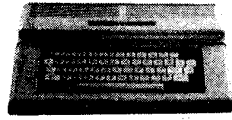


# COCO-ADS

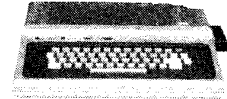


THE COLOR COMPUTER USERS MAGAZINE

JUNE, 1986

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SOFTWARE REVIEW

PROBALOTO

Reviewed By:

Harrison Reno Chase

As I write this, in Ohio the current 44 number Super Lotto jackpot is eight million dollars. With this kind of money up for grabs, I think it's worth spending a few bucks for a program that will give you the edge over other lottery players. Probaloto is that program. Probaloto is the PROBABILITY LOTtery program. It provides a mathematical analysis of past chosen numbers, then selects the numbers that will most likely be chosen next time.

I'm sure that you know the feeling. You're playing BINGO with hundreds of other players. Only one number, B-4, is needed to win the new LAY ZEE BOUY recliner. B-4 hasn't been called all night. It's got to be called next.

That's the basic idea behind PROBALOTO. The more times that a certain number isn't called, the more likely it is to be called in the next drawing.

The program that the customer receives is supplied on a Tandy diskette. It's a homemade copy made with the Sugar Software (GROAN) anti piracy program. This means NO Usable BACKUPS, folks, at least not by normal means. Luckily, the good folks at COMPUTIZE, inc have a program called SPIT N IMAGE which will make an usable copy for you. The programmer of PROBALOTO should be sent to the Dungeons of Daggorath and forced to clean up after the creatures for using such anti backup techniques. Backups are important to a user who has just spent many dollars on a diskette, only to find that his dog has just used his only good copy for a chewie. Com'on Gary, trash the Piratector.

After carefully inserting the diskette (wouldn't want to hurt our only good copy) you can start the program by typing DOS or LOADM"LOTTERY". There is also a provision for users of JDOS to use the program. There is also a tape (16K) version available. The disk version requires 32K of memory.

After a pretty title page, you are asked a few questions about your state lottery. This means that PROBALOTO can be used for the lottery in any state. You are also asked about using your printer and for its baud rate.

After this, you are given the main menu.

A PICK 3 GAME  
B PICK 4 GAME  
C LOTTO (40 NUMBERS)

D WEIGHTED SELECTIONS

S SET UP DATA FILE

P PRINT DATA FILES

R RESET LOTTERY PROGRAM

E TO END THE PROGRAM

Pick 3 Game = This choice is the equivalent of PRINTRND(999) in basic

Pick 4 Game = Again, this is nothing special. PRINTRND(9999) in basic would have been the same thing.

Lotto = This option takes 6 (or whatever you chose) RND(40)'s and prints them in order.

Weighted Selections = AHH, this is where the beauty of the program shines through. No RND statements here. This section gives you numbers chosen based on the number of times that numbers have been chosen in the past. Past lottery numbers are added to the DATAFILES, then recalled for later use by PROBALOTO. The program then makes choices based on the past results of lotterys.

Set up Data Files = This option allows you to build a data file by entering past called numbers obtained from your local lottery

agent. Once entered, only new numbers need to be entered.

Print Data Files = This will put the data files on paper, if you have a printer. Unfortunately, no type of formatting is used and the results tend to waste a lot of paper.

Reset Program = Takes you all the way back to the start of the program.

End Program = Displays a GOOD LUCK message for you, then cold starts the COCO.

What I think of the program>> Well, to be perfectly honest, it didn't seem to work for me. I entered the daily number for a month with no winning results. I'm not sure how many numbers have to be entered before the program actually works. I thought 30 might have some effect, but nothing. Perhaps the program is supposed to be a novelty or something. It might be something like psychic powers. If you believe, they work. If not, they don't work. If Mr. Olander was really confident in his method, he might consider offering some type of refund if you don't win the lottery after so long. I'm sorry, but I just can't see paying good money for a program that doesn't seem to be able to do what it's supposed to do.

(PROBALOTO, available from Gary Olander, 322 Haymarket Pl., Gahanna, Ohio 43230, 16K ECB tape or 32K ECB disk, \$19.95)

# HELP BOARD

I need expert technical help from someone with both a Radio Shack 64k COCO2 computer and a commodore 64 computer. I have six wheeling lottery programs on a commodore 64k disk which i need converted to a disk for a 64k coco 2 disk. I will send the commodore 64k wheeling disk and a blank formatted disk for hte 64K coco2. if interested call collect, (804) 384-7530, or write to:  
Earl La Jesse Foster  
4715 Boonsboro Rd a/121  
Lynchburg, Va 24503

I need help with one of Radio Shack's program. it is called Hi-Res print utilities. It will load and I type 'CLEAR 200,14848" then Exec. It will not print a picture to the printer. I have a 64K extended cassette recorder and dmp-105 printer. Any help please send to: Jason Murson  
3002 Liberty Tree Ln  
Tuscon, Az 85741

I have the game Pyramid from Radio Shack. I need to know how to get out of the maze? please help. Also do you need the magazines, silver, gold, diamonds for anything????  
Jason Munson  
302 Liberty Tree Ln  
Tuscon, Az 85741

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

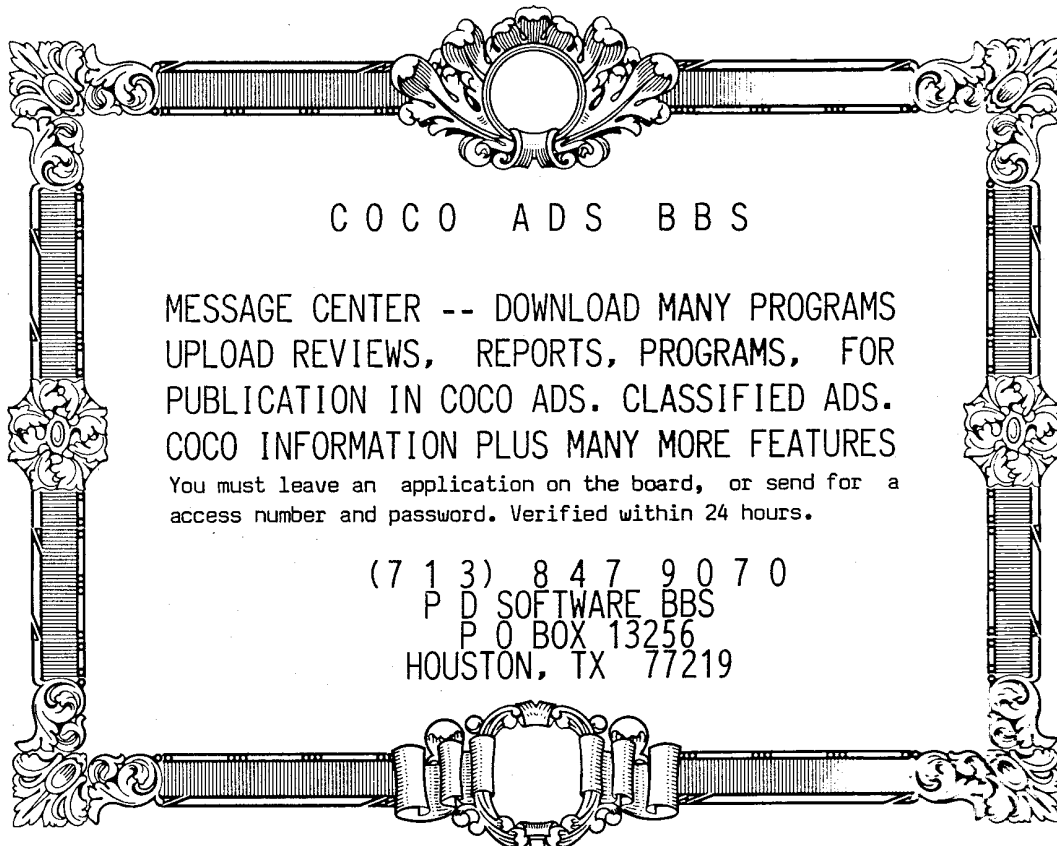
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## HELPFUL HINTS

COMMAND: PEEK(188)  
RESULT: Returns a 14 if disk system else returns a 6  
REMARKS: Can be very useful to determine if you have a disk system and can be very useful when using data files

COMMAND: EXEC 43304  
RESULT: Clears screen and homes cursor  
REMARKS: Same as 'CLS' command

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The Program of the Month  
by Eric G. Robichaud

With the month of June comes Summer, vacations, and the start of a two month school vacation for young people all across the country. At first, vacation is seen as "wicked decent", "ace", or whatever other "valley" term is "in". But after the first few weeks, things usually begin slowing down, and "I'm bored" and "There's nothing to do" dominate a child's vocabulary.

The annually occurring scenario described above is the motivation behind this month's program creation. "CONQUEST" is a strategy game played on a high-res game board. This is a three player game in which 27 countries are divided up randomly, with armies allocated to each. At first, each player makes a note of which countries he owns, then sets out to conquer the others. At the start of each game it is a bit difficult to remember which countries one owns, since they aren't displayed on the game board. After 5 or 10 minutes of play, though, one becomes familiar with the current set-up. The STAT command is used to find out who owns what countries and how many armies are located there. When the command is entered the computer switches to text screen and lists the country (by number), who owns it, and how many armies the person has there. This command does not take up a turn, so one can enter STAT as often as he wishes.

CHECK is used to perform the same function as STAT, but allows the player whose turn it is to get the information on one particular country without displaying the data for all of the countries. Sometimes this is strategically advantageous.

The PASS command, as it suggests, allows play to pass to the next person. The QUIT command, though, does not allow one player to resign, but rather ends the game altogether! When only one person wants to quit I simply enter PASS at the player's turn.

The OPTION command tells the player what countries one may ATTACK or MOVE armies to from a specified country. This is helpful in determining which areas one can move to from an island, for example.

ATTACK is used, obviously, to attack a specified country from another, specified, country. To attack, the country one is attacking from must have more than one army, and must be owned by the attacker, of course.

The MOVE command is used to move a specified number of armies from one country to another. The move should not leave a country with no armies. Both countries must

be owned by the current player. A note about the ATTACK and MOVE commands: the two countries involved in the action must be in a contiguous area. You cannot attack Canada from the Middle East, for example. It is assumed that armies attack and travel on foot; etc. using conventional methods (no ICBM's).

For those of you interested in how the program works, the following is a brief explanation. If it were not for Lucien Berthiaume, a good friend of mine, I would still be typing in the data for the map. Lou co-authored this program with me, helping me especially with the tedious coding of the high-res map. The first program is the data for the high res map, and consists of the x and y coordinates for some two thousand pixels (blocks). When run, the first program draws the map, which takes a couple of minutes, then saves the map to disk so it can be loaded back in by the main program. The advantage to this is that after the first time, the map can be quickly loaded, in a matter of seconds. This is what happens: the entire block of memory containing the map is saved to disk as a machine code file, then reloaded as one big block later on. This is done at the end of the first program, and towards the beginning of the second.

To write and input on the graphics screen, Lou and I used subroutines for inputting and printing, and used an array to hold the strings for the draw command for the character set.

Basically, the subroutines in the main program are documented, but if you have any specific questions, just "drop a line" and I'll see what I can do. I hope you find the program entertaining, and maybe even pick up a few things. Both listings are long, so as usual I suggest a copy of CoCo Ads On Tape/Disk or send \$5 and a SASE to me at 10 Stoneham Drive Woonsocket, RI 02895. Questions/comments referring to past articles/programs are also welcome. Include a SASE for reply. 'Till next time...

(NOTE FROM THE EDITOR) THIS PROGRAM IS WELL WORTH THE TIME TO PUNCH IN AND RUN. A VERY WELL DESIGNED PROGRAM.

International Color Computer Club Library now has back issues of its Newsletters PLUS a cassette with the programs that were in them. Each newsletter has many articles, reviews, and programs.

NEWSLETTER	PAGES	PROGRAMS
1-3	24	PIVADERS (G,K) SCRPRINT (U,P) SHORTDAT (F,C) BLOCK (G,J) BUBLSORT (U)
1-4	24	FREEWAY (G,J) RANSTAR (G) DRAWING (G,K) MEMBERS (BFPD) LEDGER (BFP) BUSIN (F,F,P)
1-5	32	SKETCH (G,K) AREAVOL (U,E) TUNBOX (G) DISKPEEK (U,D) DIRPROM (U,D) SLOTS (G,K)
1-6	32	PHOLIST (F,C) PERCALEN (U,B) SCIMKER (G,K)
2-1	56	INVEN16K (B,D,P) METRIC (U,B) CGPDEMO (U,P) LORESPT (U,P) WORDS (G,K) TITLER (B,K) BACH (E,M)
2-2	80	40COLL (B,P,D) MONTHDUE (FDP) SALES1.9 (BDP) VIDTEX (U,P) 5 FILE (FDPC) CAGE (G,J) WIDTH (U,P) PRICEQ (BFPD) CONVERT (B,K) REFLEX (G,K) RANDGRAF (G) GR DS1&2 (G) MAZE2 (G,J) TAPEINVI (FCP) CHKWRITE (B,P) MASH (M) HI DOT (U) SQUARGRA (E) GAMES (G,K) FIGURES (G,E) FINDWORD (G,P) FORESTRY (B,P)
2-3	80	TAPEIN1 (FCP) BASSXREF (U,C) CMERGE (U,C) CKBANKST (B,P) TICOTICO (M) FOURIER (U,C) CAT (UDP) COLRTRAP (G,K) CLOCK (E,K) ATACMAN (G,J)
2-4	80	CLBLPRIN (U,P) LOTTO (G) TELLTIME (E,M) ARTHUR (E,M) SEE (U,D) COPYCAM (B,K) CAMERA (B,K)
2-5	80	ATOCCMND (E,D) DTOFCMND (E,D) GTOICMND (E,D) DISKDIR (U,D) SOCCER (G,J) TUTORIAL (E) CKANAL (FDP) CLRCOUNT (E) RVWRTR (UCP) NEWQUIZ (E,P) CALC (U,E) ASTERIOD (G,K)
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International Color Computer Club 119 County Fair Houston, Tx 77060

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1 *****
2 *           CONQUEST           *
3 *   BY: ERIC G. ROBICHAUD     *
4 *   AND LUCIEN BERTHIAUME     *
5 *   COPYRIGHT (C) 1986       *
6 *   PROGRAM PART #1          *
7 *****
8
9 PCLEAR8
10 PMODE 4,1
11 PCLS1
12 FORW=1TO1575:READ X,Y:PSET(X,Y,
0):NEXTW:LINE(46,58)-(46,65),PRESE
T:LINE(78,173)-(153,173),PRESET:LI
NE(127,116)-(138,105),PRESET:LINE(
143,67)-(143,83),PRESET
13 LINE(139,105)-(149,115),PRESET:
LINE(158,108)-(167,100),PRESET:LIN
E(161,86)-(167,92),PRESET:LINE(179
,55)-(181,86),PRESET:LINE(212,59)-
(212,84),PRESET:LINE(213,140)-(213
,160),PRESET
14 LINE(214,149)-(236,149),PRESET:
LINE(236,149)-(236,155),PRESET
15 GOTO 66
16 DATA26,73,27,73,28,73,29,72,30,
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76,166,77,66
26 DATA77,72,77,77,77,78,77,79,77,
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 55 DATA199,106,199,150,199,156,199

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 the Disk commands.

