now, let us say that you've been playing one of these games and would like to dump the adventure that's been driving you crazy to your printer so you can pore over it at a later date and solve that darn thing! Here's what you need to know to accomplish this little task.

USING A PRINTER ON-LINE

Basically there are two different methods of printer dumping. The first is to toggle your printer ON while you're in a conversational mode. We do not normally like to recommend this method, as we feel it does not work very well unless you have special software (like LDOS LCOMM or TRSDOS 6.0 COMM which use a software spool system). The reason for this is that your terminal package and communications are going to wait for your printer to finish printing what you've assigned it to print. If you've filled your printer's buffer you might lose incoming characters while the printer has control of the interrupts, thereby eliminating these characters from the print statement. Or, if your system is so designed, you might get incorrect characters instead of losing characters. If you are using modem communications for business purposes it is obvious that each character will be important, so you really cannot take the risk of losing or misinterpreting any characters.

We have had many conversations on our board with people who were running their printers simultaneously with their communications packages, and the number of complaints we've received has led us to believe that the practice is simply more trouble than it's worth.

The second method of printer dumping affords you a flawless copy of what you're trying to save, and is the method we recommend. What you do is to create a "SPOOL FILE" by opening your communications buffer and letting the data that you want printed come into it. When you've finished capturing the data you are interested in, you close the buffer and create a FILE from that data. Most Radio Shack software has the ability to do this. Then, whenever you choose, you may make a hardcopy of this material by simply instructing your computer from "DOS READY" to "PRINT Filename." This will dump the file to the printer. One caution is to be inserted here—you must make sure that your video filter is ON (if you have one) to prevent control codes from getting into that file. We will discuss Control Codes in a future article.

We hope this information will prove helpful to you in your future communications.

The Corner Mailbox

Dear Al:

We have a TRS-80 Model 2 . . . I am curious to know if it . . . could be used to operate a BBS. Would you have an approximate cost estimate on adapting this computer to operate a BBS? Also, I would like an estimate on the cost of software for a BBS.

Robert A. Cutting
Willoughby, Oh

Dear Robert:

Yes, this machine will suffice. The easiest way for you would be to write your own bulletin board software in BASIC and run your Model 2 in Host Mode. You'll have to add some checking to prevent people from breaking into your board. Unfortunately there are quite a number of young people frequenting bulletin boards who heartily enjoy trying to destroy your hard work. You must be careful about system security for this reason, and include portions of your software for the sole purpose of preventing your callers from breaking out of your program and being able to erase your disks. This security system should be done in your BASIC program in such a way that any input is checked for non-printable ASCII (see the article above).

The cost of setting up such a bulletin board depends upon the features that you wish to include. The minimum cost in addition to the basic computer you own would be a good quality, reliable modem in the speed which you select. More and more boards are offering 300-1200 baud service, which does require a 1200 baud modem such as the R/S DC-1200, (P/N 76-1005) which offers Auto Answer, another requirement. For basic 300 baud operations you might choose the Radio Shack Modem II (P/N 26-1173) which offers 300 baud auto answer, among its other features.

Another item of hardware you will need to dedicate to your board is a printer of your choice (it should not be too light-duty, because if your board is successful, all of your equipment will be working pretty hard! A hobbyist-grade printer will fail after a few months). Another accessory you might want is a Real Time Clock. While your computer has a clock built-in, it's primarily designed for use by the computer

in its own "housekeeping". In order to get PERFECT time an external real-time clock should be referenced.

If you need any further information, please feel free to contact us again. Thanks for writing!

Dear Mr. Simon:

In your . . . column . . . you mentioned the need of communication software. My question to you is, what do you mean? I was told that a modem is all that I need to communicate with the outside world.

Isaak Younger
Brooklyn, NY

Dear Isaak:

If all you have is a modem, it's sort of like having a car without a driver. While the car is capable of going all sorts of places, nobody is telling it where to go, how fast to go, or what roads to take. Communications software allows you direct input and output to the RS232 board. Your modem connects to that board to receive its instructions as well as the characters you wish to send to the other computer. If in fact you don't have communications software, all you will be able to do is establish contact with the terminal you connect to—you will not be able to pass any data to it or receive any data from it.

Communications software is readily available at your nearest Radio Shack Computer Center or Computer Department. If you live outside a reasonable range of one of these, a regular Radio Shack store can order it for you.

In some cases, special software is required, for example, WESTLAW (a legal service) requires special parameters which are not readily available and can be bought in a special package from your Radio Shack Computer Center. In other cases, you must purchase special software from the service you subscribe to.

Hope this answers your questions, thanks for writing!

Dear Mr. Simon,

Could you help me in answering the following questions or tell me where I could get more information?

1. The addresses and approximate costs for some long distance calling aid sources such as MCI, Sprint, or City call.
2. Why it's necessary to inform the phone company that you're using a modem on the telephone line. Does this increase your monthly bill?
3. Specifically what kind of hardware do you have for your Bulletin Board System?
4. Specifically what kind of software do you use for your BBS? I.E. purchased, self-written, language, sophistication, multi-users at once or one at a time, and approximate cost.
5. Information needed to connect to your system. Phone number, modem settings.

Chris Sorensen
Cedar Falls, Ia

Dear Chris:

We cannot help you find your local offices for MCI, SPRINT, CITICALL (ITT) or any of the other calling aid sources, but we're sure that the Directory Assistance telephone operator for your city or a nearby larger city can.

The reason you must inform the phone company about your modem is that it is a requirement of the Federal Communications Commission. Ma Bell also needs this information

(ringer equivalency, which is nothing more than the encoded resistance of your equipment) so that if something goes wrong with your line they know what levels to expect when they test for the source of the trouble. No, this does not increase your phone bill.

On our Bulletin Board, DRUCOM, we use a TRS-80 Model I with full memory and expansion interface, line printer IV, three disk drives, and an external clock. Our phone lines are ordinary telephone lines. We would rather not go into specific brands or costs as to our non-Radio Shack equipment, but be assured that Bulletin Boards can be run with any good quality equipment. Please note though, that if you are going to use a phone line to run a BBS, you should avoid the CALL WAITING option offered by the phone company, since this service switches back and forth effectively between two lines and will cause carrier drop when the call waiting is activated.

The costs of hardware varies from item to item of course, but if you are considering purchasing equipment for the express purpose of running a Bulletin Board, we strongly suggest you give it second thoughts. Many people believe that running a board will be extremely lucrative, but consider: there are many, many boards already existing that provide services and equipment sales. Most people who run boards realize little profit from it, unless they are selling a product or service that cannot be readily obtained elsewhere. Be Forewarned!

The software for DRUCOM was written by a small group of professionals (AI included) from all across the country, and most of them are known in their own right for other excellent programs. The board consists of quite a number of programs, some written in BASIC and others in machine language. The cost of such a software package, since it is not for sale and took many months to program and coordinate, is not truly ascertainable. Sorry about that! The information needed to connect to it however, follows below:

(We suggest you keep this information handy to your communications software for your future reference)

DRUCOM Dataline (215) 855 3809
Parameters: 300 Baud
8 Bit Word
1 Stop Bit
Disabled Parity

Thank you for asking, Chris!

That'll about do it for this month. In our next article we will discuss types of modems and what they're best for.

We appreciate your letters and questions. If there are specific topics you would like us to deal with PLEASE feel free to write to us and let us know. You may either leave us EMAIL on CompuServe (the Microcomputer News account number is 70007,535) or write to us in care of:

Microcomputer News
Communications Corner
P.O. Box 2910
Fort Worth, Tx 76113-2910

We look forward to receiving Communications From You!

Happy Communicating!

Bombdrop

Mike Loehr
1455 West 35th Avenue
Wheat Ridge, CO 80033

In the following Model I game, Bombdrop, you are the pilot of a helicopter. Your mission is to destroy enemy cities. You do so by repeatedly flying over them and dropping bombs. When you fly over a city, you essentially fly in a big circle. When you reach the 'end' of the city, you will automatically be put back at the 'beginning' of the city. This allows you to destroy the city in three or four passes.

To drop bombs, simply press the space bar. In the screen window, a small bomb will drop and destroy anything below it. For every 'section' of the city you hit, you receive 100 points.

At the bottom of the screen, a fuel indicator is located. This gradually decreases and when the fuel level reaches one or below, the game will end. You can, however, gain more fuel. One way is to destroy cities. For every city you destroy, you receive 100 more fuel units. A second way is for every 10,000 points you acquire, 200 fuel units are added. This can greatly lengthen a game, almost so that it goes on 'forever'!

To destroy a city, you must eliminate $\frac{3}{4}$ of the lower portion of the land. This is the 'ground' which the buildings sit on. The objects on the upper portion of the land, are representations of buildings, factories, and houses, etc.

```

1 REM * * * * * BOMB DROP * * * * *
2 REM * BY MIKE LOEHR, 12/29/82 *
3 REM * VERSION: 2.4, W/INSTRUC. *
4 REM * FILENAME: BOMBDROP/BAS *
5 GOSUB 430
   : CLEAR 2000
   : GOSUB 395
10 HL$=STRING$(3, 140)+CHR$(156)+STRING$(3,
   140)+CHR$(26)+STRING$(9, 08)
15 HL$=HL$+STRING$(5, 131)+STRING$(2,
   191)+CHR$(183)+CHR$(149)
20 B1$=STRING$(3, 183)+CHR$(149)
25 B2$=CHR$(158)+CHR$(156)+CHR$(158)+CHR$(148)
30 B3$=CHR$(151)+CHR$(129)
35 B4$=CHR$(158)+CHR$(148)
40 B5$=CHR$(156)+CHR$(148)
45 FP=23
   : SP=1
   : AP=534
   : FL=750
   : SC=0
   : BL$=STRING$(5, 128)
50 CT$(1)=STRING$(128, 191)
   : EX$=STRING$(5, 166)
55 L=0
60 *** TO CHANGE HIGH SCORE, TYPE IN "60 HS=YOUR
   SCORE" **
65 A=RND(6)
   : ON A GOTO 70 ,75 ,80 ,85 ,90 ,95
70 CT$(0)=CT$(0)+B1$
   : L=L+4
   : GOTO 100
75 CT$(0)=CT$(0)+CHR$(128)
   : L=L+1
   : GOTO 100
80 CT$(0)=CT$(0)+B4$
   : L=L+2
   : GOTO 100
85 CT$(0)=CT$(0)+B3$
   : L=L+2
   : GOTO 100
90 CT$(0)=CT$(0)+B5$
   : L=L+2
   : GOTO 100
95 CT$(0)=CT$(0)+B2$
   : L=L+4
100 IF L<128 THEN 65
105 CT$(0)=LEFT$(CT$(0), 128)
   : GOSUB 415
110 GOSUB 345
115 T1$=STRING$(80, 128)
120 PRINT @AP, HL$;
125 GOSUB 220
130 FL=FL-(1+RND(0))
   : IF FL<1 THEN 165
135 IF SC/10000=INT(SC/10000) AND SC/10000>=1 THEN
   FL=FL+200
   : SC=SC+100
140 GOSUB 240
   : SP=SP+1
   : IF SP=106 THEN SP=1
145 T2$=MID$(CT$(1), 15, 80)
150 IF SC>HS THEN HS=SC
155 GOSUB 370
   : GOSUB 300
160 GOTO 125
165 PRINT @AP, HL$;
170 PRINT @AP-3, "G A M E O V E R";
   : FOR DE=1 TO 500
   : NEXT DE
175 PRINT @AP-3, "*****";
   : FOR DE=1 TO 40
   : NEXT DE
180 PRINT @AP-3, "PRESS <X> TO QUIT";
   : PRINT @(AP+61), "ANY OTHER TO PLAY";
185 IF SC>HS THEN HS=SC
190 A$=INKEY$
   : IF A$="" THEN 190
195 IF A$<>"X" THEN CT$(0)=""
   : CT$(1)=""
   : PRINT @144, "PREPARING GAME . . . ";
   : GOTO 45
200 PRINT @AP-4, "THANKS FOR PLAYING !";
   : PRINT @(AP+61), " ";
   : PRINT @896, " ";
   : END
205 REM ** PRINT LANDSCAPE
210 SP=SP+1
   : FL=FL-(1+RND(0))
   : GOSUB 380
   : IF SP=106 THEN SP=1
215 IF FL<1 THEN 165
220 PRINT @720, MID$(CT$(0), SP, FP);
225 PRINT @784, MID$(CT$(1), SP, FP);
230 RETURN
235 REM ** CHECK FOR BOMB DROP
240 A$=INKEY$
   : IF A$<>" " THEN RETURN
245 BP=(AP+64)+1
250 PRINT @BP, " ";
   : BP=BP+IC
255 FOR DE=1 TO 33
   : NEXT DE
   : GOSUB 210
260 IF PEEK(15360+BP)>128 THEN 270
265 PRINT @BP, CHR$(143);
   : FOR DE=1 TO 30
   : NEXT DE
   : GOSUB 210
   : GOTO 250
270 IF BP>767 THEN J=1 ELSE J=0
275 IF BP>831 THEN RETURN
280 MID$(CT$(J), (SP+6), 5)=BL$
285 PRINT @720+(J*64)+6, EX$;
290 SC=SC+100

```



```

: RETURN
295 REM ** CHECK IF MOST OF BOTTOM LAND GONE
300 IF T1$<>T2$ THEN RETURN
305 FOR ZZ=0 TO 9
: PRINT @144, "B O M B D R O P";
310 PRINT @769, " BOMB DROP";
: PRINT @813, "BOMB DROP ";
315 PRINT @769+ZZ, CHR$(143);
: PRINT @822-ZZ, CHR$(143);
320 NEXT ZZ
: PRINT @144, " BONUS 1000 BEING ADDED ";
: GOSUB 210
325 QA=QA+1
: IF QA<>7 THEN 305
330 QA=0
: PRINT @144, " PREPARING NEW MISSION ";
335 SC=SC+1000
: FL=FL+100
: CT$(0)="
: CT$(1)="
: SP=1
: FP=23
: GOTO 50
340 REM ** SET-UP SCREEN
345 CLS
: PRINT @144, "B O M B D R O P";
350 PRINT @208, STRING$(24, 131);
: FOR I=30 TO 79
: SET(I, 23)
: SET(I, 39)
: NEXT I
355 PRINT @277, "BY MIKE LOEHR";
: FOR I=23 TO 39
: SET(30, I)
: SET(79, I)
: NEXT I
360 PRINT @342, "VERSION 2.4";
365 PRINT @770, "BOMB DROP";
: PRINT @813, "BOMB DROP";
370 PRINT @512, "HIGH SCORE";
: PRINT @578, USING"<#####>";HS;
375 PRINT @556, USING"SCORE: #####";SC;
380 PRINT @907, "FUEL: ";STRING$(23, 143);
: PRINT @913+(FL*.03), "<";
: PRINT @940, USING"UNITS=#####.##";FL;
385 RETURN
390 REM ** CLEAR SCREEN AND PRINT MESSAGE **
395 CLS
400 PRINT @144, "B O M B D R O P";
405 IC=64
410 RETURN
415 PRINT @143, "PRESS ANY KEY TO PLAY . . .";
: FOR DE=1 TO 80
: NEXT DE
420 A$=INKEY$
: IF A$<>"" THEN CLS
: RETURN
425 PRINT @143, " ";
: FOR DE=1 TO 80
: NEXT DE
: GOTO 415
430 CLS
: PRINT "BOMB DROP"
: PRINT
: PRINT "DO YOU NEED INSTRUCTIONS ";
: INPUT A$
435 IF A$="N" OR A$="NO" OR A$="" THEN CLS
: RETURN
440 CLS
: PRINT "BOMB DROP BY MIKE LOEHR
INSTRUCTIONS"
: PRINT
445 PRINT " YOU ARE THE PILOT OF A HELICOPTER.
YOUR MISSION: TO DESTROY"
450 PRINT "ENEMY CITIES. YOU DO SO BY REPEATEDLY
FLYING OVER THEM AND"

```

```

455 PRINT "DROPPING BOMBS. WHEN YOU FLY OVER A CITY,
YOU ESSENTIALLY FLY"
460 PRINT "IN A BIG CIRCLE. WHEN YOU REACH THE 'END'
OF THE CITY, YOU"
465 PRINT "WILL AUTOMATICALLY BE PUT BACK AT THE
'BEGINNING' OF THE CITY."
470 PRINT "THIS ALLOWS YOU TO DESTROY THE CITY IN
THREE OR FOUR PASSES."
: PRINT
475 PRINT " TO DROP BOMBS, SIMPLY PRESS THE SPACE
BAR. IN THE SCREEN"
480 PRINT "WINDOW, A SMALL BOMB WILL DROP AND DESTROY
ANYTHING BELOW IT."
485 PRINT "FOR EVERY 'SECTION' OF THE CITY YOU HIT,
YOU RECEIVE 100"
490 PRINT "POINTS."
: PRINT
495 PRINT "HIT ANY KEY FOR MORE INSTRUCTIONS :
";CHR$(95);
500 A$=INKEY$
: IF A$="" THEN 500
505 CLS
: PRINT "BOMB DROP BY MIKE LOEHR
INSTRUCTIONS (2)"
: PRINT
510 PRINT " AT THE BOTTOM OF THE SCREEN, A FUEL
INDICATOR IS LOCATED."
515 PRINT "THIS GRADUALLY DECREASES AND WHEN THE FUEL
LEVEL REACHES ONE OR"
520 PRINT "BELOW, THE GAME WILL END. YOU CAN,
HOWEVER, GAIN MORE FUEL."
525 PRINT "ONE WAY IS TO DESTROY CITIES. FOR EVERY
CITY YOU DESTROY, YOU"
530 PRINT "RECEIVE 100 MORE FUEL UNITS. A SECOND WAY
IS FOR EVERY 10000"
535 PRINT "POINTS YOU ACQUIRE, 200 FUEL UNITS ARE
ADDED. THIS CAN GREATLY"
540 PRINT "LENGTHEN A GAME, ALMOST SO THAT IT GOES ON
'FOREVER' !"
: PRINT
545 PRINT " TO DESTROY A CITY, YOU MUST ELIMINATE
3/4 OF THE LOWER"
550 PRINT "PORTION OF THE LAND. THIS IS THE 'GROUND'
WHICH THE BUILDINGS"
555 PRINT "SIT ON. THE OBJECTS ON THE UPPER PORTION
OF THE LAND, ARE"
560 PRINT "REPRESENTATIONS OF BUILDINGS, FACTORIES,
AND HOUSES, ETC."
: PRINT
565 PRINT "PRESS ANY KEY TO BEGIN GAME
: ";CHR$(95);
570 A$=INKEY$
: IF A$="" THEN 570
575 CLS
: RETURN

```

Hurling Asteroids

D. Wade Poust
150 21st Avenue
Vero Beach, Fl 32960

Here is a game program for the Model I that I think your readers will enjoy. The program is called "Hurling Asteroids". It will give hours of enjoyment trying to maneuver through the hurling asteroids.