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236,56  
65 DATA 236,58,237,55,237,56,238,5  
5,236,57,230,74  
66 SAVEM"CONQUEST.MAP",3584,9728,3  
584

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10 *****
20 *          CONQUEST          *
30 * BY ERIC G. ROBICHAUD *
40 *          AND              *
50 * LUCIEN BERTHIAUME *
60 * COPYRIGHT (C) JAN 86 *
70 *****
80
90 P=0:TI=1:DIM A(3,27),C(27),CL(3
),W$(48),NA$(27),U(27,4),AA(27),CQ
(27),PQ(3),RA(4),RR(4)
100 FOR D=1TO3:PQ(D)=9:NEXT
110 PMODE 4,1
120 SCREEN 1,1
130 IF USING CASSETTE, CHANGE SAV
EM IN FIRST PROGRAM AND LOADM IN T
HIS PROGRAM TO CSAVEM AND CLOADM
140 LOADM"CONQUEST.MAP":MAP MUST
BE SAVED(M) FIRST
150 -----CHARACTER ARRAY-----
160 W$(18)="BM+3,0;U4E2F2D2L4R4D2"

170 W$(19)="BM+3,0;R3L3U6R3FDGL3R3
FDGBR"
180 W$(20)="BM+3,0;BUFR3L3HU4ER3BD
6"
190 W$(21)="BM+3,0;R3L3U6R3FD4GBR"

200 W$(22)="BM+3,0;R4L4U3R3L3U3R4B
D6"
210 W$(23)="BM+3,0;U3R3L3U3R4BD6"
220 W$(24)="BM+3,0;BUFR2EUHLBL2D2U
4UR3BRBD6"
230 W$(25)="BM+3,0;U6D3R4U3D6"
240 W$(26)="BM+3,0;R4L2U6L2R4BD6"

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250 W$(27)="BM+3,0;BUFR2EU5BD6"
260 W$(28)="BM+3,0;U6D3RE3G3F3"
270 W$(29)="BM+2,0;BRBU6D6R4
280 W$(30)="BM+3,0;U6F2E2D6"
290 W$(31)="BM+3,0;U6DF2F2DU6BD6;"

300 W$(32)="BM+3,0;BUU4ER2FD4GL2HF
BR3"
310 W$(33)="BM+3,0;U6R3FDGL2BD3BR3
"
320 W$(34)="BM+3,0;BUU4ER2FD4GL2HF
R2EHF2BL"
330 W$(35)="BM+3,0;U6R3FDGL3R2F2D"

340 W$(36)="BM+3,0;BUFR2EUHL2HEUR2
FBD5"
350 W$(37)="BM+3,0;BU6R4L2D6BR2"
360 W$(38)="BM+3,0;BU6D5FR2EU5BD6"

370 W$(39)="BM+3,0;BU6D2FD2FEU2EU2
BD6"
380 W$(40)="BM+3,0;BU6D6E2F2U6BD6"

390 W$(41)="BM+3,0;UE4UBL4DF4D"
400 W$(42)="BM+3,0;BU5UDF2E2UDG2D3
BR2"
410 W$(43)="BM+3,0;BU6R4DG4D1R4"
420 W$(44)="BM+2,0;C0;U6RD6RU6RD6R
U6D6BL7C1"
430 W$(1)="BM+4,0;BRREU4HLGD4DBRBR
BR"
440 W$(2)="BM+4,0;BRU6GBD5BR3"
450 W$(3)="BM+4,0;UE3UHLGDD4DR3"
460 W$(4)="BM+3,0;R3E1U1H1E1U2L4BD
3BR1R1BD3BR2
470 W$(5)="BM+4,0;BR2U6G2D1R3BD3"
480 W$(6)="BM+3,0;BR1R2E1U2H1L2U2R
3L3BD5D1BR3"
490 W$(7)="BM+4,0;BR1R1EUHLGDU3E2R
BD4DBD"
500 W$(8)="BM+4,0;U2E2U2L3R4BD6
510 W$(9)="BM+4,0;BRREUHEUHLGDFGDB
D1BR3
520 W$(10)="BM+4,0;R1E2U3HLGDFR2DG
2LBR3"
530 W$(11)="BM+4,0;BRRULBU3URDBD4B
R"
540 W$(12)="BM+4,0;BREULBU2RULDBD4
BR2"

550 W$(13)="BM+3,0;BR3H3E3BR1BD6
560 W$(14)="BM+4,0;BU2R3BUL3BD3BR3
"
570 W$(15)="BM+3,0;BR1E3H3BD6BR2"
580 W$(16)="BM+4,0;BR2BU2UEUHLGDBD
4BRBR"
590 W$(17)="BM+4,0;BRREU3HLGDD2RNG
R2DBD"
600 '----LABEL COUNTRIES-----
610 DRAW"BM140,104;C0":DRAW W$(2):
DRAW"C1;"
620 DRAW"BM220,148;C0":DRAW W$(3):
DRAW"C1;"
630 DRAW"BM36,65;C0":DRAW W$(4):DR
AW"C1;"
640 DRAW"BM205,97;C0":DRAW W$(5):D
RAW"C1;"
650 DRAW"BM201,155;C0":DRAW W$(6):
DRAW"C1;"
660 DRAW"BM215,65;C0":DRAW W$(7):D
RAW"C1;"
670 DRAW"BM176,101;C0":DRAW W$(8):
DRAW"C1;"
680 DRAW"BM71,144;C0":DRAW W$(9)
690 DRAW"BMB9,53":DRAW W$(10)
700 DRAW"BM149,147":DRAW W$(2):DRA
W W$(1)
710 DRAW"BM121,101":DRAW W$(2):DRA
W W$(2)
720 DRAW"BM128,77":DRAW W$(2):DRAW
"BM-2,0":DRAW W$(3)
730 DRAW"BM145,74":DRAW W$(2):DRAW
W$(4)
740 DRAW"BM163,83":DRAW W$(2):DRAW
W$(5)
750 DRAW"BM187,78":DRAW W$(2):DRAW
W$(6)
760 DRAW"BM128,128":DRAWW$(2):DRAW
W$(7)
770 DRAW"BM109,47":DRAW W$(2):DRAW
W$(8)
780 DRAW"BM53,68":DRAWW$(2):DRAWW$(
9)
790 DRAW"BM50,152":DRAWW$(2):DRAWW
$(10)
800 DRAW"BM42,125":DRAWW$(3):DRAWW
$(1)
810 DRAW"BM45,108":DRAW W$(3):DRAW
W$(2)

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820 DRAW"BM74,104":DRAW W$(3):DRAW
W$(3)
830 DRAW"BM52,83":DRAW W$(3):DRAW
W$(4)
840 DRAW"BM71,125":DRAWW$(3):DRAWW
$(5)
850 DRAW"BM229,100":DRAW W$(3):DRA
W W$(6)
860 DRAW"BM215,157":DRAW W$(3):DRA
W W$(7)
870 DRAW"BM101,163":DRAW W$(3):DRA
W W$(8)
880 N$=" CHECK STAT LIST
MOVE":DRAW"BM1,10;":GOSUB 1880

890 N$=" PASS QUIT ATTACK
OPTION":DRAW"BM1,22;":GOSUB1880
900 DRAW"C1;"
910 LINE (0,26)-(255,26),PRESET
920 '-----SET UP--DISTRIBUTE-----
930 FORX=1TO27:READ NA$(X):FORY=1T
O4:READ U(X,Y):NEXTY:READ AA(X):NE
XTX
940 FORX=1TO27:CQ(X)=1:NEXT X
950 P=1
960 D=RND(27):IF CQ(D)=1 THEN C(D)
=P:CQ(D)=0:M=M+1 ELSE 960
970 IF M=27 THEN 1000
980 P=P+1:IFP=4 THEN P=1
990 GOTO 960
1000 P=0
1010 FORX=1TO27:A(C(X),X)=AA(X):NE
XT
1020 '-----DATA FOR 27 COUNTRIES-
1030 DATA MID-EAST,11,13,14,16,5,N
. AUSTRALIA,4,5,26,0,4,ALASKA,6,18
,0,0,3,ORIENT,2,6,15,25,5,W. AUSTR
ALIA,2,10,26,0,4,KAMCHATKA,3,4,15,
25,5,INDIA,14,15,0,0,3,ARGENTINA,1
9,20,24,0,4,GREENLAND,17,18,0,0,3,
MADAGASGAR,5,16,27,0,4,N. AFRICA,1
,12,16,0,4
1040 DATA EUROPE,11,13,0,0,3,UKRAI
NE,1,12,14,17,5,URAL,1,7,13,15,5,S
IBERIA,4,6,7,14,5,S. AFRICA,1,10,1
1,0,4,ICELAND,9,13,0,0,3,CANADA,3,
9,23,0,4,CHILE,8,20,27,0,4,PERU,8,
19,22,24,5,CENTRAL AM.,22,23,0,0,3
,COLUMBIA,20,21,24,0,4
1050 DATA U.S.,18,21,0,0,3,BRAZIL,
8,20,22,0,4,JAPAN,4,6,0,0,3,S.AUST
RALIA,2,5,0,0,3,ANTARCTICA,10,19,0
,0,3
1060 O=1
1070 N$="DO YOU WANT A KEY CLICK:"
:GOSUB1840:GOSUB1990:IFLEFT$(A$,1)
="Y" THEN O=1:GOTO1690:ELSE O=0:GO
TO1690
1080 '-----ATTACK-----

```

12

```

1090 PA=P
1100 FL=0
1110 N$="FROM WHICH COUNTRY:":GOSU
B1860:GOSUB 1990:CA=VAL(A$):IF CA<
1 OR CA>27 ORCA<>INT(CA) THEN 1110

1120 IFC(CA)=PA THEN 1130 ELSE N$=
"YOU DO NOT CONTROL THAT COUNTRY":
GOSUB1860:FOR D=1TO1500:NEXT D:GOT
O 1760
1130 IF A(PA,CA)=1 THENN$="THERE A
RE NOT ENOUGH ARMIES THERE":GOSUB1
840:FORD=1TO1000:NEXTD:GOTO1760
1140 N$="ATTACK WHICH COUNTRY:":GO
SUB1860:GOSUB 1990:CR=VAL(A$):IFCR
<1 ORCR>27 OR CR<>INT(CR) THEN1140
ELSE PR=C(CR)
1150 IF PR=PA THEN N$="BUT YOU CON
TROL THAT COUNTRY":GOSUB 1840:FOR
D=1 TO 900:NEXT D:GOTO1760
1160 D=1
1170 IF D=5 THEN 1200
1180 IF U(CA,D)=CR THEN 1210
1190 D=D+1:GOTO 1170
1200 N$="YOU CAN NOT ATTACK THAT C
OUNTRY":GOSUB1860:FORD=1TO900:NEXT
D:GOTO 1760
1210 IFA(PA,CA)<3THEN X=1 ELSE IF
A(PA,CA)<4 THEN X=2 ELSE X=3
1220 FORM=1TO4:RA(M)=0:RR(M)=0:NEX
T:C1=0:C2=0
1230 FORM=1TOX:RA(M)=RND(6):NEXTM
1240 IFX=1 THEN1280
1250 FORV1=1 TO 2:FORM=1TO3
1260 IF RA(M)<RA(M+1) THEN BU=RA(M
):RA(M)=RA(M+1):RA(M+1)=BU
1270 NEXTM,V1
1280 IFA(PR,CR)<3 THEN X=1 ELSE IF
A(PR,CR)<4 THEN X=2 ELSE X=3
1290 FORM=1TOX:RR(M)=RND(6):NEXTM
1300 FOR V1=1TO2:FORM=1TO3
1310 IF RR(M)<RR(M+1) THEN BU=RR(M
):RR(M)=RR(M+1):RR(M+1)=BU
1320 NEXTM,V1
1330 FORM=1TO3
1340 IF RA(M)=0 THEN 1380
1350 IF RR(M)=0 THEN 1380
1360 IF RA(M)>=RR(M) THEN C1=C1+1
ELSE C2=C2+1
1370 NEXT M
1380 N$="ARMIES LOST: PLYR "+STR$(
PA)+": "+STR$(C2)+" PLYR "+STR$(PR
)+": "+STR$(C1):GOSUB1860:FORD=1TO1
500:NEXTD
1390 A(PA,CA)=A(PA,CA)-C2:A(PR,CR)
=A(PR,CR)-C1
1400 IF A(PR,CR)<1 THEN A(PA,CR)=I
NT(AA(CR)/2):C(CR)=PA:N$="PLAYER "
+STR$(PR)+": YOU LOST YOUR COUNTRY
":GOSUB1860:FORD=1TO1000:NEXT

```