If the player has the highest score, the game asks for the player's name.

```

0 DEFINT A-Z
: DIMU(9)
: N$="WADE POUST"

```

```

: N=150
: BG=1
10 CLS
: GOSUB 200
: CLS
20 A$=CHR$(153)+CHR$(174)
: A1$=CHR$(157)+CHR$(166)
: B$=CHR$(139)+CHR$(191)+CHR$(135)
: C$=CHR$(166)+CHR$(153)
30 A=970
: B=1010
: C=350
: D=39
: E=166
: F=153
: M=15360
40 FOR I=1 TO 15
: PRINT @A, A$;
: PRINT @B, A1$
: NEXT I
50 FOR I=1 TO 100
: NEXT I
55 IF PEEK(M+C)=E OR PEEK(M+C)=F OR PEEK(M+C+1)=E OR
PEEK(M+C+1)=F THEN 300
57 IF PEEK(M+C+2)=E OR PEEK(M+C+2)=F THEN 300
60 PRINT @C, B$;
65 IF SC/400=INT(SC/400) AND SC<>0 THEN FOR X=1 TO 50
: OUT 255, 1
: OUT 255, 0
: NEXT X
70 H=RND(D)+A
: PRINT @H, C$;
80 V=0
: L=PEEK(14368)
: IF L=16 THEN V=-2 ELSE IF L=64 THEN V=2
90 IF C+V<331 THEN V=0 ELSE IF C+V>367 THEN V=0
100 PRINT @C, " ";
: C=C+V
: PRINT @A, A$;
: PRINT @B, A1$
: SC=SC+1
: GOTO 55
110 CLS
: PRINT "YOU ARE THE CAPTAIN OF THE U.S.S.
ASTRO-BLASTER."
120 PRINT "YOUR JOB IS TO MANEUVER THE ASTRO-BLASTER
THROUGH A"
130 PRINT "HURLING ASTEROID FIELD. TO MOVE THE SHIP
USE THE"
140 PRINT "GREATER AND LESS THAN KEYS ON THE
KEYBOARD. ONE"
150 PRINT "POINT IS GIVEN FOR EACH MOVEMENT OF THE
ASTEROID FIELD."
160 PRINT
: PRINT "PRESS <B>EGIN"
170 A$=INKEY$
: IF A$="" THEN 170
180 IF A$="B" THEN RETURN ELSE 170
200 PRINT @340, "ASTRO-BLASTER";
: FOR X=0 TO 127
: SET(X, 19)
: NEXT X
: PRINT @488, "BY WADE POUST";
: PRINT @660, "HIGH SCORE
: "N"- "N$;
: PRINT @960, "DO YOU WANT INSTRUCTIONS?";
210 A$=INKEY$
: IF A$="" THEN 210
220 IF A$="Y" THEN 110
230 IF A$="N" THEN RETURN
240 GOTO 210
300 IF SC>(BG*400) THEN BG=BG+1
: PRINT @30, "BONUS GAME";
: FOR X=1 TO 500
: NEXT X
: CLS

```

```

: GOTO 20 ELSE PRINT @138, "SCORE=";SC;
: FOR I=1 TO 9
: Q(I)=RND(63)+129
: NEXT I
: BG=1
305 PRINT @C-64, CHR$(Q(1));CHR$(Q(2));CHR$(Q(3));
: PRINT @C, CHR$(Q(4));CHR$(Q(5));CHR$(Q(6));
: PRINT @C+64, CHR$(Q(7));CHR$(Q(8));CHR$(Q(9));
310 IF SC<100 THEN PRINT @0, "PRACTICE MAKES
PERFECT!!!";
: GOTO 350
320 IF SC<200 THEN PRINT @0, "NOT BAD!!!";
: GOTO 350
330 IF SC<300 THEN PRINT @0, "ALMOST EXCELLENT!!!";
: GOTO 350
340 PRINT @0, "EXCELLENT!!!!!!!!!!!!!!!!!!!!";
350 IF SC>N THEN PRINT
: INPUT "WHAT IS YOUR NAME";N$
: N=SC
360 FOR X=1 TO 1000
: NEXT X
: SC=0
: GOTO 10

```

Model III Tips

Mr. A.W. Thompson
101 South Merrimac Drive
Fitzgerald, GA 31750

I wrote this short and easy-to-type graphics program to demonstrate to the beginning programmer why:

- a) One should transfer a program to tape before running it.
- b) One should be very careful when using a poke statement.

It is written specifically for a Model III 16K.

NOTE: At the completion of the graphics display, the computer will clear all memory and return automatically to the Cass mode, if run on a Model III 16K TRS-80.

```

10 CLS
20 A=16000
30 PRINT "HELP I AM LOSING EVERY BITE OF MY MEMORY"
40 A=A+1
50 POKE A,191
60 GOTO 30

```

Gems

Michael Moery
Route 1, Box 54
Hennessey, OK 73742

The Quest for the Unknown Gems is a game written for the Model III. The object of this game is to pick up the unknown gems (the inverted question mark) and escape through the hole in the bottom that is provided by this action. You may move diagonally. You can also hyperspace using the SPACEBAR. Every 10 levels you receive an extra life.

```

10 '
: .....
: .....
20 ' THE QUEST FOR THE UNKNOWN GEMS
30 ' by David Lee Patocka 3/82

```

```

40 ' originally for the TRS-80 COLOR COMPUTER
50 ' adapted to run on the TRS-80 Model III by
60 ' Mike Moery 10/82
70 '
' .....
' .....
80 S=1
: SS=3
: S$=CHR$(128)
: Q$=CHR$(191)
: CLS
: RANDOM
90 R=RND(3)
: IF R=1 THEN X=252
100 IF R=2 THEN X=253
110 IF R=3 THEN X=197
120 POKE 16419,X
130 PRINT @207, "THE QUEST FOR THE UNKNOWN GEMS";
140 PRINT @272, "(BY MOERY M AND PATOCKA D)";
: POKE 15642, 253
: POKE 15656, 197
150 FOR X=1 TO 500
: NEXT
160 PRINT @402, "WARRIOR";
: POKE 15778,253
170 FOR X=1 TO 500
: NEXT
180 PRINT @466, "UNKNOWN GEM";
: POKE 15842,252
190 FOR X=1 TO 500
: NEXT
200 PRINT @530, "EVIL DAVID";
: POKE 15906,197
210 FOR X=1 TO 500
: NEXT
220 PRINT @640, "Your tasks are to take the unknown
gems and escape the dungeons!";
230 PRINT @704, "Always avoid evil David P, the
Guardian!";
: POKE 16088,197
240 PRINT @768, "Good luck!";
250 FOR X=1 TO 2000
: NEXT
260 CLS
270 Z$=CHR$(191)+CHR$(191)
280 Z$=Z$+Z$+Z$+Z$+Z$
290 FOR X=0 TO 63
: PRINT @X, Q$;
: NEXT
300 FOR X=64 TO 960 STEP 64
: PRINT @X-1, Q$;
: PRINT @X-2, Q$;
: PRINT @X, Q$;
: PRINT @X+1, Q$;
: NEXT
310 FOR X=960 TO 1022
: PRINT @X-64, Q$;
: PRINT @X, Q$;
: NEXT
320 IF S>20 THEN FOR X=1 TO 40 ELSE FOR X=1 TO S+20
330 Z=RND(895)
: N=RND(895)
340 PRINT @Z, Z$;
350 FOR Z=1 TO 4
360 PRINT @N, Q$;
370 N=N+32
: NEXT
380 NEXT
390 G=0
: X=16383
400 PRINT @960, "LEVEL
: "S"WARRIORS LEFT
: "SS;
410 POKE X,253
420 HH=RND(60)+1
: HY=RND(13)
: H=HH+(HY*64)+15360
: IF PEEK(H)=191 THEN 420

```

```

430 YY=RND(61)
: YH=RND(14)
: Y=YY+(YH*64)+15360
: IF PEEK(Y)=191 THEN 430
440 POKE Y,252
450 POKE H,197
460 F=INT(S/10)+1
470 FOR U=1 TO 500
: NEXT
: GOSUB 510
480 GOSUB 570
: GOSUB 840
: GOSUB 720
490 GOTO 480
500 CLS
: S=S+1
: GOTO 270
510 POKE X,0
520 XX=RND(61)
: XY=RND(14)
: X=XX+(XY*64)+15360
530 IF PEEK(X)=191 THEN 520
540 POKE X,253
550 GOSUB 570
560 RETURN
570 IF RND(S+F)=1 THEN RETURN
580 POKE H,0
590 IF HH>XX THEN HH=HH-1
600 IF HH<XX THEN HH=HH+1
610 IF HY>XY THEN HY=HY-1
620 IF HY<XY THEN HY=HY+1
630 H=HH+(HY*64)+15360
640 POKE H,197
650 IF H=X THEN FOR T=1 TO 200
: NEXT
: GOSUB 670
660 GOSUB 840
: RETURN
670 CLS
: FOR U=1 TO 250
680 POKE H,196
690 NEXT
700 CLS
710 SS=SS-1
: IF SS=0 THEN GOSUB 980 ELSE S=S-1
: GOTO 500
720 GOSUB 1040
: POKE X,0
730 YX=XY
: XI=XX
740 P=PEEK(15359)
750 IF P=8 OR P=72 OR P=40 THEN YX=YX-1
760 IF P=16 OR P=80 OR P=48 THEN YX=YX+1
770 IF P=32 OR P=48 OR P=40 THEN XI=XI-1
780 IF P=64 OR P=80 OR P=72 THEN XI=XI+1
790 M=XI+(YX*64)+15360
800 IF PEEK(M)=252 THEN XX=XI
: XY=YX
: X=XX+(XY*64)+15360
: POKE X,253
: GOSUB 840
: RETURN
810 IF PEEK(M)=191 THEN POKE X,253
: RETURN
820 XX=XI
: XY=YX
: X=XX+(XY*64)+15360
: POKE X,253
830 RETURN
840 IF X=Y THEN POKE Y,0
: G=1
: Y=0
850 IF G=1 THEN K=RND(56)+3 ELSE 890
860 POKE K+896+15360,0
: POKE K+960+15360,0
870 POKE K+832+15360,0
880 G=0
890 IF H=Y THEN POKE Y,252

```

```

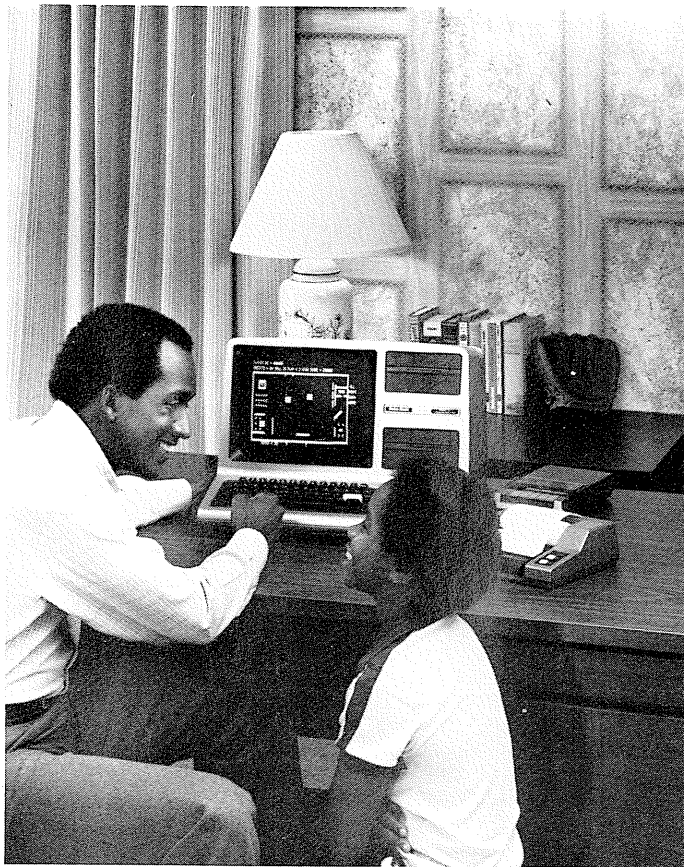
: HH=RND(60)+1
: HY=RND(13)
: H=HH+(HY*64)+15360
: IF PEEK(H)=191 THEN 890
900 POKE H,197
910 IF X>15360+959 THEN GOSUB 930
920 RETURN
930 POKE X-64,191
940 FOR V=1 TO 16
: PRINT @980, ""
: FOR T=1 TO 25
: NEXT T
: NEXT V
950 IF (S/10)<>INT(S/10) THEN 500
960 SS=SS+1
970 GOTO 500
980 PRINT @463, "ANOTHER GAME Y/N";
990 PRINT @20, "SCORE
: "S-1;
1000 A$=INKEY$
1010 IF A$="Y" THEN RUN
1020 IF A$="N" THEN CLS
: END
1030 GOTO 1000
1040 A$=INKEY$
: IF A$=CHR$(32) THEN GOSUB 510
1050 RETURN

```

```

10 REM KUTENKAMEN
20 REM BY JOHN CLEMENT FEBRUARY, 1982 REV. MARCH,
1982
100 CLS
: PRINT TAB(25)"KUTENKAMEN"
110 PRINT
: PRINT "THIS IS THE GAME OF 'KUTENKAMEN'."
120 PRINT "YOU ARE LEADING AN EXPEDITION TO"
130 PRINT "THE LOST TEMPLE OF THE GREAT EGYPTIAN
KING,"
140 PRINT "KUTENKAMEN."
150 PRINT "YOU GIVE ME ONE-WORD COMMANDS TO DIRECT
YOUR MOVEMENT"
160 PRINT "THROUGH THE TEMPLE."
170 PRINT "HERE ARE THE VALID COMMANDS: "
180 PRINT "N, S, E, W, GET, RUB, QUIT, LOOK, READ,
SCORE, INVENT(INVENTORY)"
190 PRINT
: PRINT TAB(25) "PRESS ANY KEY TO CONTINUE"
200 IF INKEY$="" THEN 200
210 CLS
: PRINT "THE OBJECT IS TO COLLECT ALL THE
TREASURES,"
220 PRINT "AND ARRIVE AT THE PHAROAH'S CHAMBER IN THE
FEWEST"
230 PRINT "TURNS."
240 PRINT "WARNING: THE PHAROAH'S EVIL SPIRITS AND
CURSES"
250 PRINT "DO NOT LIKE YOUR INTRUSIONS!!!"
260 PRINT
: PRINT TAB(25) "PRESS ANY KEY TO BEGIN"
270 IF INKEY$="" THEN 270
275 DEFINT A-Z
280 DIM D$(25), WP(25, 4), TL(5), T$(5), TC$(11),
TH(5)
290 RESTORE
: FOR J=1 TO 25
: READ D$(J)
: NEXT J
300 FOR J=1 TO 4
: FOR K=1 TO 25
: READ WP(K, J)
: NEXT K, J
310 FOR J=1 TO 11
: READ TC$(J)
: NEXT J
320 FOR J=1 TO 5
: READ T$(J)
: NEXT J
330 FOR J=1 TO 5
: READ TL(J)
: NEXT J
340 FOR J=1 TO 5
: TH(J)=0
: NEXT J
: L=1
: T=0
: Z=0
: X=0
: S=0
: RANDOM
: CLS
350 PRINT D$(L)
380 IF L=25 AND X=5 THEN PRINT "CONGRATULATIONS! YOU
SURVIVED THE TEMPLE OF KUTENKAMEN."
: PRINT "IT TOOK";T;"TURNS TO SCORE";S;"OUT OF
125."
: END
390 IF X=5 AND Z=0 THEN PRINT "YOU HAVE ALL THE
TREASURES. NOW YOU MUST GET TO THE PHAROAH'S
CHAMBER."
: Z=1
400 IF L=25 THEN PRINT "YOU MADE IT. BUT YOU DON'T
HAVE ALL THE TREASURES."
410 IF L=5 OR L=13 OR L=23 OR L=24 THEN PRINT "YOU
ARE NOW DEAD. TRY AGAIN"

```



Kutenkamen

John Clement
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Clark, NJ 07060