```

1410 GOTO 1690
1420 '-----MOVE-----
1430 N$="FROM WHICH COUNTRY:":GOSUB
B1840:GOSUB1990:X=VAL(A$):IF C(X)<
>P THEN1540
1440 IFX<1 OR X>27THEN 1430
1450 N$="MOVE TO WHICH COUNTRY:":G
OSUB1840:GOSUB1990:Q=VAL(A$):IF C(
Q)<>P THEN1540
1460 IFQ<1 ORQ>27 THEN 1450
1470 D=1
1480 IF D=5 THEN 1510
1490 IF U(X,D)=Q THEN 1520
1500 D=D+1:GOTO 1480
1510 N$="YOU CAN NOT MOVE ARMIES T
HERE":GOSUB 1860:FORD=1TO1000:NEXT
D:GOTO 1760
1520 N$="NUMBER OF ARMIES TO MOVE:
":GOSUB1840:GOSUB1990:M=VAL(A$):IF
M>INT(A(P,X)-1) THEN N$="YOU CAN
NOT MOVE THAT MANY ARMIES":GOSUB18
60:FORD=1TO460:NEXTD:GOTO 1520
1530 A(P,X)=A(P,X)-M:A(P,Q)=A(P,Q)
+M:N$="DONE":GOSUB1860:FORD=1TO100
0:NEXTD:GOTO1690
1540 N$="YOU DO NOT CONTROL THAT C
OUNTRY":GOSUB1860:FORD=1 TO1200:NE
XTD:GOTO 1760
1550 N$="WHICH COUNTRY:":GOSUB 186
0:GOSUB 1990:X=VAL(A$)
1560 '-----CHECK-----
1570 N$="PLAYER"+STR$(C(X))+ " HAS"
+STR$(A(C(X),X))+ " ARMIES THERE":G
OSUB 1860
1580 FORD=1TO2000:NEXTD:GOTO1760
1590 '-----STAT-----
1600 SCREEN0,0:CLS:PRINT@0,"# PLY
R ARM # PLYR ARM":PRINTSTRIN
G$(32,"-"):PRINT@64,"";
1610 FORX=1TO26 STEP2:PRINTX;TAB(4
);C(X);TAB(10);A(C(X),X);:PRINTTAB
(16);X+1;TAB(20);C(X+1);TAB(25);A(
C(X+1),X+1):NEXTX
1620 PRINT" 27";TAB(4);C(27);TAB(1
0);A(C(X),X);
1630 IF INKEY$=CHR$(13) THEN 1640
ELSE 1630
1640 CLS:SCREEN 1,1:GOTO 1760
1650 '-----LIST-----
1660 CLS:PRINT" # AND CORRESPONDIN
G COUNTRIES":PRINTSTRING$(32,"-");
:FORX=1 TO 26STEP 2:PRINTX;TAB(4);
NA$(X);TAB(16);X+1;TAB(19);NA$(X+1
):NEXTX:PRINT" 27 ANTARCTICA";
1670 IF INKEY$<>CHR$(13)THEN 1670
1680 SCREEN1,1:GOTO1760
1690 P=P+1:IFP>3 THEN P=1
1700 IF PQ(P)<1 THEN 2110
1710 IFFG(P)=0 THEN 1750

```

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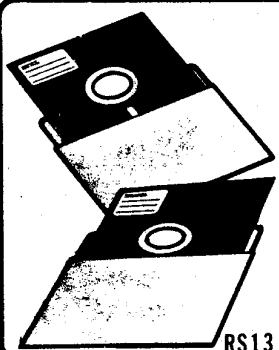
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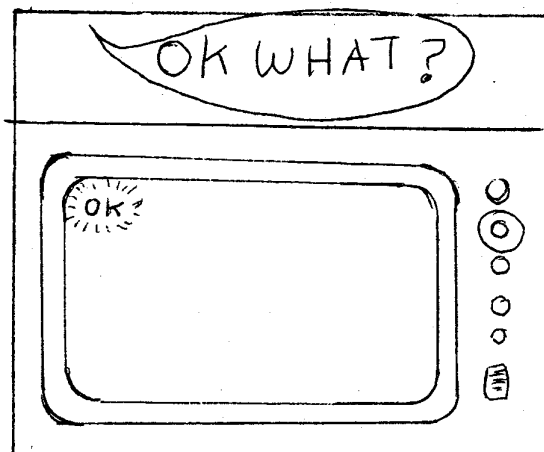
1720 IF TI=<3 AND P=1 THEN TI=TI+1
    ELSE IF P=1 THEN TI=1:GOTO1730
1730 BO=1:GOSUB 2230
1740 '-----COMMAND ROUTINE-----
1750 FG(P)=1
1760 PP$=STR$(P):N$="PLAYER "+PP$+
" COMMAND:":GOSUB 1860:GOSUB 1990
1770 IFA$="ATTACK"THEN 1080 ELSE I
FA$="MOVE"THEN 1420ELSE IFA$="CHEC
K"THEN 1550ELSE IFA$="STAT"THEN 16
00 ELSE IFA$="LIST"THEN1650 ELSE I
F A$="OPTION" THEN 1810 ELSE IFA$=
"PASS" THEN 2160
1780 IF A$="QUIT" OR A$="END" THEN
NEW
1790 SOUND 25,3
1800 GOTO 1760
1810 N$="DATA FOR WHICH COUNTRY:":
GOSUB 1840:GOSUB 1990:AA=VAL(A$):I
F AA<1 OR AA>27 OR AA<>INT(AA) THE
N 1810
1820 N$="COUNTRY "+STR$(AA)+": ":F
OR D=1 TO 4:IF U(AA,D)=0 THEN 1830
    ELSE N$=N$+STR$(U(AA,D))
1830 NEXTD:GOSUB 1840:FOR D=1 TO 1
500:NEXT:GOTO 1760
1840 '? ROUTINE
1850 '-----PRINT-----
1860 LINE(0,183)-(255,191),PRESET,
BF
1870 DRAW "BM0,190;"
1880 FOR C=1 TO LEN(N$)
1890 N1$=MID$(N$,C,1)
1900 N1=ASC(N1$)
1910 IF N1=32 THEN DRAW"BM+6,0;"
1920 IF N1>=48 AND N1<=90 THEN 193
0 ELSE NEXT C
1930 N1=N1-47
1940 DRAW W$(N1)
1950 NEXT C
1960 RETURN
1970 '-----INPUT ROUTINE-----
1980 LINE (0,183)-(255,191),PRESET
,BF:DRAW "BM0,190;"
1990 A$=""
2000 I$=INKEY$
2010 IF I$="" THEN 2000
2020 IFO=1 THEN SOUND125,1
2030 IF I$=CHR$(13) THEN RETURN
2040 N1=ASC(I$)
2050 IF N1=32 THEN A$=A$+" ":DRAW
"BM+7,0;":GOTO 2000
2060 IF N1=8 AND LEN(A$)>0 THEN A$
=LEFT$(A$,LEN(A$)-1):DRAW"BM-6,0;X
W$(44);":GOTO 2000
2070 IF N1>=48 AND N1 <=90 THEN A$
=A$+I$ ELSE 2000
2080 N1=N1-47:DRAW W$(N1)
2090 IF LEN(A$)>30 THEN RETURN
2100 GOTO 2000

```

```

2110 IF PQ(P)=0 THEN 2150
2120 PQW=PQW+1
2130 IF PQW=2 THEN 2170
2140 GOTO 1690
2150 N$="PLAYER "+STR$(P)+": YOU L
OST":GOSUB1840:FORD=1T01500:NEXTD:
PQ(P)=-1:GOTO 1690
2160 N$="OK":GOSUB1840:FORD=1T0500
:NEXTD:GOTO1690
2170 'WINNER
2180 FORX=1T03:IFPQ(X)>1 THEN S=X
2190 NEXT X
2200 N$="PLAYER:"+STR$(S)+" YOU HA
VE WORLD DOMINATION":GOSUB1840
2210 FOR X=1 TO 1500:NEXTX
2220 N$=" HIT =ENTER= TO END":GOS
UB1840:GOSUB1990:PCLS:CLS:NEW
2230 IF TI<>3 THEN 2260
2240 BO=BO+RND(2):IF PQ(P)>12 THEN
BO=BO-1
2250 N$="PLAYER"+STR$(P)+":YOU GET
A BONUS OF"+STR$(BO)+" ARMIES":GO
SUB1840:FORD=1T0900:NEXT:GOTO2270
2260 GOTO 2300
2270 N$="WHERE WOULD YOU LIKE TO P
LACE THEM:":GOSUB1840:GOSUB1990:Z=
VAL(A$):IFZ<1 ORZ>27 ORZ<>INT(Z) T
HEN 2270
2280 IF C(Z)<>P THEN N$="YOU DO NO
T CONTROL THAT COUNTRY":GOSUB1840:
FORD=1T0975:NEXT:GOTO2270
2290 A(P,Z)=A(P,Z)+BO:RETURN
2300 N$="PLAYER"+STR$(P)+":YOU GET
A BONUS OF 1 ARMY":GOSUB1840:FORD
=1T0875:NEXTD
2310 N$="WHERE DO YOU WANT TO PLAC
E IT:":GOSUB1840:GOSUB1990:Z=VAL(A
$):IFZ<1 ORZ>27 OR Z<>INT(Z) THEN
2310
2320 IF C(Z)<>P THEN N$="YOU DO NO
T CONTROL THAT COUNTRY":GOSUB1840:
FORD=1T0950:NEXT:GOTO2310
2330 A(P,Z)=A(P,Z)+1:RETURN

```



THE DISK DOUBLER  
UPDATE  
By Dale Roman

I seem to have hit on a very controversial subject - double siding your diskettes. This article will, I hope, tie up a few loose ends about the last article.

Although I've never had any problems whatsoever, I have some letters that I'd like to share. Some have had problems, and some have come up with other methods of double siding.

LETTER # 1

You are correct about SSDD disks working on both sides, as you said only one side is certified and an occasional bad area might be found. One thing to keep in mind. A single sided drive uses a pressure pad to hold the disk against the head. It can pick up and hold dirt and grime. This can sometimes rub on the original side when the disk is turned upside down, causing loss of data.

Also the jacket liner is designed to trap and hold contaminants. When the disk is turned over, it rotates in reverse of it's original direction and again possibly cause damage. Hint: Never set an unprotected disk down. The bottom side is the used side on a disk. The SS drive head is on the bottom side of the drive.

From Mr. Brian L. Hansen  
315 Roast Meat Hill Rd.  
Killingworth, CT 06417

Letter # 2

Hi Dale,

After reading your article in CoCo Ads, I decided to tell you of my experiences. I had purchased about 20 RS single sided disks and, with a template very much like yours, I double sided all of my disks.

After formatting these, I had 40 sides to work with. No problems. Well, since with a single sided disk, only one side is verified, I felt that a double sided disk would be that much better, since they would have tested both sides.

I bought 10 "Certron", DS, DD disks and proceeded to double side these. Well, they worked okay, but as time went on, any failures I have had has been with the "Certron" DS, DD disks, while the old RS SS DD still keep working fine.

From John C. Burke  
38699 Greenwich Cir.  
Fremont, CA 94536

Letter # 3

Dear Mr. Roman,

I read with interest your article, "HARDWARE HINT Punching your disks", in the April 1985, Issue B5, p35, of COCO ADS, THE COLOR COMPUTER USERS MAGAZINE. I have been making "FLIPPIES" out of my "FLOOPIES" for quite some time now, as you have described, only I have a some what different approach you may be interested in adding to your method.

I made a jig out of a common scrap of board and two small strips of wood.

~~~~~

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THE SIMPLE JIG FOR NOTCHING & PUNCHING HOLES IN FLOPPY DISKS:

Instead of using a template, such as you mention, I simply use another disk and turn it right side up on top of an unnotched disk (which is upside down), placing both disks snugly into the corner marked "CORNER A=B". This lines up the "write protect" notch of the top disk with the lower disk as pictured. Simply (but carefully) cut a matching notch in the lower disk with an Exacto knife blade. Be sure to hold both disks snugly into the corner of your jig so that the two disks will line up exactly.

I use a white pencil to mark down thru the hole of the top disk onto the lower unpunched disk. (Be sure and turn the top disk inside of the cover until the punched hole appears in the hole so you can mark thru to the second disk). Then I usually enlarge the marks so that it is exactly the same as the hole I intend to punch with a hole puncher. I also make a small cardboard protector to place between the disk surface and the sleeve cover I am going to punch. This will protect the surface of the disk if you have an all metal hole puncher, as I do. Then lift the cover enough to get your puncher in between the piece of card board. Naturally, the disk must be flipped over and the opposite side is likewise punched on the reverse side so that the hole in the disk itself can be exposed from either side. I don't know if this is absolutely necessary, but I always do it and it works for me.

If you wish to publish any or all of these additional suggestions, be my guest. However, with the prices of disks falling every day many people may prefer to only use the one pre punched side and simply use another disk. I can even buy disks right here in my home town (on sale) for about 60 cents each without the TVC envelopes which I make myself too. I generally use different colored envelopes for different type material content on the disks (i.e. blue envelopes for business programs, red ones for games, yellow for disk utilities; etc.)

I also use a system of letters for identifying my disks. For example, the first disk in my file is disk "A", then the second one is "B", etc. till I get to "Z" where upon the next disk is "AA" then "AB". This system allows me to identify 702 disks before I have to start on the "AAA"'s.

From Edward J. Salevan  
18 Upland Ave.  
Dover, DE 19901

Illustrations may follow this column.

For those still interested in doubling their disks, The Color Computer Program Exchange is offering a small kit.

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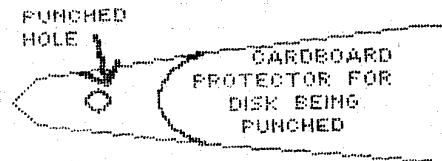
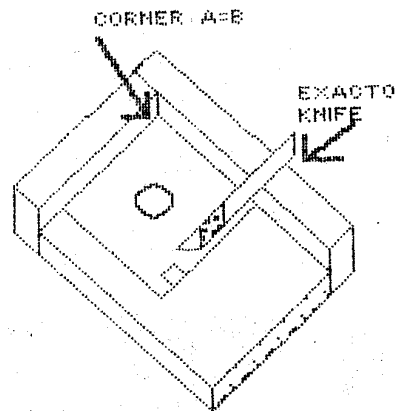
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People/Link  
An Information Service  
Reviewed by: Mike Marcelletti

Before I get into this review on People/Link, I feel I should discuss a information services in general.

There are several popular information services that are of interest to the CoCo owner: Compu-Serve(CIS), Delphi, The Source, and now, the latest People/Link(Plink).All of these services are national, that is, they are available from all portions of the country via local access phone numbers.(Some areas might not have a local number to call, but these areas are the exception rather than the rule). All of these services also have tremendous data bases, with the storage ranging in billions of bytes.

The nature of this information can be quite varied: Compu-Serve, for instance, has such things as Australian kangaroo race results to data libraries for the IBM PC. However, of the information on these systems, the most important services to the CoCo owner are the special interests groups, or SIGs.(On Plink, these are referred to as Clubs).

Within these SIGs, or Clubs, people of common interest can leave messages, read

messages, and access data libraries. In the case of the Science Fiction SIG on CIS, the files can be reviews, articles, and other text.In the case of the files in the data library are typically programs and documentation files, along with a respectable amount of reviews, how-to articles, and other such useful information for the CoCo user. The amount of this information is quite considerable, with over 35 megabytes of data, and a message base of hundreds of messages. CIS easily has the most for the CoCo of any of the information services around. Of course, all of these services cost money, and the rate for CIS is \$6.25 per hour at the evening/weekend rate, with \$1.75 extra for connection through Tymnet or Telenet, within the 48 states. (CIS doesn't have local dial-ups everywhere, sometime you must use one of these services for connection). However, if you live in Alaska or Hawaii, the total rate can be as high as 21.00 dollars an hour, which is a fair amount of money, especially considering that that is the lowest possible rate!(All rates listed are for 300 baud, which is what the vast majority of CoCo owners have).

As for two of the other services mentioned, I frankly have no experience with either The Source or Delphi. From what I gather, The Source has very little for the CoCo. Delphi, on the other hand, has a SIG for the CoCo that is sponsored by Rainbow Magazine, and is growing at a solid pace, although from what I gather, they have only a couple of dozen uploads of new programs into the SIG every month, which gradual increases. This is not a bad rate, but it is hardly astounding. Still, if you are a Rainbow subscriber, and you have a modem, it would be foolish not to try Delphi with the free hour of time Rainbow gives to you. The rate for Delphi is \$6.00 an hour, at either 300 or 1200 baud, with no extra connect charges for using Tymnet or Uninet, but there are some fairly costly charges for CoCo users north of the border, with Canadians paying a fairly stiff rate for DataPac connections. Finally, there is the newest service for computer users, and that is People/Link. People/Link is available through Tymnet and Telenet in the United States, and through DataPac in "TheGreat White North". Through Tymnet and Telenet, there is no extra charge, you pay just one flat rate.(For Canadian users, I suggest you check on the cost of any current fees, there are any, through DataPac. For users in Alaska and Hawaii, there is an extra charge of 10.75 to 8.75 and hour, depending on how much time is used a month.

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No doubt about it, Alaskan and Hawaiian users have the stiffest rates, on any system). The cost for the service is only 4.25 an hour, at either 300 or 1200 baud. However, they run specials every week where, for example, from 9:00 to 10:00 PM local time, a 300 baud user can use the service for only 2.95 an hour! Certainly, no one can say that that is not an incredibly low rate, at slightly less than the lowest possible rates from either CIS or Delphi. Certainly, if cost is a consideration, Plink is the clear winner. Of course, cost is never the only consideration in any purchase. If that were the case we would all own 49.95 TI computers, which of course, is obviously not the case. Therefore, one has to consider the quality and variety available through the various information services. Without question, CIS has the greatest selection to offer the modem user, from a very active and large CoCo SIG, to literally hundreds of other SIGs in dozens of different areas, such as humor, science fiction, and fire fighting. Also, they have an excellent array of information to access from sports results to movie reviews. Truly, there is really something for everyone on CIS. However, you do pay for it, not an outlandish price if you can make a direct call to CIS, but you pay a respectable amount none the less.

Plink, on the other hand, certainly does not have the extremely wide variety that CIS has. Still, it has at least a few dozen Clubs, and major sub-sections to clubs. Plink, in its Computer Club section, has an area set up for the Tandy Color Computer and the MC-10, which they call the Tandy Colors. (Cute way to refer to them). As of this time, the download library is small, but it is growing, and so is the membership in the Club. (Plink also supports most other popular computers, such as the 1/3/4, the laptops, IBM, etc). Along with downloading and messages, it should be mentioned that Plink also supports uploading in the Clubs and Club sub-sections.

Besides computers, Plink offers Clubs in entertainment and games, science fiction and fantasy, trivia, and numerous other areas. They also offer public bulletin boards, which are just for the posting of messages, electronic mail, and "chatting" with other users. People doesn't have the very large selection of information, the number of different types of services that it offers is comparable to CIS.

In the area of customer support, I would have to give the edge to Plink. I have called customer service several times, including once very recently, and they help has always

been prompt, pleasant, and knowledgeable. Also, since it is available toll-free until 10:00 PM (Central) weekdays, and 6:00 pm Saturday, I personally find it very convenient to use.

To sign up for Plink, you can call either by voice or data. Outside Illinois call (Voice) 1-800-524-0100: By modem, call 1-800-826-8855. In Illinois, call (Voice) 312-870-0100, by modem 312-822-9712. When calling by voice, remember to mention you want a Computer Club free Demo Hour. (Actually, you get a credit for 4.25, so if you call during the "Happy Hour", you can get considerably more than an hour out of your free time).

To sign up cost nothing, and you get free time, by just making a free phone call. So, while I would definitely say Plink is a worthwhile service, and very reasonably priced, you can easily find out for yourself whether you want the service. Considering that the modem user has a tremendous amount to gain, at no expense what so ever. Therefore, I recommend that you give Plink a call today, and start Plinking!

Plink does have a few small problems of course, nothing is perfect. The major thing I dislike about Plink is that at this time, you can either pay through check or credit card, but not directly through your bank account. Therefore, you have to send in checks periodically, or else use your credit card. Fortunately, by mid-summer, you will be able to pay directly from your checking account, with no effort.

Another thing I don't like about Plink is its way of doing uploads. While uploads are not difficult to do, the way they are done is a bit cumbersome. (There is a file in one of the data libraries in the Computer Club that gives complete information on doing uploads).

#### SOFTWARE REVIEW

#### THE COCO KEYBOARD

Reviewed by: Eric Robichaud

One of the main reasons I purchased a replacement keyboard for my CoCo, other than for the "professional" look and feel, was to gain the benefits of the four function keys which aren't found on the original keyboard. Since the CoCo isn't designed to use the four extra keys, a short software program must be run to tell the computer what to do when one of these keys is pressed. THE COCO KEYBOARD by Spectrum Projects is one of these such programs.

This program is supplied on a disk containing a "boot" program which asks you what kind of system you have, then loads in the main program that would work with your system (16k or 32/64k). On the HJL-57 and Micronix keyboards, the four keys are programmed as followed: f-1 "dumps" the text screen to a printer, f-2 sets the computer for 9600 BAUD serial I/O operations (after being released/unlatched), f-3+shift executes a BASIC "LIST" command, and f-4+shift issues a cold-start. On a DELUXE COCO keyboard, the four keys are ALT, CTRL, F1+SHIFT, and SHIFT+F2, and perform the same four functions above, respectively.

After reading the manual and running the program, the first thing I noticed was that there was no repeat key, a function that I was sure would be included. The next fact that struck me was that all of the keys were configured to perform functions that could easily be executed by a simple BASIC command or two. For example, f-3 LISTs a BASIC program. It is just as easy to type "LIST" as it is to hit the key. Also, f-4 performs a cold-start. A cold-start is a re-initialization of the computer, which is equal to turning the computer off and starting over again, which can easily be done through two quick commands (POKE 113,0:EXEC 40999). Besides the fact that a cold-start can be achieved quickly and easily, having that key there scares me. After testing the key and watching the system reset, I began to have nightmares of three hours worth of programming lost when I reached for the right shift key and accidentally hit f-4.

Whether or not these four functions are of value is to be left up to each person to decide for themself. For someone like myself who does a lot of programming, I find no need for these functions since it is just as easy for me to type in the command. Also, I can't use the f-2 key, which configures the CoCo to send information to a printer at 9600 BAUD, since my printer only operates at 600 or 1200 BAUD.

I am sure there are those who will find this program useful, but my suggestion to Spectrum Projects is to sell this program as a utility package with a few other programs like they do with their "64K DISK UTILITIES" package. Doing either this or offering several variations of the program (different combinations of functions) on the same diskette would help justify the \$14.95 price tag.

(Marketed by Spectrum Projects, PO Box 21272, 93-15 86th Drive, Woodhaven, NY 11421.

## INSTRUCTIONS FOR COMFIG.NEW

THIS PROGRAM RUNS THE SAME AS THE ORIGINAL CONFIG PROGRAM, WITH ONLY THIS DIFFERENCE: THE COMMAND INFORMATION FOR THE MICKYTERM PROGRAM IS NOT LOST, BUT IS STORED SO THAT YOU CAN SEE HOW THE OLD PROGRAM WAS SET UP.

THE FIRST THING YOU DO IS TO LOAD & RUN THE CONFIG PROGRAM. YOU THEN TELL THE PROGRAM THE NAME OF THE COMMUNICATIONS PROGRAM YOU ARE USING. IF YOU PRESS <ENTER> ONLY, THE PROGRAM WILL LOAD 'MTERM.BIN.' IN THE OLD PROGRAM, ALL DATA ON HOW TO RUN COMMUNICATIONS; \*WORD WRAP ON/OFF \*7/8 BIT WORD \*BUFFER OPEN/CLOSED AT START UP \*CONTROL 6,8 & 0 STRINGS ...AND SO ON, WERE ERASED.

WITH THE NEW PROGRAM, ALL THIS INFORMATION IS STORED, THEN THE PROGRAM WILL ERASE THE OLD INFORMATION FROM THE PROGRAM (USING: POKE X,0).

THE PROGRAM WILL THEN ASK YOU WHAT YOU WANT TO TRANSMIT WHEN YOU PRESS CONTROLS 6,8 & 0. IN EACH CASE, THE PROGRAM SHOWS YOU WHAT THE OLD STRING WAS. NOTE: IF YOU WANT TO USE THE SAME STRING, JUST TYPE 'SAME.'

IT THEN GOES ON TO ASK YOU ABOUT ALL THE OTHER INFORMATION FOR COMMUNICATIONS; WORD BIT, WORD WRAP, BUFFER AT START UP, AND SO ON. AT ONE POINT, YOU WILL BE ASKED ABOUT THE CURSOR COLORS. WHAT COLOR FOR AN 'OPEN' OR 'CLOSED' BUFFER. YOU WILL FIRST BE ASKED IF YOU WANT TO SEE ALL THE COLORS THERE ARE.

AFTER, YOU WILL THEN BE ASKED TO CHOOSE 2 COLORS. ONE COLOR WILL BE FOR A CLOSED BUFFER, THE OTHER COLOR FOR AN OPEN BUFFER.

THE PROGRAM WILL SHOW YOU THE OLD COLOR, AND A DEFAULT COLOR. DEFAULT IS IF YOU ONLY HIT <ENTER> WITHOUT A CHOICE. YOU WILL THEN BE ASKED WHERE YOU WANT THIS NEW PROGRAM TO START AFTER IT HAS BEEN LOADED, AND EXECUTED. YOU CAN START RIGHT AT THE COMMUNICATIONS LEVEL, OR AT THE MAIN MENU. AGAIN, THE PROGRAM WILL SHOW WHAT YOU HAD BEFORE. YOU ARE NOW AT THE END OF THE CONFIGURE PROGRAM. THE LAST THING YOU ARE ASKED IS; 'BY WHAT NAME DO YOU WANT THIS PROGRAM.' I WOULD SUBJECT THAT YOU GIVE IT A NAME, AS IF YOU ONLY PRESS <ENTER>, THE PROGRAM WILL STORE THIS NEW PROGRAM AS 'MTERM.BIN.' I SUBJECT YOU SAVE 'MTERM.BIN' JUST IN CASE.

AND THAT IS THAT. YOU ARE DONE.

THE PROGRAM WILL LOAD YOUR NEW PROGRAM ON THE DISK, AND THEN RESET. BASIC IS RESTARTED SO YOU WILL SEE THE HEADINGS YOU ALWAYS SEE WHEN YOU TURN YOUR COMPUTER ON. THIS IS CALLED A COLD START.

FRED MCDONALD

```

10 CLEAR 200,&H74FF
20 CLS: PRINT @64
30 PRINT " -----
-----"
40 PRINT " ! MTERM Configurat
or !"
50 PRINT " !REWROTE BY FRED MCDO
NALD!"
60 PRINT " -----
-----"
70
80 DEFUSR1=&H7500
90 FOR X=&HE00 TO &HE16
100 READ H$: POKE X,VAL("&H"+H$):
NEXT X
110 FOR X=&H7500 TO &H7513
120 READ H$: POKE X,VAL("&H"+H$):
NEXT X
130 EXEC &HE00
140 POKE &H9692,19
150 GOTO 180 'This is necessary
160 FOR X=1 TO 1500: NEXT
170 GOTO 200
180 PCLEAR 10
190 GOTO 160
200 CLS
210 PRINT " MTERM Configuration P
rogram"
220 PRINT " *****
*****"
230 PRINT, "Filename to configure?
"
240 PRINT "(Enter = MTERM.BIN)"
250 A$= "> ": GOSUB 2170
260 IF H$="" THEN H$="MTERM.BIN"
270 LOADM H$:POKE &HFF40,0
280 POKE &H88,5: POKE &H89,&HA0
290 EX=PEEK(&H9D)*256 + PEEK(&H9E)

300 FORJ=0TO10:J(J)=PEEK(J+&HEB0):
NEXT
310 X=0:J=&HEA0:GOSUB2310
320 J=&HE40:X=6:GOSUB2310
330 J=&HE60:X=8:GOSUB2310
340 FOR X=&HE00 TO &HEFF:POKE X,0:
NEXT

```

PROGRAMS WANTED FOR PUBLICATION  
IF YOU WROTE A PROGRAMS WHICH YOU WOULD  
LIKE TO SHARE WITH OTHERS, SEND IT IN ON  
CASSETTE OR DISK. OUR STAFF WILL REVIEW  
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USE IT IN COCO ADS. YOUR TAPE OR DISK  
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PLEASE INCLUDE SOME FORM OF INSTRUCTIONS  
ON HOW YOUR PROGRAM WORKS. ON A ASCII  
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SEND TO  
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P O BOX 13256  
HOUSTON, TX 77219

```

350 '*****
360 'Function Keys:
370 'Control-0:
380 A=&HEA0: FL=0
390 GOSUB 2010
400 PRINT,,"String to send for con
trol-0:"
410 J=0:GOSUB2260:A$= "> ": GOSUB
2170
420 IF H$="" THEN 460 ELSE IF H$="
SAME" THEN H$=A$(0)
430 GOSUB 2210

```

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```

440 IF FL THEN 380
450 'Control-6:
460 A=&HE40: FL=0:GOSUB2010
470 PRINT,,"String to send for con
trol-6:"
480 J=6:GOSUB2260:A$="> ": GOSUB 2
170
490 IF H$="" THEN 530 ELSE IF H$="
SAME" THEN H$=A$(6)
500 GOSUB 2210
510 IF FL THEN GOSUB 2010: GOTO 46
0
520 'Control-8:
530 A=&HE60: FL=0:GOSUB2010
540 PRINT,,"String to send for con
trol-8:"
550 J=8:GOSUB2260:A$="> ": GOSUB 2
170
560 IF H$="" THEN 610 ELSE IF H$="
SAME" THEN H$=A$(8)
570 GOSUB 2210
580 IF FL THEN GOSUB 2010: GOTO 53
0
590 '*****
600 'Duplex:
610 GOSUB 2010:IFJ(0)=0 THEN A$="F
ULL" ELSE A$="HALF"
620 PRINT" WAS "A$"-DUPLEX": A$="
Duplex: <F>ull or <H>alf ": GOSUB
2170
630 IF H$="F" OR H$="f" THEN POKE
&HE80,0: GOTO 680
640 IF H$="H" OR H$="h" THEN POKE
&HE80,255: GOTO 680
650 SOUND 175,1: GOTO 610
660 '*****
670 'Word length:
680 GOSUB 2010:IF J(1)=0 THEN W=7
ELSE W=8
690 PRINT,," WAS"W"BITS",,,,,"Word
length: 7 or 8 bits ";
700 INPUT W
710 IF W=7 THEN POKE &HE81,0: GOTO
740
720 IF W=8 THEN POKE &HE81,255: GO
TO 740
730 SOUND 175,1: GOTO 680
740 IF PEEK(&HE80)=255 THEN POKE &
HE82,0: GOTO 890
750 '*****
760 'Auto Halt:
770 GOSUB 2010:IFJ(2)=0 THEN A$="
NO" ELSE A$=""
780 PRINT,," Auto-halt feature
:"
790 PRINT,,"Halts the host when yo
u exit"
800 PRINT "COMBAT, and restarts it
"
22