Here is an adventure game, "Kutenkamen", for the Model III computer.


```

: FOR Q=1 TO 2000
: NEXT
: GOTO 290
420 IF L=10 THEN PRINT "A BAT GRABS YOU WITH ITS
CLAWS AND FLIES YOU TO ANOTHER ROOM."
: L=RND(21)
: GOTO 350
430 TN=0
: FOR J=1 TO 5
: IF L=TL(J) THEN TN=J
440 NEXT J
450 IF TN<>0 THEN PRINT "THERE IS ";T$(TN);" HERE."
460 C$=""
: INPUT C$
: IF C$="" THEN 460 ELSE T=T+1
470 IF C$="ISIS" AND L=20 THEN PRINT "THE PANEL MOVES
ASIDE, REVEALING ANOTHER ROOM."
: L=22
: GOTO 350 ELSE IF C$="ISIS" THEN PRINT "I
DON'T KNOW THAT WORD HERE."
: GOTO 460
480 C=0
: FOR J=1 TO 11
: IF C$=TC$(J) THEN C=J
490 NEXT J
500 IF C=1 THEN PRINT "IT TOOK";T;"TURNS TO
SCORE";S;"OUT OF 125."
: END
510 IF C=2 AND L=3 THEN PRINT "THEY TRANSLATE 'CODE
WORD ISIS'."
: GOTO 460 ELSE IF C=2 THEN PRINT "I DON'T KNOW
THAT WORD HERE."
: GOTO 460
520 IF C=3 AND TH(2)=1 THEN PRINT "MYSTERIOUSLY, AN
EVIL SPIRIT MATERIALIZES IN FRONT OF YOU. IT
IMMEDIATELY VANQUISHES YOU."
: PRINT "YOU ARE NOW DEAD. TRY AGAIN."
: FOR Q=1 TO 2000
: NEXT Q
: GOTO 290 ELSE IF C=3 THEN PRINT "YOU DO NOT
HAVE THE MAGICAL IDOL."
: GOTO 460
530 IF C<>4 THEN 580
540 IF X=0 THEN PRINT "YOU AREN'T HOLDING ANYTHING."
: GOTO 460
550 PRINT "YOU ARE HOLDING THE FOLLOWING:"
560 FOR J=1 TO 5
: IF TH(J)=1 THEN PRINT T$(J)
570 NEXT J
: GOTO 460
580 IF C<>5 THEN 640
590 FOR J=1 TO 5
600 IF L=TL(J) THEN TL(J)=0
: TH(J)=1
: GOTO 630
610 NEXT J
620 PRINT "THERE ARE NO TREASURES TO GET."
: GOTO 460
630 PRINT "TAKEN."
: X=X+1
: S=S+25
: GOTO 390
640 IF C=10 THEN 350
650 IF C=11 THEN PRINT "SO FAR, YOU USED";T;"TURNS TO
SCORE";S
: GOTO 460
660 IF C=0 THEN 680
670 C=C-5
: IF WP(L, C)=0 THEN PRINT "THERE IS NO WAY TO
GO IN THAT DIRECTION."
: S=S-1
: GOTO 460 ELSE L=WP(L, C)
: GOTO 350
680 ON RND(3) GOTO 690 ,700 ,710
690 PRINT "WHAT?"
: GOTO 460

```

```

700 PRINT "I DON'T UNDERSTAND."
: GOTO 460
710 PRINT "I DON'T KNOW WHAT YOU MEAN."
: GOTO 460
720 DATA "YOU ARE AT THE ENTRANCE TO KUTENKAMEN'S
TEMPLE."
730 DATA "YOU ARE INSIDE THE TEMPLE ENTRANCE."
740 DATA "YOU ARE IN A CHAMBER WITH HIEROGLYPHICS ON
THE EAST WALL."
750 DATA "YOU ARE IN A ROOM WITH TWO WALLS, WEST AND
SOUTH."
760 DATA "YOU ARE IN THE SERPENT ROOM. THE SKINS OF
DEAD SNAKES LINE THE WALLS. SUDDENLY, ONE OF
THE SNAKES COMES TO LIFE AND EATS YOU."
770 DATA "YOU ARE IN THE MUSIC ROOM."
780 DATA "YOU ARE IN A RECTANGULAR ROOM. PICTOGRAMS
LINE THE SOUTH WALL."
790 DATA "YOU ARE IN A HIGH-WALLED ROOM, WHICH IS
DOMINATED BY A LARGE STONE SCULPTURE."
800 DATA "YOU ARE IN THE MAGIC ROOM."
810 DATA "YOU ARE INSIDE THE ENTRANCE OF A CAVE."
820 DATA "YOU ARE AT THE EAST END OF A LONG EAST/WEST
HALLWAY. TO THE NORTH LOOMS THE VELVETY
BLACKNESS OF A CAVE."
830 DATA "YOU ARE AT THE WEST END OF A LONG EAST/WEST
HALLWAY. A MOANING SOUND IS EMANATING FROM THE
SOUTH."
840 DATA "YOU ARE IN A VERY DARK ROOM. A MUMMY
COMES OUT AND STRANGLES YOU."
850 DATA "YOU ARE IN A CHAMBER FILLED WITH SCRAPS OF
POTTERY."
860 DATA "YOU ARE IN A RECTANGULAR COURTYARD."
870 DATA "THE CEILING DROPS DOWN SHARPLY HERE."
880 DATA "YOU ARE IN A LOW CRAWL."
890 DATA "YOU ARE IN A SMALL CRYPT."
900 DATA "THE CRAWL BRANCHES OFF THREE WAYS."
910 DATA "YOU ARE IN A NORMAL ROOM AGAIN. THERE IS A
PANEL ON THE NORTH WALL. HIEROGLYPHICS ON IT
TRANSLATE 'INCITE THE WORD TO PASS'"
920 DATA "YOU ARE IN THE RICHES ROOM."
930 DATA "YOU ARE IN A PASSAGE WITH THREE EXITS."
940 DATA "YOU ARE AT THE EDGE OF A PIT.
A-A-A-HHH! YOU JUST FELL DOWN THE
PIT."
950 DATA "YOU ARE IN A ROOM WITH LONG KNIVES ON THE
EAST WALL. SUDDENLY ONE OF THE KNIVES FLIES
OVER AND PIERCES YOUR HEART."
960 DATA "YOU ARE IN THE PHAROAH'S CHAMBER."
970 DATA 0, 3, 5, 6, 0, 0, 2, 9, 0, 0, 10, 14, 12,
15, 16, 0, 0, 17, 20, 0, 0, 24, 0, 0, 0
980 DATA 0, 1, 0, 3, 0, 0, 0, 7, 0, 0, 9, 11, 0, 0,
0, 17, 19, 0, 21, 0, 0, 23, 0, 0, 22
990 DATA 0, 7, 2, 0, 3, 4, 0, 0, 8, 11, 0, 13, 0, 12,
14, 15, 18, 0, 0, 19, 0, 20, 0, 2, 2, 0
1000 DATA 2, 0, 4, 0, 0, 0, 8, 0, 11, 0, 12, 0, 0, 0,
0, 0, 16, 0, 17, 0, 19, 25, 22, 0, 0
1010 DATA "QUIT", "READ", "RUB", "INVENT", "GET",
"N", "E", "S", "W", "LOOK", "SCORE"
1020 DATA "A GOLDEN HARP", "A MAGICAL IDOL", "A GOLD
STATUE OF THE PHAROAH", "A BUNCH OF SILVER
COINS", "A BAG OF ASSORTED JEWELS"
1030 DATA 6, 9, 15, 18, 21

```

Subdestroyer

Steven Berndt
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Lyons, IL 60534

I am the proud owner of a TRS-80 Model III and a new LP VII. I think it is the greatest invention since the television.

(Continued on page 10)

Record Chess Play

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Concord, CA 94519

I wrote the following PC-2 program particularly for "Chess by Mail" in mind, but it should be of interest and use to anyone wanting to record chess problems, games positions, or just to have fun plotting boards and chess pieces.

For the requested inputs use:

P for Pawn
N for Knight
B for Bishop
R for Rook
Q for Queen
K for King

For Rows and Columns use 1 to 8
For color use 0 and 3 respectively

```

500 GRAPH
  : GOTO 17120
510 PRINT "DEF. A OR HIT <ENTER>"
3020 P=1
  : N=2
  : B=3
  : R=4
  : Q=5
  : K=6
3310 INPUT "PIECE=";Z
3320 INPUT "COL.=";X
  : X=27*(X-1)+2
3330 INPUT "ROW=";Y
  : Y=27*(Y-1)+3
3335 INPUT "COLOR=";C
  : COLOR C
3340 ON Z GOSUB 13110, 13210, 13310, 13410, 13510,
  13610
3350 GOTO 3020
13110 R=0
  : B=3
  : E+15
  : S=3
  : GOSUB 23110
13120 R=3
  : B=6
  : E=12
  : GOSUB 23110
13130 R=12
  : GOSUB 23110
13140 R=15
  : GOSUB 23110
13150 R=6
  : B=9
  : E=9
  : GOSUB 23110
13160 R=9
  : GOSUB 23110
13170 R=18
  : GOSUB 23110
13180 RETURN
13210 R=0
  : B=3
  : E=18
  : GOSUB 23110
13220 R=3
  : B=6
  : GOSUB 23110
13230 R=6
  : B=9
  : GOSUB 23110
13240 R=9
  : E+15
  : GOSUB 23110
13250 R=9
  : B=0
  : E=3
  : GOSUB 23110
13260 R=12
  : E=15
  : GOSUB 23110
13270 R=15
  : B=3
  : E=1
  : GOSUB 23110
13280 R=18
  : B=6
  : E=9
  : GOSUB 23110
13290 RETURN
13310 R=0
  : B=0
  : E=18
  : S=3
  : GOSUB 23110
13320 R=3
  : B=6
  : E=12
  : GOSUB 23110
13330 R=6
  : GOSUB 23110
13340 R=15
  : GOSUB 23110
13350 R=9
  : B=3
  : E=15
  : GOSUB 23110
13360 R=12
  : GOSUB 23110
13370 R=18
  : B=9
  : E=9
  : GOSUB 23110
13380 RETURN
13410 R=0
  : B=0
  : E=18
  : S=3
  : GOSUB 23110
13420 R=3
  : B=3
  : E=15
  : GOSUB 23110
13430 R=15
  : GOSUB 23110
13440 FOR R=6 TO 12 STEP 3
13450 B=6
  : E=12
  : GOSUB 23110
13460 NEXT R
13470 R=18
  : B=3
  : E=15
  : S=6
  : GOSUB 23110
13480 RETURN
13510 R=0
  : B=3
  : E=15
  : S=3
  : GOSUB 23110
13520 R=3
  : GOSUB 23110
13530 R=6
  : B=6
  : E=12
  : S=3
  : GOSUB 23110

```

```

1354Ø R=9
: S=6
: GOSUB 2311Ø
1355Ø R=12
: B=3
: E=15
: GOSUB 2311Ø
1356Ø R=15
: B=Ø
: E=18
: S=9
: GOSUB 2311Ø
1357Ø R=18
: B=6
: E=12
: S=6
: GOSUB 2311Ø
1358Ø RETURN
1361Ø R=Ø
: B=3
: E=15
: S=3
: GOSUB 2311Ø
1362Ø R=9
: GOSUB 2311Ø
1363Ø R=3
: B=Ø
: E=18
: GOSUB 2311Ø
1364Ø R=6
: GOSUB 2311Ø
1365Ø R=12
: B=9
: E=9
: GOSUB 2311Ø
1366Ø R=18
: GOSUB 2311Ø
1367Ø R=15
: G=6
: E=12
: GOSUB 2311Ø
1368Ø RETURN
1712Ø LINE (Ø, Ø)-(216, 216), Ø, 3, B
17125 LINE (Ø, 27)-(216, 27)
1713Ø Y=27
17135 FOR Z=Ø TO 2
1714Ø Y=Y+27
: LINE (216, Y)-(Ø, Y)
1715Ø Y=Y+27
: LINE (Ø, Y)-(216, Y)
17155 NEXT Z
1716Ø LINE (189, 216)-(189, Ø)
1717Ø X=189
: FOR Z=Ø TO 2
17175 X=X-27
: LINE (X, Ø)-(X, 216)
1718Ø X=X-27
: LINE (X, 216)-(X, Ø)
1719Ø NEXT Z
1721Ø Y=2
1722Ø FOR Z=1 TO 4
1723Ø FOR X=2 TO 164 STEP 54
17235 LINE (X, Y)-(X+23, Y+23), Ø, Ø, B
1724Ø NEXT X
17245 Y=Y+27
1725Ø FOR X=191 TO 29 STEP -54
17255 LINE (X, Y)-(X+23, Y+23), Ø, Ø, B
1726Ø NEXT X
17265 Y=Y+27
1727Ø NEXT Z
1729Ø GOTO 51Ø
1731Ø "A"
17315 COLOR Ø
: Y=192
: X=2
: GOSUB 3731Ø

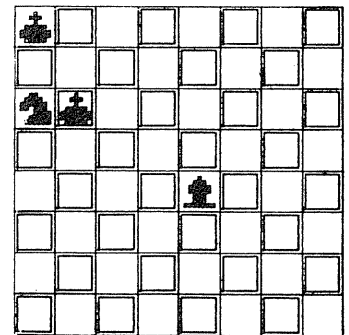
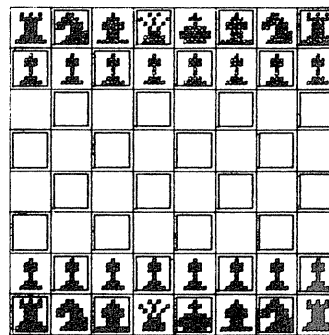
```

```

1732Ø Y=165
: X=191
: GOSUB 3731Ø
1733Ø COLOR 3
: Y=3
: X=2
: GOSUB 3731Ø
1734Ø Y=3Ø
: X=191
: GOSUB 3741Ø
1735Ø END
2311Ø FOR C=B TO E STEP S
2312Ø GLCURSOR (X+C, Y+R)
: LPRINT " ."
2313Ø NEXT C
: RETURN
3731Ø FOR P=1 TO 8
3732Ø ON P GOSUB 1341Ø, 1321Ø, 1331Ø, 1351Ø, 1361Ø,
1331Ø, 1321Ø, 1341Ø
3733Ø X=X+27
: NEXT P
3734Ø RETURN
3741Ø FOR P=1 TO 8
3742Ø GOSUB 1311Ø
3743Ø X=X-27
: NEXT P
3744Ø RETURN

```

CHECK MATE!



Free Advice

Arthur B. Hunkins
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Greensboro, NC 27412

These programs are just for fun! They should furnish plenty of good party conversation and entertainment. My 14-year old son David came up with the idea, based on the familiar, random, EXECUTIVE DECISION MAKER routine. Anyone "initiated" can coach the PC-1 to respond "yes," "no," "maybe," "I cannot help you," or even "I do not understand," to questions posed. All the frustrated neophyte can elicit, is an utter lack of comprehension!

The secret in version 1 is to press (ENTER) (inconspicuously!) from one to four (or more) times BEFORE entering the question. (Watch the DEG legend out of the corner of your eye; do not press (ENTER) a second time until it blinks back on.)

Responses, including the default "I do not understand," can easily be changed. Additional options (F\$, G\$, etc.) can be added between 90 and 100.

If your friends catch on to the above too quickly, try the following variant. Questions are input the same way, but the secret in this version has nothing to do with question entry. The PC-1 pauses to "think" about the answer while totally ignoring the question! The trick is to press one to four spaces before pressing (ENTER) to obtain answer. With this method DEG does not blink; however, the underline cursor appears, moving with space entry. One advantage here is that the (SPACE) key can be hit as rapid-fire as you like.

As before, responses can be added—between 120 and 130; use an extra blank in A\$ for each new option. Pressing more than four spaces (as currently constituted) results in the same message—"cannot help."

```

10 PAUSE "FREE ADVICE"
20 PAUSE "ASK ME ANY QUESTION--"
30 PAUSE "I GIVE YES/NO ANSWERS."
40 PAUSE "QUESTION, PLEASE?"
   : BEEP 2
50 INPUT " ", A$
   : IF A$ PAUSE "I DO NOT UNDERSTAND."
   : GOTO 40
60 INPUT " ", B$
   : IF B$ PAUSE "YES"
   : GOTO 40
70 INPUT " ", C$
   : IF C$ PAUSE "NO"
   : GOTO 40
80 INPUT " ", D$
   : IF D$ PAUSE "MAYBE"
   : GOTO 40
90 INPUT " ", E$
   : IF E$ PAUSE "I CANNOT HELP YOU."
   : GOTO 40
100 GOTO 60

```

Enjoy helping your PC-1 dispense words of wisdom. If perchance your friends do not discover how the tricks work, by all means show them—so they can offer FREE ADVICE to THEIR friends!

```

10 PAUSE "FREE ADVICE"
20 PAUSE "ASK ME ANY QUESTION--"
30 PAUSE "I GIVE YES/NO ANSWERS."
40 PAUSE "QUESTION, PLEASE?"
   : BEEP 2
50 INPUT " ", A$
60 PAUSE "THINKING..."
70 PAUSE "HIT ENTER FOR ANSWER"
80 A$=""
   : INPUT " ", A$
90 IF A$="" PAUSE "I DO NOT UNDERSTAND."
   : GOTO 40
100 IF A$=" " PAUSE "YES"
   : GOTO 40
110 IF A$=" " PAUSE "NO"
   : GOTO 40
120 IF A$=" " PAUSE "MAYBE"
   : GOTO 40
130 PAUSE "I CANNOT HELP YOU."
   : GOTO 40

```

Star Defense

Willard J. Brown
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Columbus, OH 43207

I recently purchased the Game I package for the TRS-80 Pocket Computer. One of the things I noticed is that all of the

other games beside Star Blaster had numbers and letters! So a friend and I created this program, "Star Defense", for people like ourselves, who like seeing more than just numbers.

```

9 "A"
   : CLEAR
   : GOTO 10
10 PAUSE "WARRIOR"
11 PRINT "YOUR MISSION IS TO"
12 PRINT "PROTECT YOUR SHIP FROM"
13 PRINT "THE PHI ALPHAS >+<"
14 PRINT "THE ASTEROIDS *"
15 PRINT "BUT BEWARE OF THE"
16 PRINT "DEADLY BLACKHOLE ()"
17 PRINT "THIS IS YOUR SHIP -=>=>"
   : PAUSE "GOOD LUCK"
18 FOR M= 3 TO 1 STEP -1
19 LET A$="-=>=>"
20 LET B$=">+<"
21 LET C$="*"
22 LET D$=" "
23 LET E$="()"
24 PAUSE A$
25 PAUSE D$;A$
26 PAUSE D$;D$;A$
27 PAUSE D$;D$;D$;A$
28 PAUSE D$;D$;D$;D$;A$
30 Q=ABS (439147+Q+Y)
31 R=E+1
33 W=23*Q
34 Q=W-INT (W/R)*R
35 IF Q>8 THEN 48
36 IF Q<=4 THEN 44
37 IF Q>5 THEN 40
40 PAUSE D$;A$;D$;D$;D$;B$
41 PAUSE D$;A$;D$;D$;B$
42 PAUSE D$;A$;D$;B$
43 PAUSE D$;A$;B$
   : GOTO 52
44 PAUSE D$;A$;D$;D$;D$;C$
45 PAUSE D$;A$;D$;D$;C$
46 PAUSE D$;A$;D$;C$
47 PAUSE D$;A$;C$
   : GOTO 52
48 PAUSE D$;A$;D$;D$;D$;E$
49 PAUSE D$;D$;A$;D$;D$;E$
50 PAUSE D$;D$;D$;A$;D$;E$
51 PAUSE D$;D$;D$;D$;A$;E$
   : GOTO 63
52 INPUT "ENTER # OF LASER SHOTS ";Y
   : IF Y>9 THEN 52
53 IF Y<0 THEN 52
54 X=ABS (439147+X+Y)
   : T=T+Y
55 E=E+1
57 F=23*X
58 X=F-INT (F/E)*E
59 IF X=0 THEN 63
60 IF X=5 THEN 63
61 IF X=9 THEN 63
62 BEEP 1
   : PAUSE "OBJECT DESTROYED"
   : GOTO 19
63 BEEP 3
   : PAUSE "YOUR SHIP IS DESTROYED"
64 IF M=3 PAUSE "SECOND SHIP"
65 IF M=2 PAUSE "LAST SHIP"
66 NEXT M
67 L=T*10
68 PAUSE "GAME OVER"
   : PRINT "YOUR SCORE IS ";L
69 END

```


Invisible Maze

William F. Medlock
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Harrisburg, PA 17109

Here is a very simple maze program, for the Color Computer, with Extended BASIC, that I think can be of use in designing any number of games involving motion. The maze is a 10 x 10 grid, and is played with the arrow keys.