```

```

810 PRINT "upon re-entry into COMB
AT."
820 PRINT,," WAS"A$" AUTO-HALT":
PRINT "Choose <Y>=On or <N>=Off: "
830 A$="> ": GOSUB 2170
840 IF H$="Y" OR H$="y" THEN POKE
&HE82,255: GOTO 890
850 IF H$="N" OR H$="n" THEN POKE
&HE82,0: GOTO 890
860 SOUND 175,1: GOTO 770
870 '*****
880 'Linefeed on carriage return:
890 GOSUB 2010:IF J(3)=0 THEN A$="
" ELSE A$=" NO"
900 PRINT,," WAS"A$" LINE FEED":
PRINT "Linefeed on carriage return
?"
910 PRINT: A$="(Y/N) ": GOSUB 2170
920 IF H$="Y" OR H$="y" THEN POKE
&HE83,0: GOTO 950
930 IF H$="N" OR H$="n" THEN POKE
&HE83,255: GOTO 950
940 SOUND 175,1: GOTO 890
950 IF PEEK(&HE81)=255 THEN POKE &
HE84,0: GOTO 1060
960 '*****
970 'Auto buffering:
980 GOSUB 2010:IF J(4)=0 THEN A$="
OFF" ELSE A$="ON"
990 PRINT,," AUTO-BUFFER WAS: "A$
: PRINT "Automatic buffer control?
"
1000 PRINT: A$="(Y/N) ": GOSUB 217
0
1010 IF H$="Y" OR H$="y" THEN POKE
&HE84,255: GOTO 1060
1020 IF H$="N" OR H$="n" THEN POKE
&HE84,0: GOTO 1060
1030 SOUND 175,1: GOTO 980
1040 '*****
1050 'Cursor colors:
1060 GOSUB 2010
1070 PRINT
1080 PRINT" Cursor Color Select
ion":PRINT
1090 PRINT "Do you want to view al
l the possible colors first? "
1100 PRINT: A$="(Y/N) ": GOSUB 217
0
1110 IF H$="Y" OR H$="y" THEN GOSU
B 2040
1120 GOSUB 2010
1130 PRINT
1140 PRINT " *--*--* C A U T I O
N *--*--*"
1150 PRINT
1160 PRINT "You must use values AB

```

```

OVE
1170 PRINT "&H80 (128) for cursor
colors!"
1180 PRINT
1190 PRINT "Color to indicate CLOS
ED buffer:      WAS = "J(8)"=
"CHR$(J(8))
1200 PRINT "Default value = &HAF =
"CHR$(&HAF)
1210 PRINT "New value or <enter> f
or default";
1220 A=&HAF: INPUT Q1
1230 IF (Q1<&H81 AND Q1<>0) OR Q1>
255 THEN 1120
1240 IF Q1=0 THEN POKE &HE88,A ELS
E POKE &HE88,Q1
1250
1260 POKE &H7503,5: POKE &H7504,0
1270 GOSUB 2010
1280 POKE &H7503,4: POKE &H7504,&H
40
1290 PRINT "Color to indicate OPEN
buffer:"
1300 PRINT "      WAS = "J(9)"=
"CHR$(J(9))
1310 PRINT "Default value = &H9F =
"CHR$(&H9F)
1320 PRINT "New value or <enter> f
or default";
1330 A=&H9F: INPUT Q2
1340 IF (Q2<&H81 AND Q2<>0) OR Q2>
255 THEN 1260
1350 IF Q2=0 THEN POKE &HE89,A ELS
E POKE &HE89,Q2
1360 '*****
1370 'Buffer open/closed:
1380 GOSUB 2010
1390 PRINT,,"Communications buffer
status"
1400 PRINT "at startup:":IF J(5)=0
THEN A$="CLOSED" ELSE A$="OPEN"
1410 PRINT,," WAS "A$: A$="Choose
<O>pen or <C>losed: ": GOSUB 2170

1420 IF H$="O" OR H$="o" THEN POKE
&HE85,255: POKE &HE86,PEEK(&HE89)
: GOTO 1470
1430 IF H$="C" OR H$="c" THEN POKE
&HE85,0: POKE &HE86,PEEK(&HE88):
GOTO 1470

```

\*\*\*\*\*

W A N T E D

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\*\*\*\*\*

```

1440 SOUND 175,1: GOTO 1380
1450 '*****
1460 'Word wrap:
1470 GOSUB 2010
1480 PRINT,,"Word wrap enabled?":I
F J(7)=0 THEN A$="ON" ELSE A$="OFF
"
1490 PRINT "<Y>es = Format for 32
char/line"
1500 PRINT "<N>o = Leave it off"
1510 PRINT,," WAS "A$: A$="(Y/N)
": GOSUB 2170
1520 IF H$="Y" OR H$="y" THEN POKE
&HE87,0: GOTO 1570
1530 IF H$="N" OR H$="n" THEN POKE
&HE87,255: GOTO 1570
1540 SOUND 175,1: GOTO 1470
1550
1560 'Set up initial entry point:
1570 GOSUB 2010:IF J(10)=0 THEN A$
="MAIN MENU" ELSE A$="COMMUNICATIO
NS"
1580 PRINT,,"Choose your initial e
ntry point:"
1590 PRINT "Start up MTERM at:"
1600 PRINT " <M>ain menu, or in"
1610 PRINT " <C>ommunications mod
e"
1620 PRINT,," WAS STARTED AT "A$

```

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RS 10

```

1630 PRINT: A$="Choose M or C: ":
GOSUB 2170
1640 IF H$="M" OR H$="m" THEN POKE
&HEBA,0: GOTO 1690
1650 IF H$="C" OR H$="c" THEN POKE
&HEBA,255: GOTO 1690
1660 SOUND 175,1: GOTO 1570
1670 '*****
1680 'Save new version:
1690 GOSUB 2010
1700 PRINT,,"Filename for custom v
ersion:"
1710 PRINT: A$="> ": GOSUB 2170
1720 IF H$="" THEN 1700
1730 SAVEM H$,&HE00,&H3CFF,EX
1740 POKE &HFF40,0
1750 PRINT
1760 PRINT "Your custom MIKEYTERM
was saved"
1770 PRINT "under the name: "; H$
1780 PRINT,,"To use your custom ve
rsion type"
1790 PRINT "LOADM "; CHR$(34); H$;
CHR$(34); ":EXEC"
1800 POKE &HFFDE,0 'Exit 64K mode

1810 POKE &H71,0
1820 PRINT
1830 INPUT "Please hit your <ENTER
> when finished reading..."; A$

1840 CLEAR 200,&H7FFF
1850 PCLEAR 4
1860 EXEC40999
1870 '*****
1880 'Long string error routine:
1890 PRINT "String too long..."
1900 PRINT "Must not exceed 31 cha
racters!"
1910 SOUND 200,2
1920 FOR I=1 TO 1000: NEXT: RETURN

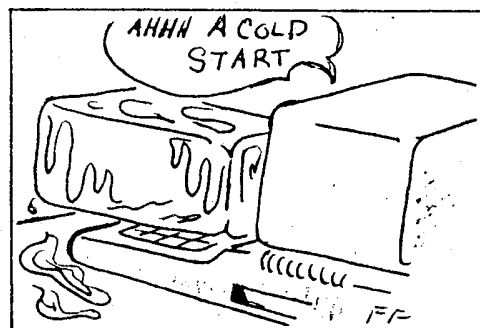
1930 '*****
1940 'Data for M/L routines:
1950 DATA 1A,50,8E,80,0,B7,FF,DE,E
C,84,B7,FF,DF
1960 DATA ED,81,8C,E0,0,25,F1,1C,A
F,39
1970 DATA 34,16,8E,4,40,9F,88,CC,6
0,60
1980 DATA ED,81,8C,6,0,25,F9,35,16
,39
1990 '*****
2000 'Clear most of the screen:
2010 Z=USR1(0): RETURN
2020 '*****
2030 'Show cursor colors routine:
2040 GOSUB 2010: P=0
2050 SW=0: PRINT

```

```

2060 FOR CO=&HBF-P TO &HFF-P STEP
16
2070 PRINT " " HEX$(CO) " "
CHR$(CO),
2075 SW=SW+1:IFSW=2THENPRINT:SW=0
2080 NEXT CO
2090 IF P=14 THEN PRINT "Press <en
ter> to RETURN"; ELSE 2120
2100 EXEC 44539
2110 RETURN
2120 PRINT "Press <enter>";
2130 EXEC 44539
2140 P=P+1: GOSUB 2010: GOTO 2050
2150 '*****
2160 'Keyboard input routine:
2170 PRINT A$;: LINEINPUT H$
2180 RETURN
2190 '*****
2200 'Length checker:
2210 IF LEN(H$)>31 THEN GOSUB 1890
: FL=1: GOTO 2250
2220 FOR J=1 TO LEN(H$)
2230 POKE A, ASC(MID$(H$,J,1)): A=
A+1: NEXT J
2240 POKE A, &H0D
2250 RETURN
2260 '*****
2270 PRINT,,"OLD STRING = ",,,,A$(
J)
2280 PRINT
2290 PRINT"NEW STRING ="
2300 RETURN
2310 A$(X)=""
2320 IF PEEK(J)=0 OR PEEK(J)=13 TH
EN RETURN
2330 A$(X)=A$(X)+CHR$(PEEK(J)):J=J
+1:GOTO2320

```





TELECOMMUNICATIONS TALK

by Dale Roman

I originally planned to have a column about how to start your own bulletin board system (BBS), but things are very busy for me right now. Instead of the BBS article, I have a nice little story about something that you're not supposed to use a modem for, HACKING.

-----  
Night of the Hackers

As you are surveying the dark and misty swamp you come across what appears to be a cave. You light a torch and enter. You have walked several hundred feet when you stumble into a bright blue portal... With a sudden burst of light and a loud explosion you are swept into... DRAGONFIRE... PRESS ANY KEY IF YOU DARE.

You have programmed your personal computer to dial into Dragonfire, a computer bulletin board in Gainsville, Texas. But before you get any information, Dragonfire demands your name, home city and phone number. So for tonight's tour of the electronic wilderness you become Montana Wildhack of San Francisco.

Dragonfire, Sherwood Forest, Forbidden Zone, Blottoland, Plovernet, The Vault, Shadowland, PHBI and scores of other computer bulletin boards are hangouts of a new generation of vandals. These precocious teen-agers use their electronic skills to play hide and seek with computer & telephone security forces. Many computer bulletin boards are perfectly legitimate: they resemble electronic versions of the familiar cork boards in supermarkets and school corridors, listing services and providing information someone out there is bound to find useful. But this is a walk on the wild side, a trip into the world of underground bulletin boards dedicated to encouraging - and making - mischief.

The phone numbers for these boards are closely guarded as a psychiatrist's home telephone number. Some numbers are posted on underground boards; others are exchanged over the telephone. A friendly hacker provided Dragonfire's number. Hook up and you see a broad choice of topics offered. For Phone Phreaks - who delight in stealing service from AT&T and other phone networks - Phreakenstein's Lair is a potpourri of phone numbers, access codes and technical information. For computer hackers - who dial into other people's computers - Ranger's Lodge is a chuck-full of phone numbers and

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passwords for government, university and corporate computers.

Moving through Dragonfire's offerings, you can only marvel at how conversant these teen agers are with the technical esoterica of today's electronic age. Obviously they have spent a great deal of time studying computers though their grammar and spelling indicate that they haven't been as diligent in other subjects. You are constantly reminded of how young they are.

Well it's that time of year again. School is back in session so let's get those high school computer phone numbers rolling in. Time to get straight A's, have perfect attendance (except when you've been up all night hacking school passwords), and messing up your teacher's worst paycheck.

Forbidden Zone, in Detroit, is offering ammunition for hacker civil war - tips on entering the most popular bulletin-board software. There are also plans for building black, red and blue boxes to mimic operator tones and get free phone service. And here are the details for "the safest and best way to make and use nitroglycerin," compliments of Doctor Hex, who says he got it "from my chemistry teacher"

Flip through the "pages." You have to wonder if this information is accurate. Can this really be the phone number and password for Taco Bell's computer? Do these kids really have dial-up numbers for dozens of university computers? The temptation is too much. You sign off and have your computer dial the number for a Yale computer. Bingo - the words for a Yale University appear on your screen. You enter the password. A menu appears. You hang up in a sweat. You are now a HACKER!!!!!!

Punch in another number and your modem zips off the touch tones. Here comes the tedious side of all this, Bulletin boards are popular. No vacancy at Bates Motel (named for Anthony Perkin's creepy motel in the movie "Psycho"); the line is busy. So are 221 B. Baker Street, PHBI, Shadowland and The Vault. Caesar's Palace rings and connects. This is a different breed of board. Caesar's Palace is a combination phreak board and computer store in Miami. This is the place to learn how to mess up a department store's anti-shoplifting system, or make free calls on telephones with locks on the dial. Pure capitalism accompanies such anarchy. Caesars Palace is offering good deals on disc drives, software, computers and all sorts of hardware. Orders are placed through electronic mail messages.

'Tele-Trial': Bored by Caesar's Palace, you enter the for Blottoland, the board operated by one of the nations most notorious computer phreaks - King Blotto. This one has been busy all night, but now its pretty late in Cleveland. The phone rings and you connect. To get past the blank screen type "S-L-I-M-E" King Blotto obliges, listing his rules: he must have your real name, phone number, address, occupation and interests. He will call and disclose the primary password, "if you belong on this board." If admitted, do not reveal the phone number or secondary password, lest you face "tele-trial," the King warns as he dismisses you by hanging up.

You expected heavy security, but this teen ager's security is, as they say, awesome. Computers at the Defense Department and hundreds of businesses let you know when you've reached them. Here you need a password just to find out what system answered the phone. King Blotto asks questions - and hangs up. Profesional computer security experts could even learn from this kid. He knows that ever since the 414 computer hackers were arrested in August 1982, law enforcement officers have been searching for leads on computer bulletin boards.

Do you have any ties or connections with

any law enforcement agency or any agency which would inform such a law enforcement agency of this bulletin board?

Such is the welcoming message from Plovernet, a Florida board known for its great hacker/phreak files. There amid a string of valid VISA and MasterCard numbers are dozens of computer phone numbers and passwords. Here you also learn what King Blotto means by tele-trial. "As some of you may or may not know, a session of the conference was held and and the Wizard was found guilty of some miscellaeous charges, and sentenced four months without bulletin boards." If Wizard calls, system operators like King Blotto disconnect him.

Paging through the bulletin boards is a test of your patience. Each board has different commands. Few are easy to follow, leaving you to hunt and peck your way around. So you haven't had the nerve to type "C," which summons the system operator for a live, computer to computer conversation.

The time, however, has come, for you to ask a few questions of the "SYSOP." You dial a computer in Boston. It answers and you begin working your way through the menus. You scan a handful of dial up numbers, including one for ARPANET, the Defense Department's research computer. Bravely you tap C and in seconds the screen blanks and your cursor dances around the screen.

Hello ... What kind of computer do you have?

Contact. The sysop is here. You exchange amenities and get "talking." How much hacking does he do? Not much, too busy. Is he afraid of being busted, having his computer confiscated like the Los Angeles man facing charges because his computer bulletin board contained a stolen telephone credit-card number? "Hmmm ... No," he replies. Finally, he asks the dreaded question: "How old are YOU," you reply, stalling, "15," he types. Once you confess he knows you're old enough to be his father, the conversation gets very serious. You fear each new question; he probably thinks you're a cop. But all he wants to know is your choice for president. The chat continues, until he asks, "What time is it there?" just past midnight, you reply. Expletive, it's "3:08 here," Sysop types. "I must be going to sleep. I've got school tomorrow." The cursor dances. "\*\*\*\*\* Thank You for Calling." The screen goes blank.

From the above description, does hacking sound interesting to you? Honest BBS operators spend much money and time to

provide a service to you that is, in most cases, FREE. Don't abuse their services.

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HARDCOPY

by Lonne Hortick

I have before me a game called CROSSOVER. It was written by Mike Hall of Rococo Software in Wisconsin. This is the same company that gave us the VINCENT VAN COCO graphics program.

This game, though appearing to be deceptively simple, offers one or two players the ability to set the parameters of the game before they begin the action.

In the game, which is played on a square, the computer tries to build a chain of small boxes across the screen. This may happen from right to left, left to right, top to bottom or bottom to top. And, as you would suspect, it all happens at the same time. The players are represented by boxes also and their job is to stop the computer from completing the "Crossover." To do this you merely meet the computer's chain of boxes head on. Sound simple? Well, there is a catch. The computer will send out chains of boxes of different colors and your box has to be the same color as the computer's when you meet it head on! You change the color of your box by pressing the joystick button.

Each player's box is actually a chain of boxes six segments long. The more times you stop the computer's boxes the longer your chain of boxes grows. This makes it more difficult to maneuver on the higher skill levels. Also, on the higher skill levels obstacles will appear that also adds to the players' maneuvering ability.

At the start of the game there are several parameters that can be changed. The game comes set up with the following parameters: Overall Speed (1 = fast) 6, Number of Crossovers 30, Number of Lines 4, Line Rate (1 = fast) 5, and Number of Hits per Wave 30. Most of them are pretty self explanatory. The Number of Crossovers is how many lines the computer has successfully complete to end the game. The Number of Lines is how many the computer will generate at a time. Number of Hits per Wave is how many lines you have to stop in order to advance to the next level. You also have the ability to choose increasing difficulty as the game progresses.

As I stated earlier, the game is set up for one or two players. But there is another catch here, too. The players do not compete but cooperate in order to "score a bundle of points" as the documentation says.

This game is suited to the novice or the more advanced joystick juggler because of its unique initial parameter set-up. It is good family fair because it gives the younger set the ability to play a computer game and learn about cooperation at the same time.

The version of the game I tested came on cassette but I am sure that there is no difference between it and the disk version. The price is a modest \$14.95 for the cassette and \$17.95 for the disk. Documentation is limited to a single sheet and is adequate but I had to re-read it several times in order to fully understand what was going on.

On Lonnie's Infamous Scale of Ten where ten is tops, CROSSOVER rates a 7.75. It is entertaining and challenging yet there is something lacking at the higher levels. It is an excellent starter game for kids and for anyone who need to improve their joystick skills. It is a game that you will come back to in the future because just know that you can do better. Because of it's reasonable price I recommend this game.

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| SCRT          | - BASIC BUBBLE SORT DEMO                                           | ST. GEORGE     | - ADVENTURE                                  |
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| SCREEN DUMP   | - DUMPS SCREEN TO PRINTER                                          | PURCHASE ORDER | - BUSINESS TO WRITE PURCHASE ORDERS-DISK     |
| SEE           | - DISK DIRECTORY UTILITY                                           | EQUATION       | - CALCULATOR UP TO FOUR VARIABLES            |
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| FINDWORD      | - WORD SEARCH PUZZLE                                               |                | ISSUE A8                                     |
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| TAPE LIST     | - PROGRAM NAMES ON TAPE TO PRINTER & ENTER COUNTER #               | CERIFY         | - DISK UTILITY                               |
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| PONG          | - GAME                                                             | PHONE DIALER   | - DIAL A TOUCH TONE PHONE THROUGH YOUR COCO  |
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| DATA SPEAK    | - UTILITY TO MAKE YOUR PROGRAMS LINES TALK                         | MYSTER ISLND   | - ADVENTURE                                  |
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| TRANSFER      | - DISK UTILITY TO TRANSFER PROGRAMS FROM DRIVE 0 TO 1              | ANIMAL DISK    | - GUESS THE ANIMAL GAME                      |
|               | ISSUE A6                                                           | SOUND REQU     | - SEE DIFFERENT SOUNDS ON YOUR SCREEN        |
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| GRAPH         | - BUSINESS MAKES NICE LOOKING GRAPHICS                             | SAFE CRAKER    | - OPEN THE SAFE (GAME)                       |
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- DRAW POKER - CARD GAME
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## ISSUE B4

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- ROMPAC TO TAPE - UTILITY
- CALENDAR- UTILITY
- LETTER - BUSINESS
- ANTI-TORPEDO - GAME

## ISSUE B2

- CLOCK - A CLOCK
- WORD PROC - PROCESSOR
- CASS FILE - TAPE UTILITY
- CASTLE - ADVENTURE
- HOME BUDGET - BUDGET
- DISK MASTER - DISK UTILITY
- ROAD RACE - GAME

## ISSUE B5

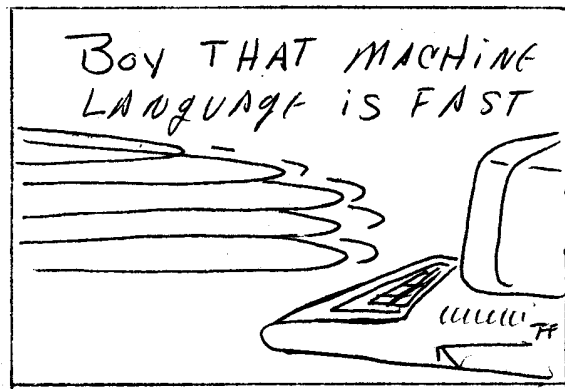
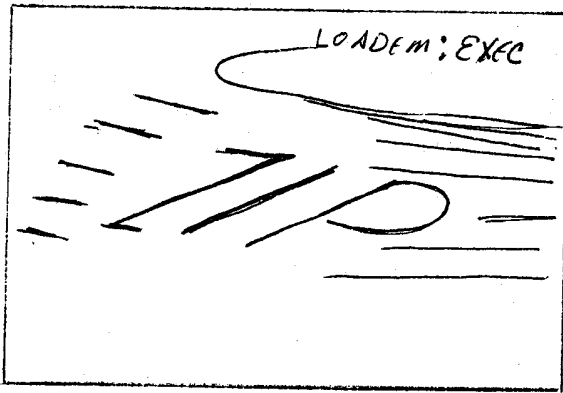
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- CRYPT - ADVENTURE
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- REPORTER KIT - BUSINESS

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- SPOOLER PRINT
- DISKCOPY UTIL
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- WIDTH CHANG
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- POOL - GAME
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5 PCLEAR4: CLEAR 800:CLS  
8 PMODE4,1:PCLS:SCREEN0  
10 PRINT @ 169,"LOST TREASURE  
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15 FOR A=1TO2000:NEXTA  
16 PMODE 4,1  
20 X=5:Y=3  
22 DIM L\$(X+1): DIM LO\$(Y+1)  
24 DIM O\$(Y+1): DIM C\$(20)

26 DIM T(4,X+1): DIM C(20)  
28 DIM O(Y+1): DIM G\$(Y+1)  
29 DIM W\$(32)  
50 CLSS:PRINT" LOST TREASU  
RE":PRINT@128,"THE OBJECT IN THIS  
ADVENTURE IS TO FIND THE TREASU  
RE AND BRING IT BACK TO THE EN  
TRANCE HALL.

HINT: BE OBSERVANT!!"

64 FOR C=1 TO 4000:NEXT C  
66 W\$(1)="BM+3,0;U4E2F2D2L4R4D2"  
67 W\$(2)="BM+3,0;R3L3U6R3FDGL3R3FD  
GBR"  
68 W\$(3)="BM+3,0;BUFR3L3HU4ER3BD6"  
69 W\$(4)="BM+3,0;R3L3U6R3FD4GBR"  
70 W\$(5)="BM+3,0;R4L4U3R3L3U3R4BD6  
"  
71 W\$(6)="BM+3,0;U3R3L3U3R4BD6BL"  
72 W\$(7)="BM+3,0;BUFR2EUHLBL2D2U4E  
R3BRBD6"  
73 W\$(8)="BM+3,0;U6D3R4U3D6"  
74 W\$(9)="BM+3,0;R4L2U6L2R4BD6"  
75 W\$(10)="BM+3,0;BUFR2EU5BD6"  
76 W\$(11)="BM+3,0;U6D3RE3G3F3"  
77 W\$(12)="BM+3,0;BU6D6R4BL"  
78 W\$(13)="BM+3,0;U6F2E2D6"  
79 W\$(14)="BM+3,0;U6DF2F2DU6BD6;"  
80 W\$(15)="BM+3,0;BUU4ER2FD4GL2HFB  
R3"  
81 W\$(16)="BM+3,0;U6R3FDGL2BD3BR3"  
82 W\$(17)="BM+3,0;BUU4ER2FD4GL2HFR  
2EHF2BL"  
83 W\$(18)="BM+3,0;U6R3FDGL3R2F2D"  
84 W\$(19)="BM+3,0;BUFR2EUHL2HEUR2F  
BD5"

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85 W$(20)="BM+3,0;BU6R4L2D6BR2"
86 W$(21)="BM+3,0;BU6D5FR2EU5BD6"
87 W$(22)="BM+3,0;BU6D2FD2FEU2EU2B
D6"
88 W$(23)="BM+3,0;BU6D6E2F2U6BD6"
89 W$(24)="BM+3,0;UE4UBL4DF4D"
90 W$(25)="BM+3,0;BU5UDF2E2UDG2D3B
R"
91 W$(26)="BM+3,0;BU6R4DG4D1R4"
100 DATA IN THE ENTRANCE HALL,IN A
SMALL ARMORY,IN THE HALL OF LOST
KINGS,IN THE TREASURE ROOM,IN THE
THRONE ROOM
200 DATA A SWORD ,SWORD,2,A MAGIC
SCROLL,SCROLL,3,THE LOST TREASURE,
*,4
300 DATA 0,0,2,0
310 DATA 0,0,3,1
320 DATA 0,5,0,2
330 DATA 0,0,5,0
340 DATA 3,0,0,4
400 DATA TAKE,1,GET,1,DROP,2,GO,3,
LOOK,4,READ,4,INVENTORY,5
600 FOR C=1 TO X:READ L$(C):NEXT C

610 FOR C=1 TO Y:READ LO$(C),O$(C)
,O(C):NEXT C
620 FOR C=1 TO X:READ T(1,C),T(2,C)
,T(3,C),T(4,C):NEXT C
630 T$(1)="LEFT":T$(2)="RIGHT":T$(
3)="UP":T$(4)="DOWN"
640 N=7
650 FOR C=1 TO N:READC$(C),C(C):NE
XTC
680 L=1
720 G$(1)="BM12B,142;U66;R4;D66;U6
2;L4;D4;R4;D4;L4;D4;R12;D4;U4;L20;
D4;U4;R10;D54;R1;U2"
730 G$(2)="BM 112,52;R24;D24;L24;U
24;D8;R24;D4;L24;D4;R24"
740 G$(3)="BM 32,148;U40;R64;D40;L
64;R4;U16;R56;D16;R4;U40;L4;D12;L5
6;U12;D12;R28;D8;L2;U4;R2;D4;R2;U4
;L2;D4"
900 SCREEN 1,1
1000 COLORB,1:LINE(0,150)-(255,191
),PRESET,BF
1001 N$="YOU ARE "+L$(L):DRAW"BM10
,158;":GOSUB 10020
1005 LINE(0,0)-(255,147),PRESET,BF
:ON L GOSUB 30000,30060,40000,6000
0,50000
1008 COLOR B,1
1010 N$="YOU SEE "
1020 FOR C=1 TO Y:IF O(C)=L THEN N
$=N$+LO$(C)+" "
1025 IF O(C)=L THEN DRAW G$(C)
1030 NEXTC
1034 IF N$="YOU SEE "THEN N$=N$+"N
OTHING UNUSUAL"

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1035 DRAW"BM10,168;":GOSUB 10020
1040 N$="EXITS LEAD "
1050 FOR C=1 TO 4:IF T(C,L)>0 THEN
N$=N$+T$(C)+" "
1060 NEXT C
1065 DRAW"BM 10,179;":GOSUB 10020
1075 IF O(3)=1000 AND L=1 THEN GOT
O 1500
1085 COLOR 6,1
1100 A$="":GOSUB 20005
1200 FORC=1TO LEN(A$):IF MID$(A$,C
,1)=" "THEN A1$=LEFT$(A$,C-1):B$=M
ID$(A$,C+1,LEN(A$)-C):GOTO 1230 EL
SE NEXT C
1210 A1$=A$
1230 FORC=1 TO N
1240 IF C$(C)=A1$ THEN A=C(C):GOTO
1400
1250 NEXT C
1260 DRAW"BM160,190;":N$=" WHAT":
SOUND1,20:GOSUB10020:SOUND60,10:GO
TO 1100
1400 ON A GOTO 2000,3000,4000,5000
,9000
1500 FOR C=1TO100:SCREEN,0:SCREEN,
1:NEXT
1501 CLS:PRINT:PRINT:PRINT:PRINT:P
RINT" Y O U H A V E
W O N ! ! "
1502 PLAY"V7T303L4DC02BAL1A-T403L4
DC02BAL1A-T603L4V9DD02A03DT702A03V
13DEF":PLAY"T6V11L4GFEDT5C02V9BAGL
16-L403C02BAGV7L16-L403C02BAGV5L16
-":PLAY"03L4CC02G-T603V6C02G-V86-T
703V9CDEV11FEDC02V7T6BAGFL1E-":END