The program starts with a white screen that is blank except for an X. When an arrow key is pushed, the X either moves one position, or a barricade appears. As more mistakes are made, more of the maze becomes visible. The exit of the maze is hidden, but in a more serious version, I have placed a small circle at the solution. When the solution is reached, the screen flashes, and there is an ascending sound.

The program can easily be modified for different uses, and provides the novice with an idea how to do a number of functions associated with games.

```

10 PMODE4,1
   : COLOR 0,5
   : PCLS
20 DIM B(101)
30 DR$="NE3NF3NG3NH3"
40 DATA 101, 11, 11, 11, 11, 110, 101, 111, 111, 110
50 DATA 1100, 100, 1, 111, 111, 1110, 1100, 1100,
   1100, 1100
60 DATA 1100, 1001, 110, 1001, 1110, 1100, 1100,
   1100, 1100, 1100
70 DATA 1001, 110, 1001, 110, 1100, 1100, 1000, 1100,
   1100, 1000
80 DATA 1, 1111, 111, 1010, 1100, 1101, 11, 1010,
   1101, 10
90 DATA 100, 1100, 1100, 101, 1010, 1100, 101, 110,
   1100, 100
100 DATA 1101, 1010, 1100, 1100, 100, 1100, 1100,
   1100, 1100, 1100
110 DATA 1100, 1, 1010, 1100, 1100, 1100, 1100, 1100,
   1001, 1010
120 DATA 1101, 11, 11, 1010, 1001, 1110, 1100, 1001,
   11, 10
130 DATA 1001, 11, 11, 11, 10, 1001, 1011, 11, 11,
   10, 40, 49
140 FOR A=0 TO 99
150 READ B(A)
160 NEXT
170 READ C2, E
180 CLS
   : PRINT @69, "MAZE"
190 PRINT @133, "PUSH ARROWS TO SELECT"
   : PRINT @165, "DIRECTION"
200 A$=INKEY$
   : IF A$="" THEN 200
210 SCREEN1, 1
220 X=(C2/10-INT(C2/10))*14+20
   : X=INT(X+.1)
230 Y=INT(C2/10)*14+30
   : Y=INT(Y+.1)
240 XY$="BM"+STR$(X+7)+"", "+STR$(Y+7)+DR$
   : DRAW XY$
250 IF C2=E THEN 380
260 A$=INKEY$
   : IF A$="" THEN 260
270 IF A$=CHR$(94) THEN C3=-10
   : GOSUB 320
   : IF D(1)=0 THEN DRAW"BU7L7R14" ELSE 360
280 IF A$=CHR$(10) THEN C3=10
   : GOSUB 320
   : IF D(2)=0 THEN DRAW"BD7L7R14" ELSE 360

```

```

290 IF A$=CHR$(8) THEN C3=-1
   : GOSUB 320
   : IF D(3)=0 THEN DRAW"BL7D7U14" ELSE 360
300 IF A$=CHR$(9) THEN C3=1
   : GOSUB 320
   : IF D(4)=0 THEN DRAW"BR7D7U14" ELSE 360
310 GOTO 220
320 C5=B(C2)
330 FOR C4=4 TO 1 STEP-1
340 C5=C5/10
   : D(C4)=(C5-INT(C5))*10
   : C5=INT(C5)
350 NEXT
   : RETURN
360 LINE(X+2, Y+2)-(X+11, Y+11), PRESET, BF
370 C2=C2+C3
   : GOTO 220
380 SCREEN0
390 A=1
400 CLS 0
410 SOUND A, 1
420 CLS 5
430 IF A>250 THEN 440 ELSE A=A+5
   : GOTO 400
440 SCREEN1, 1
450 GOTO 450

```

Othello

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This is a 2-player game for 4K Color Computer. It plays according to standard Othello rules. Type in the program and RUN it. An 8 x 8 grid will appear, together with the start-up message. Press any key to begin. Input the two players' names, pressing **ENTER** after each one. The computer will randomly decide which player is black and which is white. Black, moves first. A move consist of "out-flanking" your opponents squares. To outflank means to place a square of your color so that your opponent's row (or rows) of squares is bordered at each end by a square of your color. All out-flanked squares automatically change to your color. A square may outflank in any number of directions at once, vertically, horizontally, and diagonally. Once a square is placed, it cannot be moved. Enter your moves by typing the letter of the vertical column and the number of the horizontal row where you wish to place your square. Enter the move as a single string (column E, row 6, is entered as "E6"). Play alternates black and white. You may not place a square in an occupied space. If you do, the computer will tell you to try again. A similar response will be evoked if you enter a move other than a legal letter/number combination. If a square is placed where it does not outflank anything, the square will be removed from the screen and the player will have to try again. If in a given move, you find it impossible to place a square so as to outflank any enemy positions, you must enter "PASS" as your move. Play will pass to the opposing player. When the entire board is full, (or when an impasse is reached where neither player is able to outflank any opposing squares, in which case "DEADLOCK" is entered as the next move), the computer will count the squares of each color and announce the winner. The player with the most squares of his color wins. Press **E** to end the game, or **R** to play again. In case of a tie, the game will automatically restart, retaining the two play-

ers' names. Old fans of Othello as well as newcomers to the game will enjoy this computer version of this old favorite.

```

10 CLS
   : PRINT @361, "O T H E L L O!"
   : PRINT @391, "BY D WILLIAM SHUNN"
20 FOR X=12 TO 19
   : PRINT @X, CHR$(X+53);
   : PRINT @288+X, CHR$(X+53);
   : NEXT X
30 FOR X=1 TO 8
   : PRINT @X*32+10, X;
   : PRINT @X*32+19, X;
   : NEXT X
40 FOR X=1 TO 8
   : FOR Y=12 TO 19
   : PRINT @X*32+Y, "*";
   : NEXT Y, X
50 PRINT @143, CHR$(207)+CHR$(208);
   : PRINT @175, CHR$(208)+CHR$(207);
60 IF Q=99 THEN RETURN
70 GOSUB 420
80 FOR Q=1 TO 60
90 GOSUB 300
100 PRINT @354, X$"'S MOVE : "
   : INPUT " ";M$
110 IF M$="DEADLOCK" THEN 200
120 IF M$="PASS" THEN GOSUB 410
   : GOTO 90
130 IF LEN(M$)>2 THEN GOSUB 410
   : SOUND 1, 10
   : GOTO 100
140 L$=LEFT$(M$, 1)
   : Y=VAL(RIGHT$(M$, 1))
150 IF L$<"A"ORL$>"H" THEN GOSUB 410
   : SOUND 1, 10
   <: GOTO 100
160 IF Y<1 OR Y>8 THEN GOSUB 410
   : SOUND 1, 10
   : GOTO 100
170 X=ASC(L$)-64
   : IF POINT (X*2+22, Y*2)>-1 THEN GOSUB 410
   : SOUND 1, 10
   : GOTO 100
180 PRINT @Y*32+X+11, CHR$(K);
   : GOSUB 320
   : IF T=0 THEN 100
190 NEXT Q
200 GOSUB 410
   : B=0
   : W=0
   : FOR X=24 TO 38 STEP 2
   : FOR Y=2 TO 16 STEP 2
210 P=POINT (X, Y)
   : IF P=0 THEN B=B+1
220 IF P=5 THEN W=W+1
230 NEXT Y, X
   : PRINT @354, B$":"'B
   : PRINT @386, W$":"'W
   : D=B-W
   : ON SGN(D)+2 GOTO 240, 250, 260
240 PRINT @450, W$" BY"ABS(D)
   : GOTO 270
250 PRINT @450, "TIE--REMATCH"
   : FOR X=1 TO 1000
   : NEXT X
   : Q=99
   : GOSUB 410
   : GOSUB 500
   : GOSUB 40
   : Q$=B$
   : J$=W$
   : GOSUB 450
   : GOTO 80
260 PRINT @450, B$" BY"D

```

```

270 K$=INKEY$
   : IF K$="E" THEN CLS
   : END
280 IF K$="R" THEN Q=99
   : GOSUB 410
   : GOSUB 500
   : GOSUB 40
   : CLEAR
   : GOSUB 440
   : GOTO 80
290 GOTO 270
300 IF X$=W$ THEN X$=B$
   : K=208
   : RETURN
310 X$=W$
   : K=207
   : RETURN
320 GOSUB 410
   : T=0
   : N=1
   : F=0
   : GOSUB 340
   : F=1
   : GOSUB 340
   : N=0
   : GOSUB 340
   : N=-1
   : GOSUB 340
   : F=0
   : GOSUB 340
   : F=-1
   : GOSUB 340
   : N=0
   : GOSUB 340
   : N=1
   : GOSUB 340
   : IF T=0 THEN PRINT @Y*32+X+11, "*";
   : SOUND 1, 10
330 RETURN
340 Z=X
   : A=Y
   : IF K=208 THEN C=0ELSE C=5
350 Z=Z+N
   : A=A+F
   : IF Z>8 OR Z<1 OR A>8 OR A<1 THEN RETURN
360 IF POINT (Z*2+22, A*2)=-1 THEN RETURN
370 IF POINT (Z*2+22, A*2)=C THEN 390
380 GOTO 350
390 Z=Z-N
   : A=A-F
   : IF Z=X AND A=Y THEN RETURN
400 T=1
   : PRINT @A*32+Z+11, CHR$(K);
   : GOTO 390
410 FOR J=352 TO 479 STEP 32
   : PRINT @J, " "
   : NEXT J
   : RETURN
420 K$=INKEY$
   : IF K$="" THEN 420
430 GOSUB 410
440 PRINT @354, "PLAYERS' NAMES:"
   : INPUT " ";Q$
   : INPUT " ?";J$
450 R=RND(8)
   : IF R<5 THEN B$=Q$
   : W$=J$
   : GOTO 470
460 B$=J$
   : W$=Q$
470 PRINT @33, "[BLACK]";
   : PRINT @56, "[WHITE]";
   : PRINT @65, ">";LEFT$(B$, 8);
480 IF LEN(W$)>8 THEN Z$=LEFT$(W$, 8)ELSE Z$=W$
490 PRINT @94, "<";
   : PRINT @94-LEN(Z$), Z$;

```

```

: X$=W$
: GOSUB 410
: RETURN
500 E$=" "
: PRINT @33, E$;
: PRINT @54, E$;
: PRINT @65, E$;
: PRINT @86 E$;
: RETURN

```

City Missile

Robert Sandercott
RR2 Grand Bend
Ontario, CANADA N0M 1T0

Here is a program for the 16K Extended Color BASIC Color Computer. The object of this game is to shoot on coming enemy missiles.

```

1 '**MISSILE** BY R.SANDERCOTT
2 'RR2 GRAND BEND ONTARIO
3 'CANADA N0M 1T0
4 'FOR A 16K EXTENDED COLOR
5 'BASIC COLOR COMPUTER
10 CLS
: PRINT "INSTRUCTIONS Y/N?"
20 F$=INKEY$
: IF F$="" THEN 20
30 IF F$="N" THEN GOTO 400
40 IF X9=1 AND F$="N" THEN RETURN
60 CLS
70 FOR X =1 TO 480 STEP 32
80 PRINT @ X+8, "MISSILE COMMAND"
90 FOR Y =1 TO 50
100 NEXT Y
110 CLS
: NEXT X
120 PRINT " THE GREAT GAME OF MISSILE"
130 PRINT "COMMAND, THOUGHT UP BY ROBERT"
140 PRINT "SANDERCOTT (FROM SCRATCH)."

```

```

410 IF X9=1 THEN RETURN
420 CLEAR 100
430 DIM V(8, 8)
440 DIM C(8, 8)
450 T2=0
460 X1=0
470 B=0
480 B2=0
490 CLS
500 PMODE 3, 1
510 SCREEN 1, 0
520 PCLS
530 TIMER=0
540 F=0
550 B=B+1
560 T=0
570 T1=0
580 DRAW
"BM5,192;C4;U16;R4;U4;R4;U4;R2;D4;R4;U2;R2;D6;R4;
U4;R2;D20"
590 DRAW
"BM120,192;C4;U16;R4;U4;R4;U4;R2;D4;R4;U2;R2;D6;R
4;U4;R2;D20"
600 DRAW
"BM210,192;C4;U16;R4;U4;R4;U4;R2;D4;R4;U2;R2;D6;R
4;U4;R2;D20"
610 PAINT (7, 190), 3, 4
620 PAINT (125, 190), 3, 4
630 PAINT (212, 190), 3, 4
640 DRAW "BM136,136;C3;R8;L4;U4;D8"
650 GET (136, 132)-(144, 140), V
660 GET (120, 120)-(128, 128), C
670 PUT (136, 132)-(144, 140), C
680 R=RND(245)+1
690 J=JOYSTK(0)+1
: J1=JOYSTK(1)+1
700 F=F+B
710 J2=J*4
: IF J2>252 THEN J2=J2-4
720 IF PPOINT(7, 190)=1 AND PPOINT(125, 190)=1 AND
PPOINT(212, 190)=1 THEN 1400
730 J3=J1*2.2
740 IF J3<4 THEN J3=J3+4
750 PUT (J2-4, J3-4)-(J2+4, J3+4), V
760 P=PEEK(65280)
: IF P=126 OR P=254 THEN GOSUB 950
770 IF F>188 THEN GOSUB 820
780 PUT (J2-4, J3-4)-(J2+4, J3+4), C
790 IF F=0 THEN 680
800 LINE (R, 1)-(R, F), PSET
810 GOTO 690
820 LINE (R, 1)-(R, F), PRESET
830 FOR X=5 TO 20 STEP 5
840 SOUND X+10, 2
850 CIRCLE (R, F-2), X, 4
860 PAINT (R, 190), 2, 4
870 FOR I=1 TO 25
: NEXT I
880 PAINT (R, 190), 1, 1
890 NEXT X
900 PAINT (R, F), 1, 1
910 IF PPOINT(7, 190)=1 AND PPOINT(125, 190)=1 AND
PPOINT(215, 190)=1 THEN GOSUB 1400
920 F=0
930 B2=0
940 RETURN
950 B2=B2+1
: IF B2>5 THEN RETURN
960 LINE (128, 165)-(J2, J3), PSET
970 LINE (128, 165)-(J2, J3), PRESET
980 PLAY "L255;12"
990 CIRCLE (J2, J3), 15, 4
1000 PAINT (J2, J3), 2, 4
1010 IF PPOINT(R, F+1)=2 THEN GOSUB 1050
1020 PAINT (J2, J3), 1, 1
1030 PAINT (J2+2, J3-2), 1, 1
1040 RETURN
1050 SOUND 1, 1

```

```

1060 LINE (R, 1)-(R, F), PRESET
1070 B2=0
1080 T=T+30
1090 IF TIMER>2500+(X1*100) THEN GOTO 1150
1100 IF X1<3 THEN XC=.5
1110 IF X1>3 THEN XC=1
1120 B=B+XC
1130 F=0
1140 RETURN
1150 IF PPOINT(7, 190)=3 THEN T1=T1+100
1160 IF PPOINT(125, 190)=3 THEN T1=T1+100
1170 IF PPOINT(212, 190)=3 THEN T1=T1+100
1180 FOR X=1 TO 5
1190 R1=RND(3)+1
1200 SOUND 250, 3
1210 PCLS(R1)
1220 NEXT X
1230 SCREEN 0, 1
1240 CLS
      : X1=X1+3
1250 PRINT T1;":BONUS POINTS"
1260 FOR X=1 TO 1000
      : NEXT X
1270 CLS
1280 T2=T2+T1+T
1290 B=X1
1300 PRINT "CONGRATULATIONS YOU HAVE MADE IT THROUGH
      WAVE#";INT(X1/3)
1310 PRINT
1320 PRINT "YOUR SCORE IS:";T2
1330 PRINT "GET READY TO GO AGAIN"
1340 FOR X=1 TO 2000
      : NEXT X
1350 CLS
1360 PMODE 3, 1
      : SCREEN 1, 0
1370 PCLS
1380 TIMER=0
1390 GOTO 530
1400 PCLS
1410 FOR X=1 TO 120 STEP 10
1420 CIRCLE (128, 92), X
1430 SOUND 30, 3
1440 NEXT X
1450 PCLS
1460 MOTOR ON
      : AUDIO ON
1470 SCREEN 0, 1
      : CLS
1480 IF T2+T>T4 THEN T4=T+T2
      : GOSUB 1610
1490 CLS
1500 PRINT "YOUR CITIES HAVE ALL BEEN DESTROYED.YOUR
      MISSION IS A FAILURE"
1510 PRINT
1520 PRINT "YOUR SCORE IS:";T+T2
1530 PRINT
1540 PRINT "PLAY AGAIN Y/N?"
1550 D$=INKEY$
1560 IF D$="N" THEN 1600
1570 IF D$="Y" THEN X9=1
      : GOSUB 10
      : GOTO 450
1580 X=X+1
      : IF X=300 THEN 1710
1590 GOTO 1550
1600 '
1610 T4=T+T2
1620 FOR X=1 TO 8
1630 R2=RND(8)
1640 CLS(R2)
1650 NEXT X
1660 CLS
      : PRINT "CONGRATULATIONS"
1670 PRINT
1680 PRINT "YOU BEAT TODAYS HIGH SCORE"
1690 INPUT"NAME";T$(6)
1700 RETURN

```

```

1710 CLS
1720 PRINT "      TODAYS HIGH SCORE"
1730 PRINT "-----"
1740 PRINT
1750 PRINT T$(6);"-----";T4
1760 FOR X=1 TO 6000
      : NEXT X
1770 X=0
1780 CLS
      : GOTO 1520

```

Micro Vaders

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I was interested in both Barry Levinson's article (Shoot) in the June issue of the Microcomputer News, and Alexander Benson's article (Auto Repeat) in the October issue.

With the information from both of these programs, I have made a simple version to a popular arcade game.

INSTRUCTIONS

To move, use the right and left arrows; to shoot, use the spacebar. Each invader is worth 10 points; the blue space ship is worth 1-60 points.

```

10 CLS 0
      : PRINT @11, "micro vaders";
20 POKE 1024+16,32
30 PRINT @71, "(1) BEGINNER--100 POINTS";
      : PRINT @103, "(2) EXPERT----200 POINTS";
40 PRINT @288, "CHOOSE SKILL LEVEL";
      : INPUT SK
50 IF SK=1 THEN HA=100
60 IF SK=2 THEN HA=200
70 IF SK<1 OR SK>2 THEN 40
80 CLS 0
      : X=495
90 A=34
      : B=36
      : C=38
      : D=40
      : E=42
      : F=44
100 SP=6
110 G=98
      : H=100
      : I=102
      : J=104
      : K=106
      : L=108
120 A1$=CHR$(128)+CHR$(141+112)+CHR$(128)
130 G1$=CHR$(128)+CHR$(142+16)+CHR$(128)
140 GU$=CHR$(128)+CHR$(129+48)+CHR$(139+48)+CHR$(128)
150 SP$=CHR$(128)+CHR$(132+32)+CHR$(142+32)+
      CHR$(142+32)
160 HIT=0
170 BL=X+2
180 PRINT @A, A1$;
      : PRINT @B, A1$;
      : PRINT @C, A1$;
      : PRINT @D, A1$;
      : PRINT @E, A1$;
      : PRINT @F, A1$;
190 PRINT @G, G1$;
      : PRINT @H, G1$;
      : PRINT @I, G1$;
      : PRINT @J, G1$;
      : PRINT @K, G1$;

```



```

: PRINT @L, G1$;
200 A=A+1
: B=B+1
: C=C+1
: D=D+1
: E=E+1
: F=F+1
: G=G+1
: H=H+1
: I=I+1
: J=J+1
: K=K+1
: L=L+1
210 PLAY "L200;01;V31;12"
220 IF A=480 THEN END
230 IF PEEK(343)=247 THEN X=X-1
240 IF PEEK(344)=247 THEN X=X+1
250 IF PEEK(343)=247 AND MM=3 THEN BL=BL-1
260 IF PEEK(344)=247 AND MM=3 THEN BL=BL+1
270 IF X>506 THEN X=506
280 IF X<480 THEN X=480
290 PRINT @X, GU$;
300 IF MM=4 THEN PRINT @BL, CHR$(128);
310 XD=RND(2)
: IF XD=1 THEN M0=1 ELSE M0=2
320 IF M0=1 THEN PRINT @SP, SP$;
: SP=SP+1
330 IF BL=SP OR BL=SP+1 OR BL=SP+2 OR BL=SP+3 THEN
XS=RND(60)
: HIT=HIT+XS
: PRINT @SP, XS;
: SP=6
: POKE 65314,8
: SOUND RND(255), 10
: CLS 0
340 IF SP=26 THEN M0=2
: SP=6
: CLS 0
350 IF PEEK(345)=247 THEN MM=4
: SOUND 255, 1
360 IF MM=4 THEN BL=BL-32
370 IF BL<6 THEN MM=3
: BL=X+2
380 IF MM=4 THEN PRINT @BL, CHR$(136+32);
390 PRINT @0, "SCORE"HIT;
400 IF BL=A OR BL=B OR BL=C OR BL=D OR BL=E OR BL=F
OR BL=G OR BL=H OR BL=I OR BL=K OR BL=L THEN
SOUND 1, 1
: MM=3
: BL=X+2
: HIT=HIT+10
410 IF HIT>HA THEN 430
420 GOTO 180
430 CLS 4
: PRINT @224+13, "you win";
440 PRINT @416+12, "game over";
450 POKE 1440+16,32
460 POKE 1248+16,32
470 POKE 65314,8
480 IF INKEY$=CHR$(13) THEN RUN ELSE 490
490 GOTO 480

```

INSTRUCTIONS:

There are twenty enemy space ships which try to invade your planet. Your mission is to stop them by destroying them with your space ship located on the bottom of the screen.

To move your space ship, use the arrows; to fire use the space bar. Each time you destroy an enemy ship, you score points. The higher the ship is, the more points you score.

If you destroy the whole fleet, another fleet will attack you, but this time the fleet will start one line lower. The fleet will fire at you, and if they hit you, the game ends.

HAVE FUN!!

P.S. Don't use the **(BREAK)** key to end the game; just let the enemy hit you.

```

0 CLEAR 180
: G=25
1 R=POINT(63, 31)
2 POKE 65318, 122
4 IF R=-1 THEN R=0
5 CLS 0
: T=480
: IT=6
: P=R*32
6 FOR K=305 TO 330
: READ A
: POKE K, A
: NEXT
15 FOR I=0 TO 31
: G$=G$+CHR$(128)
: NEXT
17 C$=CHR$(128)+CHR$(128)
18 X$=CHR$(135)+CHR$(130)
20 H$=CHR$(134)+CHR$(142)+CHR$(130)
25 FOR N=1 TO 5
30 FOR L=1 TO 4
40 F$(N)=CHR$(128)+F$(N)+H$+CHR$(128)
50 NEXT L, N
60 FOR H=1 TO 5
61 P(H)=(H-1)*64+P
63 IF PEEK(345)=247 GOSUB 500
65 IF PEEK(343)=247 GOSUB 400
66 IF PEEK(344)=247 GOSUB 450
67 IF P(H)>509 THEN 80
68 IF RND(0)<.85 GOSUB 690
70 PRINT @P(H), F$(H);
80 NEXT
85 IF P>229+(6-IT)*16 THEN POKE 65318,71
: END
87 U=U+1
88 IF RND(0)<.85 GOSUB 690
90 IF C=0 AND U=14 THEN 140
100 IF U=17 THEN 140
105 IF PEEK(345)=247 GOSUB 500
110 IF (C AND 1)=0 THEN P=P+1
120 IF (C AND 1)=1 THEN P=P-1
126 IF PEEK(343)=247 GOSUB 400
127 IF PEEK(344)=247 GOSUB 450
130 GOTO 60
140 U=0
160 P=P+32
164 FOR Z=0 TO 8
165 PRINT @(C+Z)*32, G$;
166 NEXT
170 C=C+1
200 GOTO 60
400 PRINT @T, C$;
410 T=T-1
415 IF T<480 THEN T=509
420 PRINT @T, X$;
430 RETURN
450 PRINT @T, C$;
460 T=T+1

```

Invaders

Paul Kline
8/9 Shneior Street
Beer Sheva, ISRAEL

This program was written for the TRS-80 4K Color Computer.

```

465 IF T>509 THEN T=480
470 PRINT @T, X$;
480 RETURN
500 X1=(T-480)*2+1
502 POKE 305,122
      : EXEC305
      : EXEC305
505 FOR X=29 TO 0 STEP -2
510 IF POINT(X1, X-1) THEN 600
520 SET(X1, X, 1)
530 RESET(X1, G)
535 G=X
540 NEXT
550 RESET(X1, G)
560 RETURN
600 RESET(X1, G)
610 FOR E=1 TO 5
620 IF INT(P(E)/32)*32=INT(X/2)*32 THEN A=E
      : GOTO 640
630 NEXT
640 J=INT(X1/2)-(P-32*(C+R))
643 J=INT((J+1)/4)*4
645 IF J=0 THEN J=4
648 J=J-4
650 VN=VN+(6-A)*50
655 F$(A)=LEFT$(F$(A),
      J+4)+C$+CHR$(128)+RIGHT$(F$(A), 12-J+1)
657 IF F$(A)=LEFT$(G$, 20) AND A=IT-1 THEN IT=A
      : F$(A)=""
      : LL=LL+1
      : PRINT @P(A), G$;
658 IF VN=3000 THEN R=R+1
      : SET(63, 31, R)
      : RUN
660 PRINT @P(A), F$(A);
680 RETURN
690 XX=(RND(20)+P-INT(P/32)*32)*2
691 POKE 305,124
      : EXEC305
695 IF RND(0)>.5 THEN XX=(T-480)*2
696 IF XX>63 OR XX<0 THEN 695
700 FOR K=2*(C+9)-(6-IT)*3+R*3 TO 30 STEP 2
705 IF POINT(XX, K+1) THEN POKE 65314,71
      : CLS
      : PRINT "YOU SCORED"VN+R*3000"POINTS"
      : GOTO 800
710 SET(XX, K, 1)
715 IF PEEK(343)=247 GOSUB 400
718 IF PEEK(344)=247 GOSUB 450
720 RESET(XX, MM)
      : MM=K
730 NEXT
740 RESET(XX, MM)
750 RETURN
800 POKE 65318,8
805 SOUND 150, 10
810 POKE 65318,71
820 SOUND 120, 10
900 DATA 122, 0, 15, 150, 15, 74, 129, 0, 44, 251,
      198, 0, 247, 255, 32, 198, 255, 247, 255, 32,
      125, 0, 15, 38, 231, 57

```

Air-Raid

Matt Krom
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Here is a program for the Color Computer that I think your readers will enjoy. The program is called Air-Raid.

In Air-Raid, you are controlling an anti-aircraft gun to destroy bombers which fly over head at different altitudes.

You begin with a limited amount of ammunition. In Level One you start with 30 shells, in Level Two you have 25, and in Level Three you have 20. Use the fire button on the right joystick to fire. Each hit adds one point to your counter. Each time your score is a multiple of 11, you are resupplied with ammunition. If your gun is hit with a bomb, you lose five points and nine shells.

You may change your position horizontally by use of the right joystick. When you run out of ammunition, the game ends, and the screen displays your score, your rank, and the highest score since the series began.

You may quit the game early by pressing "I".

```

1 CLEAR 55
2 R2=-99
      : GOTO 292
3 CLS 0
      : GOSUB 420
4 IF W=1 THEN N2=30
      : R3=1
5 IF W=2 THEN N2=25
      : R3=8
6 IF W=3 THEN N2=20
      : R3=4
7 N=N2
      : Y=2
      : S1=32
      : G1=RND(2)
      : Z=32
8 H=32
10 X=JOYSTK(0)
20 IF X<9 THEN H=Z-1
30 IF X>54 THEN H=Z+1
40 IF H=55 THEN H=54
50 IF H=8 THEN H=9
70 Z=H
      : SET(H, 26, 5)
80 RESET(H-1, 26)
      : RESET(H+1, 26)
81 GOSUB 170
      : PRINT @256, R;
82 IF RND(R3)=3 GOSUB 500
85 P=PEEK(65280)
      : IF P=126 OR P=254 THEN 100
86 H$=INKEY$
      : IF H$="I" THEN 280
90 PRINT @284, N;
      : GOTO 10
100 IF H<8 THEN 10
105 SOUND 10, 1
      : SOUND 20, 1
      : SOUND 40, 1
108 N=N-1
      : PRINT @284, N;
110 T=25
120 SET(H, T, 3)
125 IF POINT(H, T-1)<>0 GOSUB 200
140 T=T-2
145 SET(H, 26, 5)
      : GOSUB 170
147 RESET(H, T+2)
150 IF T<>-1 THEN 120
157 IF N<1 THEN 280
160 GOTO 90
170 IF Y>60 THEN Y=7
175 Y=Y+1
180 FOR Y1=Y-1 TO Y+1
185 SET(Y1, 2, 5)
      : NEXT
187 RESET(60, 2)
      : RESET(61, 2)
190 RESET(62, 2)
      : RESET(Y-2, 2)

```

```

195 GOSUB 555
   : RETURN
200 SOUND 100, 2
   : SOUND 200, 4
210 R=R+1
   : PRINT @256, R;
220 IF R/11=INT(R/11) THEN GOSUB 240
230 RETURN
240 IF R=0 THEN RETURN
245 N=N2
   : FOR G=1 TO 15
255 SOUND 200, 1
   : SOUND 250, 1
260 NEXT
   : RETURN
280 FOR W=1 TO 10
285 SOUND 1, 1
   : SOUND 10, 1
290 NEXT
292 CLS
295 PRINT @40, "***AIR-RAID***"
300 SOUND 120, 18
301 IF H=0 THEN 353
302 IF R>R2 THEN R2=R
305 PRINT @135, "YOUR SCORE IS:"R
310 IF R>100 THEN A$="EXPERT"
320 IF R<101 THEN A$="PRO"
330 IF R<40 THEN A$="BEGINNER"
340 IF R<11 THEN A$="ROOKIE"
350 PRINT @331, A$
352 PRINT @169, "HIGH SCORE:"R2
353 PRINT @485, "INPUT SKILL LEVEL(1-3)";
355 E$=INKEY$
   : IF E$="" THEN 355
356 W=VAL(E$)
   : IF W<1 OR W>3 THEN 355
360 R=0
   : GOTO 3
370 IF G1=1 THEN S1=S1+1
375 IF G1=2 THEN S1=S1-1
380 IF S1=61 THEN G1=2
385 IF S1=5 THEN G1=1
390 FOR S2=S1-1 TO S1+1
395 SET(S2, 6, 5)
   : NEXT
405 RESET(S1-2, 6)
   : RESET(S1+2, 6)
410 RETURN
420 L=0
425 T=RND(4)
   : L=L+1
430 FOR Q=32-T TO 31
440 SET(L, Q, 3)
   : NEXT
450 IF L<>63 THEN 425
452 PRINT @236, "AIR-RAID";
453 FOR G7=1 TO 2000
   : NEXT
454 FOR Y8=236 TO 243
   : PRINT @Y8, CHR$(128);
   : NEXT
455 SOUND 100, 5
   : RETURN
500 C=RND(3)
   : SOUND 190, 1
505 IF C=1 THEN O=V
   : M=4
510 IF C=2 THEN O=S1
   : M=6
515 IF C=3 THEN O=Y
   : M=2
517 M=M+1
520 FOR N1=M+1 TO 27
521 SET(O, N1, 1)
530 RESET(O, N1-1)
   : RESET(O, N1)

```

```

535 NEXT
540 IF O=H THEN R=R-5
   : N=N-9
542 IF N<0 THEN N=0
545 IF O=H THEN SOUND 50, 2
   : SOUND 1, 4
550 RETURN
555 IF V<2 THEN V=60
560 V=V-1
565 FOR V1=V-1 TO V+1
570 SET(V1, 4, 5)
   : NEXT
575 RESET(0, 4)
   : RESET(1, 4)
580 RESET(V+2, 4)
585 RESET(2, 4)
   : GOSUB 370
   : RETURN

```

Asteroids-Modified

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Here is my modification of the Color Computer game, Asteroids, by Richard Zepp.

```

5 CLS
   : PRINTTAB(10);"ASTEROIDS"
10 PRINT
   : PRINTTAB(9);"INSTRUCTIONS?"
   : PRINTTAB(14);"(Y/N)"
15 S$=INKEY$
   : IF S$="" THEN 15
20 IF (S$<>"Y") AND (S$<"N") THEN 15
25 IF (S$="Y") THEN GOSUB 425
30 HS=0
35 C=800
   : RV=2
40 B=RND(63)
45 P=0
   : S=0
50 CLS 3
55 FOR X=1 TO 63
60 Y=RND(31)
   : SET (X, Y, 8)
65 NEXT
   : IF P>40 THEN 395
70 P=P+1
75 FOR X=26 TO 31
80 SET (B, X, 3)
   : NEXT
85 SET (B, 31, 4)
90 FOR X=1 TO 10
95 SET (RND(63), RND(25), 2)
   : NEXT
100 FOR X=1 TO 480
   : NEXT
105 V=31
110 A$=INKEY$
115 IF A$="" THEN 120 ELSE SOUND 1, 1
120 SET (B, V, 3)
125 IF A$=CHR$(8) THEN B=B-1
   : IF B<1 THEN B=1
130 IF A$=CHR$(9) THEN B=B+1
   : IF B>63 THEN B=63
135 IF A$=CHR$(32) THEN B=RND(63)
140 V=V-1
145 IF POINT(B, V)=8 THEN RV=RV-1
   : IF RV=-1 THEN 380 ELSE 360
150 IF POINT(B, V)=2 THEN GOSUB 390