2000 FOR C=1 TO Y
2010 IF B$=O$(C) AND O(C)=L AND O$(
C)<>"*" THEN O(C)=1000:DRAW"BM10,
140;":N$=LO$(C)+" TAKEN":SOUND 10,
10:GOSUB10020:GOTO 1000
2020 NEXT C
2030 IF B$="TREASURE" THEN LINE(0,
140)-(255,191),PRESET,BF:DRAW"BM10
,165;":N$="WITH WHAT":GOSUB 10020:
GOSUB 20005:IFA$="SWORD"ANDO(1)=10
00ANDO(3)=L THEN O(3)=1000:DRAW"BM
10,130;":N$="TAKEN":SOUND100,10:GO
SUB 10020:O$(3)="GOLD":GOTO1000
2050 DRAW"BM100,140;":N$="CAN NOT
TAKE IT":SOUND 10,10:GOSUB10020:GO
TO1100
3000 FOR C=1 TO Y
3010 IF B$=O$(C) AND O(C)=1000 THE
N O(C)=L
3020 NEXT C
3030 IF B$="TREASURE" AND O(3)=100
0 THEN O(3)=L
3040 GOTO 1000
4000 FOR C=1 TO 4:IF B$=T$(C) THEN 31

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```

DR=C:GOTO 4020
4010 NEXT C:GOTO 1000
4020 IF T(DR,L)>0 THEN L=T(DR,L)
4030 SOUND 120,5:GOTO 1000
5000 IF A#=A1$ THEN 1000
5020 LINE(0,140)-(255,191),PRESET,
BF
5030 DRAW"BM 10,170;"
5040 IF B#="SCROLL" THEN N#="WITH
TELEKINESIS YOU CAN MOVE THINGS":G
OSUB 10020:PLAY"L1; A;A#;A-":GOTO
1100
5060 IF B#="SWORD" THEN N#="IT IS
A SWORD OF TELEKINESIS":GOSUB 1002
0:PLAY"T-; A;A#;A-":GOTO 1100
5070 IF B#="TREASURE" THEN N#="IT
LOOKS LIKE A WHOLE CASTLES GOLD":G
OSUB 10020:PLAY"CDEFGABAGFEDCBA":G
OTO 1100
5080 N#="NOTHING SPECIAL":GOSUB 10
020:PLAY"CDEFG;03;ABAD2;FEDCBA":GO
TD 1100
9000 LINE(0,145)-(255,191),PRESET,
BF:N#="YOU ARE CARRYING "
9010 HORIZONTAL=10:VERTICAL=1
9020 DRAW"BM10,147":GOSUB 10020:DR
AW"BM 10,164;"
9025 N#=" "
9030 FOR V=1 TO Y
9035 IF D(V)=1000 THEN DRAW G*(V)
9040 IF D(V)=1000 THEN N#=N#+LD*(V
)+ " "
9050 HO=HO+6*LEN(N#):IF HO>245 THE
N 9070
9055 GOTO 9078
9070 VE=VE+1:HO=10
9072 IF VE=2 THEN DRAW"BM 10,174"
9074 IF VE=3 THEN DRAW"BM 10,184;"
9076 IF VE=4 THEN DRAW"BM 10,191;"
9078 GOSUB 10020:N#=" "
9080 NEXT V:GOTO 1100
9999 STOP
10020 FOR C=1 TO LEN(N#)
10030 N1$=MID$(N#,C,1)
10040 N1=ASC(N1$)
10045 IF N1=32 THEN DRAW"BM+6,0":G
OTO 10080
10050 IF N1>=65 AND N1<=90 THEN GO
TD 10060 ELSE NEXT C
10060 N1=N1-64
10070 DRAW W$(N1)
10080 NEXT C
10090 RETURN
20005 LINE(0,182)-(255,191),PRESET
,BF:DRAW"BM10,189;"
20006 A#=" "
20010 I$=INKEY$
20020 IF I#="" THEN 20010

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```

20025 SOUND 1,1
20030 IF I#=CHR$(13) THEN RETURN
20040 N1=ASC(I$)
20045 IF N1=32 THEN DRAW"BM+6,0":A
#=A#+CHR$(32):GOTO 20010
20047 IF N1=8 AND LEN(A#)>0 THEN A#
=LEFT$(A#,LEN(A#)-1):DRAW"BM-6,0;XW
$(24);":GOTO20010
20050 IF N1>=65 AND N1<=90 THEN A#
=A#+I$ ELSE GOTO 20010
20060 N1=N1-64:DRAW W$(N1)
20070 IF LEN(A#)>30 THEN RETURN
20080 GOTO 20010
30000 COLOR 4,1: LINE(0,0)-(0,148)
,PSET:LINE(0,0)-(255,0),PSET:LINE(
255,0)-(255,148),PSET
30001 DRAW"BM32,4;D140;R16;U140"
30002 LINE(28,0)-(52,4),PSET:LINE(
28,4)-(52,0),PSET,BF
30003 LINE(28,144)-(52,148),PSET:L
INE(28,148)-(52,144),PSET,BF
30004 LINE(32,12)-(44,20),PSET:LIN
E(32,20)-(44,12),PSET,BF
30005 LINE(36,24)-(48,32),PSET:LIN
E(36,32)-(48,24),PSET,BF
30006 LINE(32,36)-(44,44),PSET:LIN
E(32,44)-(44,36),PSET,BF
30007 LINE(36,48)-(48,56),PSET:LIN
E(36,56)-(48,48),PSET,BF
30008 LINE(32,60)-(44,68),PSET:LIN
E(32,68)-(44,60),PSET,BF
30009 LINE(36,72)-(48,80),PSET:LIN
E(36,80)-(48,72),PSET,BF
30010 LINE(32,84)-(44,92),PSET:LIN
E(32,92)-(44,84),PSET,BF
30011 LINE(36,96)-(48,104),PSET:LI
NE(36,104)-(48,96),PSET,BF
30012 LINE(32,108)-(44,116),PSET:L
INE(32,116)-(44,108),PSET,BF
30013 LINE(36,120)-(48,128),PSET:L
INE(36,128)-(48,120),PSET,BF
30014 LINE(32,132)-(44,140),PSET:L
INE(32,140)-(44,132),PSET,BF
30015 LINE(204,0)-(228,4),PSET:LIN
E(204,4)-(228,0),PSET,BF
30016 DRAW"BM208,4;D140;R16;U140"
30017 LINE(204,144)-(228,148),PSET
:LINE(204,148)-(228,144),PSET,BF
30018 LINE(212,12)-(224,20),PSET:L
INE(212,20)-(224,12),PSET,BF
30019 LINE(208,24)-(220,32),PSET:L
INE(208,32)-(220,24),PSET,BF
30020 LINE(212,36)-(224,44),PSET:L
INE(212,44)-(224,36),PSET,BF
30021 LINE(208,48)-(220,56),PSET:L
INE(208,56)-(220,48),PSET,BF
30022 LINE(212,60)-(224,68),PSET:L
INE(212,68)-(224,60),PSET,BF
30023 LINE(208,72)-(220,80),PSET:L

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INE(208,80)-(220,72),PSET,BF
30024 LINE(212,84)-(224,92),PSET;L
INE(212,92)-(224,84),PSET,BF
30025 LINE(208,96)-(220,104),PSET:
LINE(208,104)-(220,96),PSET,BF
30026 LINE(212,108)-(224,116),PSET
:LINE(212,116)-(224,108),PSET,BF
30027 LINE(208,120)-(220,128),PSET
:LINE(208,128)-(220,120),PSET,BF
30028 LINE(212,132)-(224,140),PSET
:LINE(212,140)-(224,132),PSET,BF
30029 LINE(80,108)-(176,132),PSET:
LINE(80,132)-(176,108),PSET,BF
30030 LINE(84,132)-(88,148),PSET:L
INE(84,148)-(88,132),PSET,BF
30031 LINE(168,132)-(172,148),PSET
:LINE(168,148)-(172,132),PSET,BF
30032 LINE(124,0)-(128,12),PSET:LI
NE(124,12)-(128,0),PSET,BF
30033 LINE(108,12)-(144,20),PSET:L
INE(108,20)-(144,12),PSET,BF
30034 DRAW"BM108,12;U4;R2;D4":DRAW
"BM144,12;U4;L2;D4"
30050 RETURN
30060 COLOR4,1: LINE(0,0)-(0,148),
PSET:LINE(0,0)-(255,0),PSET:LINE(2
55,0)-(255,148),PSET
30061 LINE(140,84)-(148,148),PSET:
LINE(140,148)-(148,84),PSET,BF
30062 DRAW"BM140,92;L8;D2;R8"
30063 LINE(13,60)-(18,146),PSET:LI
NE(13,146)-(18,60),PSET,BF
30064 LINE(238,60)-(242,146),PSET:
LINE(238,146)-(242,60),PSET,BF
30065 DRAW"BM13,60;L4;U8;R2;D4;R8;
U4;R2;D8;L4"
30066 DRAW"BM238,60;L4;U8;R2;D4;R8
;U4;R2;D8;L4"
30070 LINE(124,0)-(128,12),PSET:LI
NE(128,0)-(124,12),PSET,BF
30071 LINE(112,12)-(144,20),PSET:L
INE(112,20)-(144,12),PSET,BF
30072 LINE(108,8)-(112,20),PSET:LI
NE(108,20)-(112,8),PSET,BF
30073 LINE(140,8)-(144,20),PSET:LI
NE(140,20)-(144,8),PSET,BF
30429 RETURN
40000 COLOR4,1
40001 LINE(0,0)-(0,148),PSET:LINE(
0,0)-(255,0),PSET:LINE(255,0)-(255
,148),PSET
40002 LINE(0,12)-(8,148),PSET:LINE
(0,148)-(8,12),PSET,BF
40003 LINE(8,108)-(44,148),PSET:LI
NE(8,148)-(44,108),PSET,BF
40004 LINE(248,12)-(255,148),PSET:
LINE(248,148)-(255,12),PSET,BF
40005 LINE(212,106)-(255,148),PSET
:LINE(212,148)-(255,106),PSET,BF
40006 LINE(72,0)-(112,52),PSET:

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LINE(176,0)-(136,52),PSET
49999 RETURN
50000 COLOR4,1
50001 LINE(0,0)-(0,148),PSET:LINE(
0,0)-(255,0),PSET:LINE(255,0)-(255
,148),PSET
50002 LINE(8,0)-(28,148),PSET:LINE
(8,148)-(28,0),PSET,BF
50003 LINE(228,0)-(248,148),PSET:L
INE(228,148)-(248,0),PSET,BF
50004 LINE(56,16)-(76,132),PSET:LI
NE(56,132)-(76,16),PSET,BF
50005 LINE(180,16)-(200,132),PSET:
LINE(180,132)-(200,16),PSET,BF
50006 LINE(108,40)-(112,80),PSET:L
INE(108,80)-(112,40),PSET,BF
50007 LINE(144,40)-(148,80),PSET:L
INE(144,80)-(148,40),PSET,BF
50008 LINE(104,92)-(112,124),PSET:
LINE(104,124)-(112,92),PSET,BF
50009 LINE(144,92)-(152,124),PSET:
LINE(144,124)-(152,92),PSET,BF
50010 DRAW"BM112,44;R32;D36;L32"
50011 LINE(112,80)-(104,84),PSET:
LINE(104,84)-(104,92),PSET
50012 LINE(144,80)-(152,84),PSET:
LINE(152,84)-(152,92),PSET
50013 LINE(112,120)-(144,120),PSET

59999 RETURN
60000 COLOR4,1
60001 LINE(0,0)-(0,148),PSET:LINE(
0,0)-(255,0),PSET:LINE(255,0)-(255
,148),PSET
60002 LINE(32,0)-(224,20),PSET:LIN
E(32,20)-(224,0),PSET,BF
60003 LINE(0,20)-(24,148),PSET:LIN
E(0,148)-(24,20),PSET,BF
60004 LINE(232,20)-(255,148),PSET:
LINE(232,148)-(255,20),PSET,BF
60020 LINE(124,20)-(128,32),PSET:L
INE(124,32)-(128,20),PSET,BF
60021 LINE(112,32)-(140,40),PSET:L
INE(112,40)-(140,32),PSET,BF
60022 LINE(108,28)-(112,40),PSET:L
INE(108,40)-(112,28),PSET,BF
60023 LINE(140,28)-(144,40),PSET:L
INE(140,40)-(144,28),PSET,BF
60050 RETURN

```



D I S K Z A P R

DISK ZAPR IS A REAL USEFUL DISK UTILITY PROGRAM TO FIX AND LOOK THROUGH YOUR DISK'S. FOLLOW INSTRUCTIONS IN THE PROGRAM.

THIS PROGRAM WAS DONATED BY T&D SOFTWARE. SEE THERE AD ON PAGE 30.

```

1 REM COPYRIGHT (C) T&D SOFTWARE 1
  983
2 PMODE0:PCLEAR1
3 CLEAR2000:DIM G1(68),TY$(3):FORI
=0TO3:READY$(I):NEXT:DATABASIC PR
OGRAM,ASCII DATA FILE,MACHINE CODE
,TEXT EDITOR FILE
4 CLS:PRINTTAB(10)"DISK ZAPPER"
5 PRINT:PRINT" THIS DISK UTILITY
WILL ALLOW YOU DIRECT ACCESS TO D
ISK SEC- TORS AND OTHER VALUBLE I
NFORMA- TION WHICH MAY HELP YOU RE
PAIR A CRASHED DISK."
6 PRINT"warning: when used indescr
imin- ately, this program can be v
ery dangerous to the health of you
r other programs on the diskette."