```

```

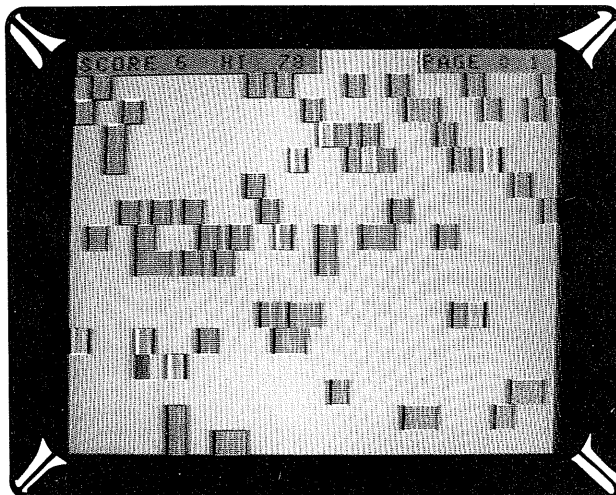
155 SOUND 200, 1
160 IF V=1 THEN GOSUB 365
    : IF P>80 THEN S=S+20
165 IF V=1 THEN 50
170 SET (B, V, 4)
175 IF B<>BC THEN S=S+1
180 BC=B
185 S=S+1
190 IF S=>C THEN 230
195 IF S>HS THEN HS=S
200 PRINT @0, "SCORE="S" RSV"RV;
205 PRINT @22, "PAGE #"P;
210 GOTO 110
215 PRINT @32, "GAME OVER"
220 PRINT @64, "HIGH SCORE="HS;
    : PRINT
    : PRINT
225 PRINT
    : PRINT
    : PRINT "TO PLAY AGAIN PRESS <Enter>"
230 INPUT G
    : GOTO 35
235 CLS 3
    : GOSUB 365
    : RV=RV+1
240 Z=30
    : Y=33
    : C=C+800
245 FOR X=10 TO 32
    : SET (Y, X, 2)
250 SET (Z, X, 2)
    : Z=Z-1
255 Y=Y+1
    : NEXT
    : Z=33
260 Y=30
    : FOR X=10 TO 1 STEP -1
    : Z=Z+1
    : Y=Y-1
265 FOR A=Y TO Z
270 SET (A, X, 8)
    : NEXT
275 SET (31, X, 1)
    : SET (32, X, 1)
280 NEXT
    : RL=RND(10)+25
285 V=31
290 A$=INKEY$
    : SET (RL, V, 3)
    : U=RND(3)
295 IF U=1 THEN RL=RL-1
300 IF U=3 THEN RL=RL+1
305 IF A$=CHR$(8) THEN RL=RL-1
310 IF A$=CHR$(9) THEN RL=RL+1
315 IF POINT(RL, V)=2 THEN 50
320 V=V-1
    : S=S+1
325 IF V=1 THEN 50
330 IF POINT(RL, V)=1 THEN 350
335 SET (RL, V, 4)
340 FOR G=1 TO 25
    : NEXT
345 GOTO 290
350 FOR X=1 TO 3
    : GOSUB 365
    : NEXT
    : S=S+250
355 GOTO 50
360 CLS 0
    : SOUND 2, 9
    : GOTO 50
365 SOUND 89, 1
    : SOUND 125, 1
370 SOUND 147, 1
    : SOUND 176, 1
375 RETURN

```

```

380 SOUND 78, 1
    : SOUND 58, 1
385 SOUND 32, 1
    : SOUND 5, 1
    : GOTO 215
390 SOUND 176, 3
    : S=S+25
    : RETURN
395 FOR I=1 TO 20
    : X=RND(63)
    : Y=RND(31)
400 SET (X, Y, 8)
    : NEXT
405 IF P<80 THEN 70
410 FOR I=1 TO 25
    : X=RND(63)
    : Y=RND(31)
415 SET (X, Y, 8)
    : NEXT
420 GOTO 70
425 CLS
    : PRINTTAB(10);"INSTRUCTIONS"
430 PRINT
    : PRINT "PRESS SPACE BAR TO ADVANCE."
435 GOSUB 565
440 PRINT "THIS IS THE GAME OF ASTEROIDS."
445 GOSUB 565
450 PRINT "YOU MUST AVOID THE ASTEROIDS,"
455 GOSUB 565
460 PRINT "WHICH ARE ORANGE. YOUR GOAL IS:"
465 GOSUB 565
470 PRINT "TO REACH THE TOP. IF YOU TOUCH THE"
475 GOSUB 565
480 PRINT "YELLOW BLOCK, YOU GET 25 POINTS."
485 GOSUB 565
490 PRINT "WHEN YOU REACH INTERVALS OF"
495 GOSUB 565
500 PRINT "1000 POINTS, YOU GO INTO A BONUS"
505 GOSUB 565
510 PRINT "ROUND. IN ALL ROUNDS, YOU USE"
515 GOSUB 565
520 PRINT "THE LEFT/RIGHT ARROWS TO CONTROL"
525 GOSUB 565
530 PRINT "YOUR RED SHIP, AND ONLY, REPEAT"
535 GOSUB 565
540 PRINT "ONLY, IN NORMAL ROUNDS, YOU MAY"
545 GOSUB 565
550 PRINT "PRESS SPACE BAR TO HYPERSPACE."
555 GOSUB 565
560 RETURN
565 'PAUSE ROUTINE
570 IF INKEY$<>CHR$(32) THEN 570
575 RETURN

```




```

950 IF SN=2 THEN PRINT " 2ND MAN !"
    : PRINT "BE CAREFULL"
    : FOR X=48 TO 50
    : FOR Z=80 TO 83
    : PSET (X, Z, 8)
    : NEXT
    : NEXT
960 IF SN=1 THEN PRINT " VERY LAST MAN"
    : FOR X=40 TO 42
    : FOR Z=80 TO 83
    : PSET (X, Z, 8)
    : NEXT
    : NEXT
970 FOR Z=1 TO 10
    : PLAY A$(1)
    : FOR TD=1 TO 100
    : NEXT
    : NEXT
980 PMODE 4, 1
    : SCREEN 1, 1
    : PMODE3
990 GOTO 750
1000 PMODE 4, 1
    : SCREEN 1, 1
1010 FOR X=32 TO 34
    : FOR Z=80 TO 84
    : PSET (X, Z, 1)
    : NEXT
    : NEXT
1020 FOR Z=1 TO 191/2 STEP 2
1030 CIRCLE (A, B), Z
1040 PLAY "T32V1501C"
1050 NEXT
1060 FOR Z=1 TO 20
1070 PMODE 4, 1
    : SCREEN 1, 1
1080 PMODE 4, 1
    : SCREEN 1, 0
1090 PLAY "T32 GEE A GAG"
1100 NEXT
1110 CLS
    : PRINT N$;
    : PRINT ", "
    : PRINT "NOT BAD, "; SC; " SCREENS"
1120 PRINT "HIT ENTER TO RESTART"
1130 LINE INPUT S$
1140 RUN

```

Sub Command

Richard Zepp
1972 Battle Row
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In this game, Sub Command, which is written for the Color Computer, you are the captain of a futuristic submarine. The submarine has only one crewman—you.

CONTROLS:

The **[←]** and the **[→]** keys control the enemy ship's relative position (the position of the enemy in degrees of 0 degrees is straight ahead and increasing to the right. Shifting the arrows increases increment from 5 to 25.) The up and down arrows control the diving and surfacing of your ship. The **[SPACEBAR]** fires torpedoes. The **[M]** key moves your ship to another area.

YOUR ENEMIES:

Aircraft carriers, tankers destroyers, P.T. boats, and minesweepers are the only offensive enemies you are confronted with.

STRATEGIES:

Sinking ships: To sink a ship, first figure out how much lead to give the target (this is determined by comparing the degrees/time ratio to the range of target (Remember: your torpedoes travel at 100 yards a time period).

Evading minesweepers: Dive as soon as one appears and keep diving until it passes over you, then surface and destroy it.

SCORING:

Sinking a ship: Adds tons divided 100 to score, and to timer.

Sinking a minesweeper: It adds ten times to score.

Timer: The timer continuously counts down as the game progresses.

End of game: Is determined when 1) the timer reaches 0, 2) a minesweeper gets you, or 3) your ship implodes.

```

100 ON ERROR GOTO 100
110 TT=1500
120 GOSUB 660
130 TRP=0
140 CLS(0)
150 PRINT "          SUB COMMANDER"
160 PRINT
    : PRINT "          COMPUTED RANGE=XX00YDS."
170 PRINT
    : PRINT "COMPUTED DISPLACEMENT=XX000TONS"
180 PRINT
    : PRINT "          RELATIVE BEARING=XXXDEGREES"
190 PRINT
    : PRINT "DEGREES/TIME=X.X+-9% DEPTH=XXXFT";
200 PRINT
    : PRINT "TORPEDOES=XXSCORE=XXXXX TIME=XXXX";
210 PRINT
    : PRINT "STATUS:"
220 PRINT @83, USING"###";YDS;
230 PRINT @149, USING"###";TNS;
240 PRINT @211, USING"###";DGR;
250 PRINT @391, "
260 PRINT @391, "TARGET:";TYP$;
270 GOSUB 290
280 GOTO 310
290 PRINT @269, USING"#.#";DT;
300 RETURN
310 GOSUB 330
320 GOTO 350
330 PRINT @283, USING"###";FT;
340 RETURN
350 PRINT @329, USING"###";TRP;
360 PRINT @337, USING"#####";SCOR;
370 GOSUB 390
380 GOTO 410
390 PRINT @348, USING"###";TT;
400 RETURN
410 FOR C=1 TO 10
420 A$=INKEY$
    : IF A$<>" " THEN 460 ELSE NEXT C
430 TT=TT-1
    : GOSUB 390
440 IF TYP$="MINESWEEPER" THEN GOSUB 1370
450 SOUND 250, 1
460 IF A$="M" OR A$=CHR$(21) OR A$=CHR$(93) OR
    A$=CHR$(8) OR A$=CHR$(9) OR A$=CHR$(32) OR
    A$=CHR$(10) OR A$=CHR$(94) THEN 480 ELSE 410470
    IF FT>100 THEN 1750

```

```

480 IF A$=CHR$(8) THEN DGR=DGR-5
490 IF A$=CHR$(21) THEN DGR=DGR-25
500 IF A$=CHR$(9) THEN DGR=DGR+5
510 IF A$=CHR$(93) THEN DGR=DGR+25
520 IF DGR>360 THEN DGR=0
530 IF DGR<0 THEN DGR=360
540 IF A$="M" THEN GOSUB 660
550 IF A$=CHR$(32) THEN GOSUB 780
560 IF A$=CHR$(94) THEN FT=FT-10
570 IF A$=CHR$(10) THEN FT=FT+10
580 IF FT<0 THEN FT=0
590 IF FT>110 THEN FT=1750
600 GOSUB 620
610 GOTO 640
620 IF TT<=0 THEN 1770
630 RETURN
640 SOUND 220, 1
650 GOTO 220
660 DGR=RND(60)*5+30
670 DT=RND(8999)/1000
680 YDS=RND(40)
690 TNS=RND(999)
700 TYP=INT(TNS/200)
710 IF INT(TNS/11)=TNS/11 THEN TNS=100
720 TYP$="AIRCRAFT CARRIER"
730 IF TYP=0 THEN TYP$="P.T. BOAT"
740 IF TYP=1 THEN TYP$="MINESWEEPER"
750 IF TYP=2 THEN TYP$="DESTROYER"
760 IF TYP=3 THEN TYP$="TANKER"
770 RETURN
780 IF FT=0 THEN 850
790 PRINT @391, "YOU MUST SURFACE TO FIRE";
800 FOR X=1 TO 55
810 SOUND 100, 1
820 NEXT X
830 PRINT @391, " ";
840 RETURN
850 TRP=TRP+1
860 PRINT @391, " "
870 SOUND 1, 3
880 PRINT @391, "TORPEDO FIRED";
890 SOUND 10, 3
900 PRINT @391, "TORPEDO FIRED";
910 SOUND 20, 3
920 PRINT @391, "TORPEDO FIRED";
930 SOUND 30, 3
940 PRINT @391, "TORPEDO FIRED";
950 SOUND 40, 3
960 PRINT @391, "TORPEDO FIRED";
970 SOUND 50, 3
980 PRINT @391, "TORPEDO FIRED";
990 SOUND 60, 3
1000 PRINT @391, "TORPEDO FIRED";
1010 SOUND 70, 3
1020 PRINT @391, "TORPEDO";CHR$(128);"FIRED";
1030 SOUND 80, 3
1040 PRINT @391, "TORPEDO FIRED";
1050 SOUND 90, 3
1060 PRINT @391, "TORPEDO FIRED";
1070 SOUND 100, 3
1080 PRINT @391, "TORPEDO FIRED";
1090 SOUND 110, 3
1100 PRINT @391, "TORPEDO FIRED";
1110 SOUND 120, 3
1120 PRINT @391, "TORPEDO FIRED";
1130 PRINT @391, " ";
1140 HIT=INT(DGR-YDS*DT)
1150 DGR=INT(HIT/5)*5
1160 TT=TT-YDS
1170 GOSUB 620
1180 IF DGR<0 THEN DGR=360-DGR
1190 IF HIT>-3AND HIT<3 THEN 1280
1200 PRINT @391, "YOU WERE";
1210 IF HIT>3 THEN PRINT @400, "LONG"
: GOTO 1230
1220 PRINT @400, "SHORT";

1230 GOSUB 290
1240 FOR C=1 TO 1000
1250 NEXT C
1260 PRINT @391, " ";
1270 RETURN
1280 PRINT @391, "YOU GOT IT"
1290 TT=TT+TNS
1300 SCORE=SCORE+TNS
1310 IF LEFT$(TYP$, 1)="M" THEN SCORE=SCORE+TNS*10
: TT=TT+75+TNS
1320 HTS=HTS+1
1330 FOR X=1 TO 500
1340 NEXT X
1350 GOSUB 660
1360 RETURN
1370 PRINT @391, "MINE SWEEPER CLOSING IN"
1380 SOUND 200, 5
1390 FOR X=1 TO 5
1400 A$=INKEY$
: SOUND 150, 1
: TT=TT-1
: GOSUB 620
: GOSUB 390
: IF A$="" THEN 1400
1410 IF A$<>CHR$(10) THEN 1730
1420 FT=FT+10
1430 GOSUB 330
1440 SOUND 200, 1
1450 NEXT X
1460 PRINT @391, " ";
1470 PRINT @391, "STILL COMING";
1480 FOR X=1 TO 5
1490 A$=INKEY$
: SOUND 100, 1
: TT=TT-1
: GOSUB 620
: GOSUB 390
: IF A$="" THEN 1490
1500 IF A$<>CHR$(10) THEN 1730
1510 FT=FT+10
1520 GOSUB 330
1530 SOUND 150, 2
1540 NEXT X
1550 TYP$="MINESWEEPER "
1560 PRINT @391, " ";
1570 PRINT @391, "PASSING OVER HEAD";
1580 FOR C=1 TO 5
1590 FOR X=1 TO 250STEP20
1600 TT=TT-1
: GOSUB 390
1610 SOUND X, 1
1620 NEXT X
1630 NEXT C
1640 PRINT @391, " ";
1650 PRINT @391, "ALL CLEAR";
1660 FOR X=1 TO 15
: SOUND 200, 1
1670 TT=TT-1
: GOSUB 390
1680 NEXT X
1690 PRINT @391, " ";
1700 A$=""
1710 FT=90
1720 RETURN
1730 PRINT @391, "HIEL HITLER!, WE GOT YOU";
1740 GOTO 1780
1750 PRINT @391, "YOUR SUB HAS IMPLoded!"
1760 GOTO 1780
1770 PRINT @391, "YOU ARE OUT OF TIME"
1780 RAT=INT((HTS/TRP)*100)
1790 PRINT @416, "YOUR YOU HIT MISS RATIO
IS";RAT;"%";
1800 PRINT " HIT ANY KEY TO CONTINUE"
1810 A$=INKEY$
1820 IF A$="" THEN 1810
1830 RUN

```

Aliens/Impossible Triangle

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Port Jefferson Station, NY 11776

Here are two programs, Alien Destroyer and Impossible Triangle, which I have written for the 32K Color Computer with Extended BASIC. However, both programs can be used with a 16K system.

ALIEN DESTROYER

As the alien starts coming at you, from the right side of the screen, you must line up with him, (using your joystick) and fire at him. When you destroy an alien, another will come at you immediately. After you have destroyed ten of them, they will be accompanied by a decoy. You must distinguish which is the alien, line up with him and destroy him. After you have destroyed ten or more aliens, there will be two decoys accompanying each alien. You have seven shots per alien for the first 30 that come at you. After you have destroyed 30 of them, you will have only five shots per alien. The further he is away from you when you hit him, the more points you are awarded. Also, the more decoys that are accompanying him when you hit him, the more it is worth. You will be awarded more points if you have only five shots to hit any given alien. When you are hit, one of two things will happen. If there are two players playing, your turn ends and the play goes to the other player. If one player is playing, there will be a five second penalty before another alien will come at you. The game ends when each player has taken three turns, or if one player is playing, the game will end after 90 seconds. There is not a time limit when two are playing.

Alien Destroyer

```
10 REM **ALIEN DESTROYER**
20 REM
30 REM JERRY BUSSE
40 REM 46 HALSEY ST.
50 REM PORT JEFF. STA., NY, 11776
60 REM
70 CLS
80 PRINT @ 77, " ALIEN ";
   : PRINT @ 107, " DESTROYER ";
90 SOUND 230, 30
100 CLS
110 INPUT "1 OR 2 PLAYERS";PL
   : IF PL<1 OR PL>2 THEN 110
120 ON PL GOTO 130, 550
130 PRINT "YOU HAVE 90 SECONDS TO DESTROY ALL THE
   ALIENS YOU CAN."
140 PRINT "PRESS FIRE BUTTON TO START"
150 P=PEEK(65280)
   : IF P=254 OR P=126 THEN 160 ELSE 150
160 TP=0
   : S=0
   : SH=0
   : TIMER=0
   : TUP=0
170 RET=0
   : PMODE 3, 1
   : PCLS
   : SCREEN 1, 0
   : CLS
180 PCLS 1
```

```
190 COLOR 4, 1
200 IF TIMER/60>=90 THEN PLAY
   "T100L205AAAABBBAAABBBAAABBBAAABBBAAABBBAAABBBAAAB
   BB"
   : CLS
   : PRINT "TIME'S UP!"
   : TUP=1
   : GOTO 480
210 IF RET=1 THEN RETURN
220 C=RND(180)
   : D=C+3
   : SH=0
230 ED=200
   : ET=227
   : ER=RND(180)
   : JB=RND(180)
240 LINE (ED, C)-(ET, D), PRESET, B
250 IF S>9 THEN LINE (ED, ER)-(ET, ER+3), PRESET, B
260 IF S>19 THEN LINE (ED, JB)-(ET, JB+3), PRESET, B
270 IF S>29 THEN AL=5 ELSE AL=7
280 ED=ED-5
   : ET=ET-5
290 RET=1
   : GOSUB 200
300 IF ED<0 THEN 460
310 LINE (ED, C)-(ET, D), PSET, B
320 IF S>9 THEN LINE (ED, ER)-(ET, ER+3), PSET, B
330 IF S>19 THEN LINE (ED, JB)-(ET, JB+3), PSET, B
340 LINE (0, V)-(20, V), PRESET
   : T=JOYSTK(0)
   : V=JOYSTK(1)*3
350 COLOR 3, 1
   : LINE (0, V)-(20, V), PSET
   : COLOR 4, 1
360 P=PEEK(65280)
   : IF P=126 OR P=254 THEN 370 ELSE 240
370 SH=SH+1
   : IF SH>AL THEN 400
380 COLOR 2, 1
   : LINE (0, V)-(255, V), PSET
   : LINE (0, V)-(255, V), PRESET
   : COLOR 4, 1
390 IF V=C OR V=C+1 OR V=C+2 OR V=C+3 THEN 410
400 LINE (ED, C)-(ET, D), PRESET, B
   : LINE (ED, ER)-(ET, ER+3), PRESET, B
   : LINE (ED, JB)-(ET, JB+3), PRESET, B
   : ED=ED-10
   : ET=ET-10
   : GOTO 300
410 S=S+1
   : TP=TP+INT(+1+(ED/50))*5
   : PLAY "T100L205AABB"
420 IF S>9 THEN TP=TP+INT(ED/50*1.6)
430 IF S>19 THEN TP=TP+INT(ED/50*1.4)
440 IF S>29 THEN TP=TP+INT(ED/50*1.3)
450 RET=0
   : GOTO 180
460 SOUND 100, 3
   : SOUND 100, 3
   : SOUND 100, 3
   : SOUND 50, 10
   : RET=0
470 CLS
   : PRINT "YOU WERE HIT!"
480 PRINT "YOU SHOT DOWN"S"OF THEM"
490 PRINT "YOU RECEIVED"TP"POINTS"
500 IF TUP=1 THEN 540
510 WT=TIMER
520 RET=1
   : GOSUB 200
   : PRINT @ 224, "TIME
   REMAINING:"INT(90-(TIMER/60))
   : PRINT @ 160, "5 SECOND PENALTY"
530 IF TIMER>=WT+300 THEN 170 ELSE 520
540 RUN 110
550 CLS
   : INPUT "NAME OF PLAYER 1";NA$(1)
   : INPUT "NAME OF PLAYER 2";NA$(2)
```

```

560 PRINT NA$(1) " USE THE RIGHT JOYSTICK"
   : PRINT NA$(2) " YOU USE THE LEFT"
   : PRINT
570 PRINT NA$(1) " STEP UP-IT'S YOUR TURN"
   : TU=1
   : TR=1
580 PRINT "PRESS FIRE BUTTON TO START"
590 P=PEEK(65280)
   : IF P=254 OR P=126 THEN 600 ELSE 590
600 GT=0
   : TP(1)=0
   : TP(2)=0
   : S(1)=0
   : S(2)=0
   : SH=0
610 PMODE 3, 1
   : PCLS
   : SCREEN 1, 0
   : CLS
620 PCLS 1
630 COLOR 4, 1
640 C=RND(180)
   : D=C+3
   : SH=0
650 ED=200
   : ET=227
   : ER=RND(180)
   : JB=RND(180)
660 IF C=ER OR C=JB OR ER=JB THEN 640
670 LINE (ED, C)-(ET, D), PRESET, B
680 IF S(TU)>9 THEN LINE (ED, ER)-(ET, ER+3), PRESET,
   B
690 IF S(TU)>19 THEN LINE (ED, JB)-(ET, JB+3),
   PRESET, B
700 IF S(TU)>29 THEN AL=5 ELSE AL=7
710 ED=ED-5
   : ET=ET-5
720 IF ED<0 THEN 900
730 LINE (ED, C)-(ET, D), PSET, B
740 IF S(TU)>9 THEN LINE (ED, ER)-(ET, ER+3), PSET, B
750 IF S(TU)>19 THEN LINE (ED, JB)-(ET, JB+3), PSET,
   B
760 LINE (0, V)-(20, V), PRESET
   : T=JOYSTK(0)
   : V=JOYSTK(TR)*3
770 COLOR 3, 1
   : LINE (0, V)-(20, V), PSET
   : COLOR 4, 1
780 P=PEEK(65280)
   : IF P=252 OR P=124 THEN SOUND 1, 1
   : GOTO 780
790 IF TU=1 THEN IF P=126 OR P=254 THEN 810 ELSE 670
800 IF TU=2 THEN IF P=125 OR P=253 THEN 810 ELSE 670
810 SH=SH+1
   : IF SH>AL THEN 840
820 COLOR 2, 1
   : LINE (0, V)-(255, V), PSET
   : LINE (0, V)-(255, V), PRESET
   : COLOR 4, 1
830 IF V=C OR V=C+1 OR V=C+2 OR V=C+3 THEN 850
840 LINE (ED, C)-(ET, D), PRESET, B
   : LINE (ED, ER)-(ET, ER+3), PRESET, B
   : LINE (ED, JB)-(ET, JB+3), PRESET, B
   : ED=ED-10
   : ET=ET-10
   : GOTO 720
850 S(TU)=S(TU)+1
   : TP(TU)=TP(TU)+INT(+1+(ED/50))*5
   : PLAY "T100L205AABB"
860 IF S(TU)>9 THEN TP(TU)=TP(TU)+INT(ED/50*1.6)
870 IF S(TU)>19 THEN TP(TU)=TP(TU)+INT(ED/50*1.4)
880 IF S(TU)>29 THEN TP(TU)=TP(TU)+INT(ED/50*1.3)
890 GOTO 620
900 SOUND 100, 3
   : SOUND 100, 3
   : SOUND 100, 3
   : SOUND 50, 10

```

```

910 CLS
   : PRINT NA$(TU) " , YOU WERE HIT!"
920 PRINT "SO FAR : "
   : PRINT "YOU SHOT DOWN"(S(TU))"OF THEM"
   : PRINT "YOU HAVE"(TP(TU))"POINTS"
   : PRINT
930 IF TU=2 THEN GT=GT+1
940 IF GT=3 THEN 1030
950 IF TU=1 THEN TU=2
   : TR=3
   : GOTO 970
960 TU=1
   : TR=1
970 PRINT "IT'S "NA$(TU)"'S TURN"
980 PRINT "PRESS THE FIRE BUTTON TO          CONTINUE"
990 P=PEEK(65280)
   : IF TU=1 THEN IF P=254 OR P=126 THEN 1020
1000 IF TU=2 THEN IF P=253 OR P=125 THEN 1020 ELSE
   990
1010 GOTO 990
1020 GOTO 610
1030 CLS
   : PRINT "THE GAME IS OVER!"
1040 PRINT "SCORE:"
   : PRINT NA$(1)
1050 PRINT "YOU SHOT DOWN"(S(1))"ALIEN(S) AND"
   : PRINT "RECEIVED"(TP(1))"POINTS"
1060 PRINT NA$(2)
1070 PRINT "YOU SHOT DOWN"(S(2))"ALIEN(S) AND"
   : PRINT "RECEIVED"(TP(2))"POINTS"
1080 PRINT
   : PRINT
1090 IF TP(1)>TP(2) THEN PRINT NA$(1) " IS THE
   WINNER!!!"
1100 IF TP(1)<TP(2) THEN PRINT NA$(2) " IS THE
   WINNER!!!"
1110 IF TP(1)=TP(2) THEN PRINT "IT WAS A TIE! PLAY A
   TIE-BREAKER"
   : GOTO 570
1120 PRINT
   : PRINT
   : RUN 110

```

IMPOSSIBLE TRIANGLE

Impossible Triangle is taken from a collection of M.C. Escher's works, who used it as a study for a piece which he called 'Waterfall'.

Impossible Triangle

```

10 REM *IMPOSSIBLE TRIANGLE*
20 REM
30 REM JERRY BUSSE
40 REM 46 HALSEY ST.
50 REM PORT JEFF. STA., NY, 11776
60 REM
70 CLS 4
   : PRINT @ 46, " THE ";
80 PRINT @ 102, "IMPOSSIBLE TRIANGLE ";
90 FOR X=1 TO 2000
   : NEXT
100 PMODE 3, 1
   : PCLS 4
   : SCREEN 1, 0
110 COLOR 1, 4
120 FOR X=1 TO 40
130 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), 1, 1
   : PAINT (84, 178), 3, 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, 128, 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, 164, 68, 100, 68, 36,
   68, 84, 84, 45, 84, 76
240 DATA 84, 109, 84, 140, 68, 100, 96, 116, 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, 68, 190, 68, 184, 68,
   190, 236, 96, 236, 96, 236, 90

```

```

39 PRINT @160, "CURRENT SECTOR";AA
40 PRINT @32, "YOUR ALTITUDE IS";A+100000"FEET"
45 IF A>200 THEN PRINT @64, "your altitude is to
   high"
46 IF AA=X THEN GOSUB 300
47 IF A=255 THEN PRINT @64, "you have burned up!!!"
   : END
50 SOUND A, 1
60 NEXT A
100 PRINT @64, " "
105 FOR B=A TO 1 STEP-1
107 V=V-1
108 PRINT @96, "GAL. OF FUEL";V
110 AA=JOYSTK(0)
   : BB=JOYSTK(1)
120 IF BB=0 THEN 10
139 PRINT @160, "CURRENT SECTOR";AA
140 PRINT @32, "YOUR ALTITUDE IS";B+100000;"FEET"
141 IF AA=X THEN V=100
   : GOSUB 300
145 IF B<50 THEN PRINT @64, "your altitude is to low"
147 IF B=1 THEN PRINT @64, "you have crashed into a
   very tall building"
149 IF V=0 THEN PRINT @64, "OUT OF FUEL!!! YOU HAVE
   CRASHED"
   : END
150 SOUND B, 1
160 NEXT B
170 END
300 FOR S=1 TO 5
   : SOUND 255, 1
   : NEXT S
301 V=0
   : N=N+1
302 SS=SS-10
303 V=V+SS
305 X=RND(63)
310 PRINT @128, "ENEMY AT SECTOR";X
315 PRINT @448, "NUMBER OF SHIPS SHOT DOWN";N
320 RETURN

```

Airplane

Michael Schneider
332 Route 32, South
New Paltz, NY 12561

Airplane, is written to run in 16K (possibly 4K) non-extended Color BASIC.

You are the pilot of an airplane; using the right joystick you constantly monitor altitude and fuel. A warning message will flash 50 feet before the plane crashes or burns up. To control altitude, move the joystick lever up or down. So that your plane's fuel does not run out, you must destroy enemy planes. To destroy them, you match up your sector with the enemy's. Destroying enemies will recharge your fuel, but 10 gallons each time.

```

1 '
   ***** THIS
PROGRAM          **      WAS WRITTEN
**              BY          **      michael
schneider       *****
2 CLS
   : INPUT "POINT JOYSTICK UP AND PRESS <ENTER>
   WHEN READY";XX
7 CLS
   : B=1
8 X=RND(63)
   : PRINT @128, "ENEMY AT SECTOR";X
9 SS=200
   : V=200
10 PRINT @64, " "
15 FOR A=B TO 255
16 V=V-1
   : PRINT @96, "GAL. OF FUEL";V
17 IF V=0 THEN PRINT @320, "OUT OF FUEL!!! YOU HAVE
   CRASHED"
   : END
20 AA=JOYSTK(0)
   : BB=JOYSTK(1)
30 IF BB=63 THEN 100

```



Color Zap

Frank Fazio, Jr.
P.O. Box 141
Kennedale, TX 76060-0141

Well, I guess if you print this letter there must be a lot of us Color Computer disk users out there. I have had some experience with the Model I, and some utilities from various software houses. This program is my version of a direct disk I/O utility that allows reading and writing directly to disk sectors. In general, the program has two routines. The main routine allows you to view the contents of a sector, move from sector to sector, or write the buffer contents (Lines 2-9 on the screen) to the sector. On entering the program, you are prompted to enter a starting track (0-34) and sector (1-19). To read the following sector, press (→). To read the previous sector, press (←). By pressing (ENTER), you will enter the 'edit mode' for modifying buffer contents. Upon returning to the main routine, you can write the buffer contents to the sector by pressing (@). Copying sector to sector may be accomplished by reading a sector, pressing the (CLEAR) (this allows logical movement between sectors without altering the screen contents), moving to the desired sector using (→) or (←) and then writing the sector.

Once you have entered the edit routine, a cursor will flash on the screen. Using the four arrows, move the cursor over the byte (or first byte) that you want to modify and press (ENTER). At the bottom of the screen the ASCII value of that byte will be displayed, and you will be prompted for a new value. Enter that value, return to the main routine (using (CLEAR)), and write the disk sector (using (@)). To enter more than one value, just move the cursor to the next byte you want to change and press (ENTER) again. Any number of changes can be made to the buffer area before returning to the main routine (via (CLEAR)); however, the disk sector is not updated unless you write it back (using (@)). You may modify multiple bytes of the buffer with a character string. Simply, in response to the prompt for a new value of a byte in the edit mode, reply with a -1. Then you will be prompted for a character string input.

You have really got to try it to understand it. Just do not practice on an important disk until you have mastered the process. A word of caution, until you have really got it going, do not mess with track 17, sectors 2-11. You could destroy your directory. However, once mastered (along with pages 57-59 of your disk system owner's manual), you can do some pretty nifty things. I have used this program to 'unkill' programs and data files (providing that you have not saved anything on the disk since you 'killed' it).

```
10 '[[[ COLORZAP 1.0 3/17/82 ]]]
11 '
12 'INITIALIZATION
13 '
14 CLS
   : INPUT "DO YOU NEED INSTRUCTIONS";A$
   : GOSUB 67
   : POKE 234,2
   : POKE 235,0
   : POKE 238,4
   : POKE 239,32
   : A$="SECTOR"
   : B$="TRACK"
   : CLS
```

```
   : INPUT "TRACK";X
   : INPUT "SECTOR";Y
15 C$=STRING$(32, 175)
   : PRINT @0, C$
   : PRINT @288, C$;
   : POKE 236, X
   : PRINT @320, B$;X;
16 '
17 'MAIN LOOP
18 'ENTRY POINT FOR NO-OP NEXT LINE
19 '
20 POKE 237,Y
   : PRINT @330, A$;Y;
   : IF SW=0 THEN EXEC54892
21 PRINT @384, "<ENT>-EDIT <CLR>-HOLD <@>-WRITE
   <SPC>-SCAN"
   : IF PEEK (341)=223 THEN 32
   : '<+>
22 IF PEEK (343)=223 THEN 33
   : '<->
23 IF PEEK (338)=191 THEN 39
   : '<ENT>
24 IF PEEK (1024)<>175 THEN SW=0
   : CLS
   : POKE 234,2
   : GOTO 15
   : 'ERROR
25 IF PEEK (339)=191 THEN SW=1
   : POKE 234,1
   : '<CLR>
26 IF PEEK (338)=254 THEN POKE 234,3
   : GOSUB 57
   : EXEC54892
   : POKE 234,2
   : SW=0
   : '<@>
27 IF PEEK (240)<>0 THEN PRINT @384, "ERROR TYPE
   ";PEEK (240)
   : POKE 240,0
   : FOR DL=1 TO 500
   : NEXT DL
28 GOSUB 57
   : IF PEEK (345)=247 THEN SW=0
   : POKE 234,2
   : GOTO 21 ELSE 21
   : '<SPC>
29 '
30 'SUBROUTINE CALLED FROM MAIN USED FOR SECTOR
   CHANGE
31 '
32 Y=Y+1
   : IF Y=19 THEN Y=1
   : X=X+1
   : GOTO 34 ELSE 20
33 Y=Y-1
   : IF Y=0 THEN Y=18
   : X=X-1 ELSE 20
34 IF X=-1 THEN X=34 ELSE IF X=35 THEN X=0
35 POKE 236,X
   : PRINT @320, B$;X;
   : GOTO 20
36 '
37 'SUBROUTINE FOR EDIT MODE
38 '
39 RB=1
   : SW=2
   : POKE 234,1
   : GOSUB 57
   : XX=1056
40 IF PEEK (341)=247 THEN XX=XX-32
   : 'DOWN ARROW
41 IF PEEK (342)=247 THEN XX=XX+32
   : 'UP ARROW
42 IF PEEK (343)=247 THEN XX=XX-1
   : 'LEFT ARROW
43 IF PEEK (344)=247 THEN XX=XX+1
   : 'RIGHT ARROW
```

```

44 IF XX<1056 THEN XX=XX+256 ELSE IF XX>1311 THEN
    XX=XX-256
45 XV=PEEK (XX)
    : POKE XX,RND(7)*16+127
    : PRINT @384, "<ENT>-EDIT <SPC> OR <CLR>-RETURN"
    : GOSUB 57
    : POKE XX,XV
46 IF PEEK (339)=191 THEN SW=1
    : POKE 234,1
    : GOTO 21
    : '<CLR>
47 IF PEEK (338)=191 THEN IF RB=0 THEN GOSUB 52
    : ELSE 48 ELSE RB=0
    : '<ENT>
48 IF PEEK (345)=247 THEN SW=0
    : POKE 234,2
    : GOTO 21 ELSE 40
    : '<SPC>
49 '
50 'ROUTINE FOR INPUT OF NEW BYTE VALUES
51 '
52 PRINT @384, ""
    : PRINT @384, "VALUE->";PEEK (XX);" (-1 FOR
    CHR)";
53 INPUT XY
    : GOSUB 63
    : POKE XX,XY
    : RB=1
    : RETURN
54 '
55 'ROUTINE FOR UPDATING, STATUS
56 '
57 IF SW=0 THEN SW$="SCAN"
    : ELSE IF SW=2 THEN SW$="EDIT" ELSE SW$="HOLD"
58 IF PEEK (234)=1 THEN MD$="NO OP" ELSE IF PEEK
    (234)=2 THEN MD$="READ" ELSE MD$="WRITE"
59 PRINT @448, "SWITCH ";SW$;"          MODE ";MD$;
    : RETURN
60 '
61 'ROUTINE FOR ENTERING CHARACTER INSTEAD OF VALUES
62 '
63 IF XY>-1 THEN IF XY>255 THEN XY=255
    : RETURN ELSE RETURN ELSE PRINT @384, ""
    : PRINT @384, "CHARACTER ->";
    : INPUT XY$
    : FOR DL=1 TO LEN(XY$)
    : IF XX-1+DL<1312 THEN POKE XX-1+DL,
    ASC(MID$(XY$, DL, 1))
    : NEXT
    : XY=ASC(XY$)
    : RETURN ELSE XY=ASC(XY$)
    : RETURN
64 '
65 'INSTRUCTIONS
66 '
67 IF LEFT$(A$, 1)<>"Y" THEN RETURN
68 PRINT "THIS PROGRAM IS DESIGNED TO EDIT DISK
    CONTENTS. FIRST YOU WILL BE PROMPTED FOR A
    BEGINNING TRACK AND SECTOR NUMBER. THEN
    YOU WILL ENTER THE MAIN ROUTINE. TO READ
    CONTENTS OF A PREVIOUS OR FOLLOWING SECTOR,
    PRESS '-' OR '+'. TO MOVE";
69 PRINT " SECTORS WITHOUT READ, PRESS <CLEAR>.
    TO WRITE CONTENTS OF SCREEN TO DISK PRESS
    <@>. TO RETURN TO READ MODE PRESS <SPACE>.
    TO ENTER EDIT MODE, PRESS <ENTER>, AND USE
    ARROWS TO POSITION CURSOR TO BYTE TO EDIT."
70 PRINT @480, "PRESS ANY KEY TO CONTINUE ....."
    : A$=INKEY$
    : IF A$="" THEN 70
71 CLS
    : PRINT "PRESS <ENTER> TO PROMPT FOR NEW INPUT
    VALUE. ENTER VALUE OR -1 TO INPUT CHARACTER
    STRING. BOTH<CLEAR> AND <SPACE> WILL RETURN TO
    MAIN ROUTINE WITH PREVIOUS FUNCTION."
72 PRINT @480, "PRESS ANY KEY TO CONTINUE ....."

```

```

: A$=INKEY$
: IF A$="" THEN 72 ELSE RETURN

```

Omega

Robert Sandercott
RR2 Grand Bend
Ontario, CANADA N0M 1T0

The following game, Omega, is designed to run on a 16K Color Computer with Extended Color BASIC. The object of this game is to earn points by 1) shooting the killer satellites, and 2) by landing on the planet.

```

10 '***OMEGA*****
20 '***BY R.SANDERCOTT**
30 '***RR2 GRAND BEND***
40 '***ONT.CANADA*****
45 '**FOR 16K EXTENDED**
46 '*BASIC COLOR COMPUTER
50 CLS
55 PRINT "          ***OMEGA***"
    : PRINT
60 PRINT "INSTRUCTIONS Y/N ?"
65 A$=INKEY$
    : IF A$="" THEN 65
70 IF A$="N" THEN 200
75 CLS
    : PRINT " INSTRUCTIONS:"
    : PRINT
80 PRINT " THE OBJECT OF THIS GAME IS TO EARN POINTS
    BY SHOOTING THE KILLER SATELITES AND BY
    LANDING ON THE PLANET.WHEN YOU LAND ON THE
    PLANET SUCCESSFULLY YOU GET POINTS FOR THE
    AMOUNT OF FUEL THAT YOU HAVE LEFT.YOUR FUEL
    GAUGE IS AT THE";
85 PRINT " TOP OF THE SCREEN.YOU USE EXTRA FUEL
    WHILE FIRING. THE SATELITES WILL FIRE AT YOU AT
    A CERTAIN POINT IN THE GAME.";
    : GOSUB 160
    : PRINT "YOU CAN REFUEL ONCE PER WAVE BY GUIDING
    YOUR SHIP IN BETWEEN THE 2 BARS ON THE RIGHT
    SIDE OF THE";
90 PRINT " SCREEN AND THEN FIRING WHEN IN
    POSITION.TO LAND ON THE PLANET YOU MUST SHOOT
    AT THE PLANET SO THAT YOU CAN LAND IN THE LARGE
    CRATER.WHEN IN POSITION PRESS FIRE.YOU GET AN
    EXTRA SHIP IF YOU DO THIS SUCCESSFULLY."
95 GOSUB 160
100 PRINT "YOU'LL BLOW UP IF YOU RAM THE PLANET OR
    HIT A SATELITE,STAR OR YOUR FUEL BAY.IF YOU
    DAMAGE THE FUEL BAY TOO MUCH YOU'LL EXPLODE
    UPON ENTERING.IF YOU HEAR A LONG TONE IT
    MEANS THAT YOU'RE LOW ON FUEL!"
    : GOSUB 160
105 PRINT "TO DISABLE A SATELITE ALL YOU HAVE TO DO
    IS DESTROY IT'S NERVE CENTER WHICH IS
    THE CENTER PORTION OF THE SATELITE.you
    dont' have to destroy the whole
    satelite.you get 50 points for disabling a
    satelite and"
106 PRINT " bonus points if you destroy all of them!"
    : GOSUB 160
110 FOR X=1 TO 100
    : PRINT "***GOOD LUCK*** ";
    : SOUND 100, 1
    : NEXT X
159 GOTO 200
160 INPUT "PRESS ENTER";A$
170 CLS
    : RETURN
200 POKE 65495,0

```

```

210 DIM D(8), D1(8), S(16), C(16), R(50), R1(50),
    EX(10)
220 PMODE4, 1
    : SCREEN 1, 1
    : PCLS
230 DRAW "BM100,100;U6;R4;D4;R4;H4;F4;R6;F1;G1;L12"
240 DRAW "BM200,100;H4;E4;F4;G4"
250 PAINT (200, 94), 5, 5
260 GET (196, 92)-(204, 100), D
270 GET (196, 52)-(204, 60), D1
280 FOR X=1 TO 10
290 PSET(RND(10)+100, RND(10)+150, 5)
    : NEXT X
300 GET (100, 150)-(110, 160), EX
310 GET (100, 94)-(116, 100), S
320 GET (150, 94)-(166, 100), C
330 U2=0
    : H9=130
    : K=0
    : U1=0
    : T1=6
340 PMODE 4, 1
    : SCREEN 1, 1
    : PCLS
    : H=0
350 CIRCLE (125, 160), 18, , .65
360 CIRCLE (127, 192), 130, , .4
370 CIRCLE (160, 166), 5
380 PAINT (160, 160), 0, 5
390 PAINT (130, 190), 5, 5
400 DRAW "BM50,0;D5;R100;U5;L100"
410 L1=1
420 FOR X=1 TO 50
430 R=RND(256)
    : R1=RND(150)
440 PSET(R, R1, 5)
450 NEXT X
460 O=0
    : H9=H9-10
470 T=RND(5)+T1
    : FOR X=1 TO T
480 R(X)=RND(230)+20
    : R1(X)=RND(120)+15
490 PUT (R(X), R1(X))-(R(X)+8, R1(X)+8), D
500 NEXT X
510 DRAW "BM255,100;L15;U4;R15;D20;L15;D4;R15;U4"
520 PAINT (254, 118), 5, 5
530 PAINT (254, 99), 5, 5
540 CIRCLE (20, 20), 10
550 PAINT (20, 20), 5, 5
    : SOUND 1, 10
560 PAINT (20, 20), 0, 0
570 A=20
    : A1=10
580 LINE (50, 4)-(150, 4), PRESET
590 J=JOYSTK(0)
    : J1=JOYSTK(1)
600 B=(J-31)/5
    : B1=(J1-31)/5
    : Q=-A/23
    : Q1=-A1/18
610 A=INT(A+B+Q+6.3)
    : A1=INT(A1+B1+Q1+7)
620 PUT (A, A1)-(A+16, A1+6), S
630 IF PPOINT(A, A1+7)=5 OR PPOINT(A+16, A1+7)=5 OR
    PPOINT(A, A1-1)=5 THEN GOTO 790
640 H=H+.5
    : IF H>H9 AND RND(7)=2 THEN GOSUB 1180
650 P=PEEK(65280)
    : IF P=126 OR P=254 THEN GOSUB 700
660 IF H>400 THEN GOSUB 1080
670 LINE (50, 4)-(H/4+50, 4), PSET
680 PUT (A, A1)-(A+16, A1+6), C
690 GOTO 590
700 LINE (A+16, A1+5)-(255, A1+5), PSET
710 IF 114<A<119 AND A1>159 THEN GOTO 930

```

```

720 H=H+1
730 IF O=0 AND A>235 AND A1>100 THEN GOSUB 1280
740 PLAY "L255;12"
750 IF H>300 AND L1=1 THEN GOSUB 770
760 LINE (A+16, A1+5)-(255, A1+5), PRESET
    : RETURN
770 SOUND 20, 20
780 L1=0
    : RETURN
790 GOSUB 1480
    : K=K+1
    : IF K>2 THEN 810
800 GOTO 570
810 GOSUB 1030
820 PLAY "L4;1;3;2;4;1;2"
830 SCREEN 0, 1
    : CLS
840 PRINT "YOU HAVE LOST ALL YOUR SHIPS"
850 U2=U1+INT(400-H)
860 PRINT "YOUR SCORE-";U2
870 PRINT "GAME OVER"
880 GOSUB 1350
890 PRINT "PLAY AGAIN Y/N"
900 J$=INKEY$
    : IF J$="" THEN 900
910 IF J$="Y" THEN GOTO 330
920 END
930 GOSUB 1030
    : PLAY "L6;7;8;6;9;10"
940 SCREEN 0, 1
    : CLS
950 PRINT "CONGRATULATIONS YOU MADE IT"
960 U1=U1+250+INT(400-H)
970 PRINT "YOUR SCORE-";U1
980 K=K-1
990 PRINT 3-K;"-SHIPS LEFT"
1000 PRINT
    : PRINT "GET READY TO GO AGAIN"
1010 FOR X=1 TO 3000
    : NEXT X
1020 T1=T1+2
    : GOTO 340
1030 FOR X=1 TO T
1040 IF PPOINT(R(X), R1(X)-4)=0 THEN U1=U1+25
1050 NEXT X
1060 IF U1=X*25 THEN U1=U1+500
    : PLAY "5;5;5"
1070 RETURN
1080 REM
1090 GOSUB 1480
1100 SCREEN 0, 1
    : K=K+1
    : H=0
1110 CLS
    : PRINT "OUT OF FUEL!"
1120 PRINT "YOU TOOK TOO LONG!"
1130 FOR X=1 TO 2000
    : NEXT X
1140 H=0
1150 PMODE 4, 1
    : SCREEN 1, 1
1160 GOTO 570
1170 PMODE4, 1
    : SCREEN 1, 1
1180 FOR X=1 TO 2
1190 X1=RND(T)
1200 IF PPOINT(R(X1)+4, R1(X1)+4)=5 THEN 1230
1210 NEXT X
1220 RETURN
1230 P1=RND(10)
1240 LINE (R(X1)+4, R1(X1)+5)-(A, A1+P1), PSET
1250 SOUND 200, 10
1260 LINE (R(X1)+4, R1(X1)+5)-(A, A1+P1), PRESET
1270 IF P1=1 THEN 790 ELSE RETURN
1280 IF O=1 THEN GOSUB 790
    : RETURN

```

```

1290 IF PPOINT(254, 98)=0 THEN GOSUB 790
: RETURN
1300 IF PPOINT(254, 118)=0 THEN GOSUB 790
: RETURN
1310 O=1
: SOUND 250, 90
1320 H=0
1330 LINE (50, 4)-(450, 4), PRESET
1340 RETURN
1350 REM
1360 PRINT "****HIGH SCORES****"
1370 PRINT
1380 IF U2>U(1) THEN 1460
1390 IF U2>U(2) THEN 1470
1400 IF U2>U(3) THEN U(3)=U2
1410 PRINT "#1. -----";U(1)
1420 PRINT "#2. -----";U(2)
1430 PRINT "#3. -----";U(3)
1440 RETURN
1450 RETURN
1460 U(3)=U(2)
: U(2)=U(1)
: U(1)=U2
: GOTO 1410
1470 U(3)=U(2)
: U(2)=U2
: GOTO 1410
1480 REM EXPLOSION
1490 H=0
1500 PUT (A, A1)-(A+10, A1+10), EX
1510 FOR X=1 TO 3
1520 SOUND X*20, 1
1530 NEXT X
1540 FOR X=1 TO 500
: NEXT X
1550 RETURN

```

```

250 B=(320-(A(X)*32))+(A1(X)*2+2)
260 D=A1(X)
270 X$=STRING$(D,"-")
280 PRINT @B,"X",
290 PRINT @B+2,X$(D);
300 X=X+1
: IF X<L THEN 250
310 PRINT
320 IF L>1 THEN PRINT @384,"TRY ";G$ "G1$
330 PRINT @448,"VERTICAL,HORIZONTAL";
: INPUT A(L),A1(L)
340 IF A(L)=R AND A1(L)=R1 THEN 450
350 IF L=4 THEN 600
360 SOUND 240,3
370 IF A(L)=R THEN G$=""
380 IF A(L)>R THEN G$="DOWN"
390 IF A(L)<R THEN G$="UP"
400 IF A1(L)=R1 THEN G1$=""
410 IF A1(L)>R1 THEN G1$="LEFT"
420 IF A1(L)<R1 THEN G1$="RIGHT"
430 L=L+1
440 GOTO 240
450 CLS
: PLAY "L10;9;8;7;9;9;10"
460 F=F+1
470 PRINT "YOU GUESSED IT!"
480 PRINT "IT WAS-"R"-R1
490 PRINT "IT TOOK YOU-"L" MOVES"
500 PRINT "YOUR SCORE IS-"F"/"L1
510 PRINT
520 PRINT "PLAY AGAIN? Y/S/N"
530 FOR X=1 TO 3
540 A(X)=0
: A1(X)=0
: NEXT X
550 G$=""
: G1$=""
560 A$=INKEY$
: IF A$="" THEN 560
570 IF A$="Y" THEN 140
580 IF A$="S" THEN 130
590 END
600 CLS
: PLAY "L5;5;4;3;2;L1;1"
610 PRINT "YOU WIMP!IT WAS-"R"-R1
620 PRINT "YOUR SCORE IS-"F"/"L1
630 PRINT
640 GOTO 520
650 DATA -----
: -----
: -----

```

Luck

Robert Sandercott
RR2 Grand Bend
Ontario, CANADA N0M 1T0

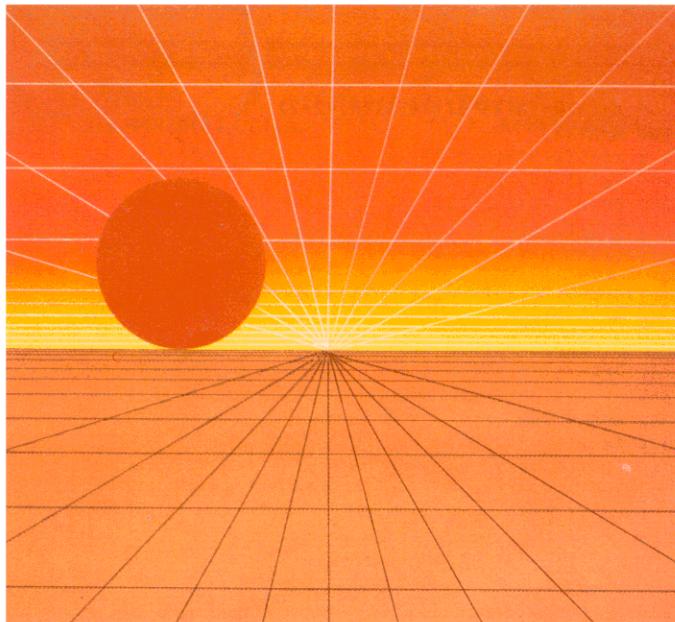
The following game, Luck, is designed to run on a 16K Color Computer with Extended Color BASIC. The object of this game is to guess the correct position of the 'mystery' X,Y coordinate.

```

1 '***LUCK*** BY R.SANDERCOTT
2 'RR2 GRAND BEND ONTARIO
3 'CANADA N0M 1T0
4 'TYPE IN VERTICLE CO-ORDINATE A COMMA THEN A
: HORIZONTAL CO- ORDINATE.OBJECT IS TO GUESS
: THE CORRECT POSITION
100 F=0
: L1=0
110 FOR X=1 TO 9
120 READ X$(X)
: NEXT X
130 F=0
: L1=0
140 R=RND(9)
: R1=RND(10)
150 L1=L1+1
160 L=1
170 CLS
180 PRINT
190 FOR X=9 TO 1 STEP -1
200 PRINT X;" - - - - -"
210 NEXT X
220 PRINT" 1 2 3 4 5 6 7 8 9 10"
230 IF L=1 THEN 310
240 X=1

```





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