7 PRINT" FOR TECHNICAL INFORMATI
ON ON THE DISK DRIVE SYSTEM, CONSU
LT YOUR OWNER'S MANUAL."
8 GOSUB96
9 CLS:PRINT" IF YOU HAVEN'T ALRE
ADY DONE SO, INSERT THE DISKETTE
WHICH YOU WISH TO WORK ON INTO T
HE DISK DRIVE."
10 GOSUB96
11 CLS:PRINT:PRINTTAB(14)"MENU":PR
INT
12 PRINT" 1. DISPLAY & EDIT A S
ECTOR 2. PRINT SECTOR ON PRIN
TER 3. DISPLAY DIRECTORY IN-
FORMATION FOR A FILE
4. DISPLAY FILE ALLOCATION
TABLE
5. END PROGRAM"
13 PRINT:PRINTTAB(5)"YOUR CHOICE ?
(1-5)"
14 K#=INKEY$:IFK#=""THEN14
15 IF VAL(K#)<1 OR VAL(K#)>5 THEN1
4
16 ON VAL(K#) GOTO17,39,48,86,95
17 GOSUB99
18 DSKI$ D,T,S,A$,B$
19 FORI=1 TO 256 STEP 8
20 CLS:FORJ=I TO I+7
21 IF J>128 THEN T$=MID$(B$,J-128,
1) ELSE T$=MID$(A$,J,1)
22 GOSUB103
23 PRINT"BYTE NUMBER";J-1;"=" ;N$;
34

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" = ";T$;"'"
24 NEXT
25 PRINT@320," PRESS:":PRINT"
'E' TO CHANGE A BYTE
'R' TO GO BACK 8 BYTES 'C
' TO CONTINUE"
26 K#=INKEY$:IFK#=""THEN26
27 IF INSTR("ERC",K#)=0 THEN26
28 ON INSTR("ERC",K#) GOTO29,34,36

29 PRINT@320,STRING$(128," ");
30 PRINT@320,"ENTER THE BYTE NUMBE
R WHICH YOU WISH TO CHANGE":INPUT
BN:IFBN<0 OR BN>255 OR BN<>INT(BN)
THEN29
31 PRINT@320,STRING$(128," ");:PRI
NT@320,"ENTER THE NEW VALUE FOR BY
TE NUMBER ";BN;:INPUT NV:IFNV<0
OR NV>255 OR NV<>INT(NV) THEN31
32 IF I>128 THEN MID$(B$,BN+1-128,
1)=CHR$(NV) ELSE MID$(A$,BN+1,1)=C
HR$(NV)
33 GOTO20
34 IF (I-8) < 1 THEN 26
35 I=I-8:GOTO20
36 NEXT
37 DSKO$ D,T,S,A$,B$
38 GOTO11
39 GOSUB99
40 DSKI$ D,T,S,A$,B$
41 CLS:PRINT" READY PRINTER - PRES
S [ENTER]"
42 GOSUB97
43 FORI=1 TO 256
44 IF I>128 THEN T$=MID$(B$,I-128,
1) ELSE T$=MID$(A$,I,1)
45 GOSUB103
46 PRINT#-2,"BYTE NUMBER";I-1;"="
;N$;" = ";T$;"'"
47 NEXT:GOTO11
48 CLS
49 INPUT"WHICH DRIVE (0-3)";D:IFD<
0 OR D>3 OR D<>INT(D) THEN49
50 LINEINPUT"FILENAME: ";F$
51 P1=INSTR(F$,"/"):P2=INSTR(F$,".
")
52 IFF1=0 AND P2=0 THEN PRINT"PLEA
SE INCLUDE THE EXTENSION.":GOTO50
53 IF P1<>0 THEN FL$=LEFT$(F$,P1-1
):EX$=MID$(F$,P1+1,3):GOTO55
54 FL$=LEFT$(F$,P2-1):EX$=MID$(F$,
P2+1,3)
55 IF FL$=""THEN50
56 FL$=FL$+STRING$(8-LEN(FL$),32)
57 EX$=EX$+STRING$(3-LEN(EX$),32)
58 S=3
59 DSKI$ D,17,S,A$,B$
60 C$=A$+LEFT$(B$,127)
61 P=1
62 IF MID$(C$, (P-1)*32+1,11)=FL$+E

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X$ THEN 67
63 IFASC(MID$(C$, (P-1)*32+1,1))=25
5 THEN66
64 P=P+1:IFP<8 THEN62
65 S=S+1:IFS<12THEN59
66 PRINT"THE FILE DOES NOT EXIST."
:GOSUB96:GOTO11
67 E$=MID$(C$, (P-1)*32+1,16)
68 FT$=MID$(E$,12,1)
69 AF$=MID$(E$,13,1)
70 FG=ASC(MID$(E$,14,1))
71 LB$=MID$(E$,15,2)
72 NG=1
73 G1(NG)=FG
74 GP=FG
75 DSKI$ D,17,2,A$,B$
76 FA$=LEFT$(A$,68)
77 G$=MID$(FA$,GP+1,1):G=ASC(G$):I
FG>&H43 AND G<>255 THEN79
78 NG=NG+1:G1(NG)=G:GP=G:GOTO77
79 CLS:PRINT"FILENAME: ";F$
80 PRINT:PRINT"FILE TYPE: ";TY$(AS
C(FT$))
81 PRINT"FILE FORMAT: ";:IF ASC(AF
$)=255 THENPRINT"ASCII" ELSEPRINT"
BINARY"
82 PRINT"GRANULES USED BY FILE:"
83 FORI=1 TO NG:PRINTG1(I);:NEXT:P
RINT
84 GOSUB96
85 GOTO11
86 CLS:PRINTTAB(5)"FILE ALLOCATION
TABLE":PRINT
87 INPUT"WHICH DRIVE (0-3)";D:IFD<
0 OR D>3 OR D<>INT(D) THEN87
88 DSKI$ D,17,2,A$,B$
89 CLS:SC=0
90 FORI=1 TO 68:T$=MID$(A$,I,1):GO
SUB103:PRINT"GRANULE #";I-1;" CONT
AINS ";N$
91 SC=SC+1:IFSC=14 THENGOSUB96:SC=
0:CLS
92 NEXT
93 IF SC<>0 THEN GOSUB96
94 GOTO11
95 END
96 PRINT@484,"PRESS [ENTER] TO CON
TINUE";
97 IFINKEY$<>CHR$(13)THEN97
98 RETURN
99 CLS:INPUT"DRIVE NUMBER (0-3)";D
:IFD<0 OR D>3 OR D<>INT(D) THEN99
100 CLS:INPUT"TRACK NUMBER (0-34)"
;T:IFT<0 OR T>34 OR T<>INT(T) THEN
100
101 CLS:INPUT"SECTOR NUMBER (1-18)
";S:IFS<1 OR S>18 OR S<>INT(S) THE
N101
102 RETURN
103 N$=STR$(ASC(T$)):RETURN

```

Well here we are again. I hope that you found my last article interesting enough to suffer through this one. I have been asked to write this article on the proper handling of disks and the proper care of disk drives. This may seem quite boring to some of you but if you pick up one good habit it may well be worth the effort of reading this article.

Let's first discuss disks. I hear a lot of talk that goes something like this: "Oh I would never buy those inexpensive disks they are much too error prone." Truth of the matter is there are very few disk manufacturers in the country and most of the distributors get their disks from the same source. Also as long as there is some sort of warranty on the disk you are probably going to be happy with them. Due to new technology all disks are created equal. This means all disk made by one manufacturer are created equal, but due to mass manufacture not all disk meet the same standards. After initial manufacturing then the disks are run through quality control. This is the process that decides what type of disk it will become. This ranges from what is known as DS/HD to SS/SD. A little explanation here. The first two letters stand for either single sided:SS, or double sided:DD. The last two letters are where it gets confusing. You have at the top HD: which is high density 96tpi, (tpi:tracks per inch), QD:quad density 96tpi, (these are sometimes called DD:96tpi so you must be alert), DD:double density 48tpi, and last SD:single density. These classifications are made by the amount of magnetic medium that gets onto the disk, the more medium on the disk the more data that can be stored safely. This figure ranges from DS/HD which can support 1.2 meg. to SS/SD which supports 84 k. That is a long spread for a single medium, and it is easy to see why one is much more expensive than the other. I might add that different distributors do have slightly different standards but most standards are so high that the disk in question can usually be used in the next class up, (In emergencies I personally have used my 80track 96tpi drive with single sided double density disks. This is not something that I recommend, but you do what you have to in emergencies). The clue here is if it formats the first time without error it will probably be good for at least a short time. But you should never try to use it in this manner for extended periods of time and always make sure you have the verify function on during such use. If the disk does

not format on the first try it may format on the next but this usually means there is some small problem and I recommend that if this happens you not use the disk, (disks are much cheaper than the headache involved with lost data). The conclusion of that rather long winded paragraph boils down to this don't be afraid to use discount priced disks just remember that disks do wear out and keep a backup of everything you do that is of even slight significance.

Flippies what are they and are they worthwhile? Flippy is a name given to disks which has had new index holes punched so they can be flipped over to use the other side of the disk. The disk can be flipped over thus doubling the storage on one disk. (we are talking about standard coco single sided systems here). You can get twice the storage per disk at approximately the same price. The disadvantages are: 1) The single sided disks are not verified on side two. 2) The disks when flipped over are made to rotate in the opposite direction.

Inside all disk jackets is also a protective lining for the disk. It's express purpose is to collect any foreign material which may find it's way into the jacket. This foreign material can cause premature disk head wear!! When the disk is turned over and started rotation in the opposite direction some of this dirt may come loose and attach itself to the disk, however if the disk is allowed to spin in this reverse direction with the drive door open this dirt will again be collected on the jacket lining. You do however still run the risk of a little more dirt accumulation on the drive head. There is no way to keep some of this gunk from accumulating on the disk head, even if you don't use flippies. That is why it is of extreme importance to clean your drive head at regular intervals, (suggested interval is every 30 days or 4 hours of use), If you are using flippies you should at least double this figure. I clean mine weekly. There is a lot of dirt out there in our air that is especially harmful to disks. One in particular that comes to mind is cigarette smoke. Your disk jacket lining will not remove this particularly nasty goo, But your head will!! If you smoke or someone in your house smokes increase your head cleaning routine. Routine maintenance is much cheaper than service maintenance!! Also the back side of single sided disks are not certified for double sided use so it is wise to use a double sided disk.

So lets do a recap: If you are going to use flippies be safe use DS/DD disks the extra money is worth the peace of mind knowing that your disk has been certified good both sides. Keep your disk head clean this goes whether you use flippies or not, if you use flippies clean your head more often. Disk head cleaning kits can be purchased almost anywhere that sells disks, i.e. Radio Shack, K-mart, Target, or any good computer store. When you flip a disk over do a dir with the drive door open this will allow the disk to spin without the head in contact. I might add here that the disk will not spin as much as with the door shut but it should still spin a few times at least. If you are punching your own flippies be very careful if you scratch the disk then it is ruined and can't be used at all so rather than doubling your storage you have cost yourself a good disk.

This was supposed to be a bout the proper care and handling of disks, a topic I have almost completely side stepped, but that is because disk care is fairly straight forward read the warning on the side of the box. I had also hoped to touch on the idea of backups. This topic seems to be pretty much run into the ground. Everyone talks about backups that is because it is very important to keep good backups. The problem is this no one ever keeps enough!! at some point all of you you will have a disk problem and say to yourself, "\*&%\$, I should have backed that up first". Keep your computer area clean the less dirt in the computer area the less problem you will have with all your computer peripherals. Dirt is as much a problem for cassettes and printers, as it is for your disk drives. Acquire a good disk head cleaning kit and use it regularly. Another good idea is to acquire a muffin fan (r/s #273-241 or 273-242), which can be placed near the rear of your disk drives for extra cooling of the power supply. Keep your disk away from any source of heat or magnetic environment and preferably in a disk box with a lid.

Well I have probably bored you all enough for this month and that should pretty much sum it up for this month as always your questions or comments are always welcome, but please send a sase if you require a reply, or I can be reached on the Coco Ads B.B.S. (713) 847-9070. Send all mail correspondence to:

Leslie Earl  
22118 Pearl Lake Rd  
Katy Tx. 77449

THE ASSEMBLY LINE  
PART 2.

THE FUNDAMENTALS  
BY JOHN GALUS

In this part of the series we will example the fundamental most often used Assembly language instructions. If you ever wish to do any work in Assembler it is important to have a firm grasp of these commands. These fundamental instructions will serve as a basis for all of the material in this series. We will begin with the Load and Store instructions.

The LOAD instruction takes the following format.

(R) Denotes REGISTER

(M) Denotes MEMORY OPERAND

(A) Denotes the ACCUMULATORS

LD (R)

The Load command allows you to get immediate data or a operand from memory and place this value in the specified register. The Load instruction performs a function similar to the PEEK command in Basic.

EX. LDA #10  
LDX \$3f00

The Store instruction:

ST (R)

The Store instruction is the inverse of the Load command and allows you to put or store a value held in the specified register into a memory location. The Store command is similar to the POKE command in Basic.

EX. STB \$0400  
STX -2,y

The Compare instruction:

CMP (R)

The Compare command compares the value held in the specified register with an immediate value or a operand from memory. What the compare actual does is performs a subtraction on the operand and sets the Condition Code Register according to the results. You could think of the compare instruction as being something like a Basic IF statement

EX. CMPA #'e  
CMPU \$6000

The Increment instruction:

INC (A) or (M)

The increment command simply increases the value held in a specified 8 bit A or B register or memory location by one. It performs a similar function as does the Basic statement A=A+1.

The increment command is only useful using the one byte A or B accumulators or a one byte memory position. In effect if a value held in a register or memory equals 255 (hex \$ff)

then is incremented the result will be zero.

EX. INCB

INC \$3000

The Decrement instruction:

DEC (A) or (M)

The Decrement command is the inverse of the increment. In the decrement the value held in either the Accumulators or memory is decreased by one. This is similar to the Basic statement A=A-1. If the value in the accumulators or memory equals zero and is then decremented it will then equal 255.

EX. DECA

DEC \$0410

The Branch Instructions:

There are many Branch instructions of different formats in this part of the series we will only concern

ourselves with two BEQ and BNE.

BEQ: BRANCH IF EQUAL TO (ZERO)

BNE: BRANCH NOT EQUAL TO (ZERO)

The Branch instructions tests the Condition Code Register and alters the program flow if the appropriate condition was met. This instruction with the Compare command performs a function similar to the IF/THEN statement in Basic.

EX. BEQ ZERO  
BNE NOZERO

The Transfer Instruction:

TFR (R),(R)

The transfer command allows you to transfer data between two registers of EQUAL size. The first register (Source) is the one you wish to transfer the data From and the second register (Object) is the one you wish to transfer this data to. The data in the Source register is unchanged and the data that was in the Object register is destroyed and the new data is placed there. The registers used in the transfer command must be of the same size or a error will result.

EX: TFR A,B  
TFR X,Y

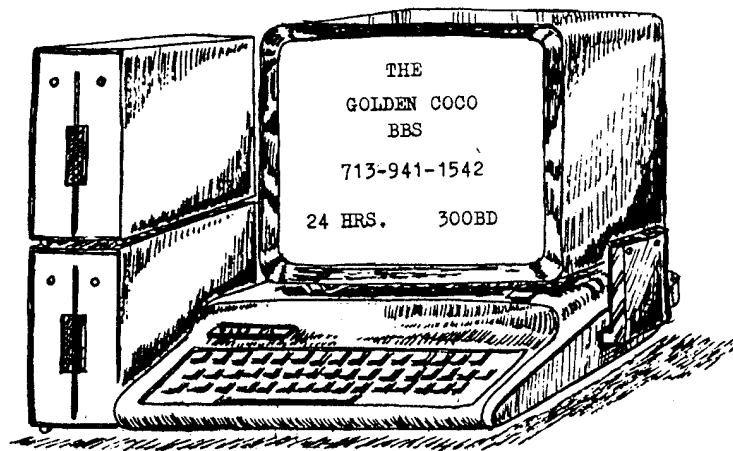
LOAD EFFECTIVE ADDRESS INSTRUCTION:

LEA (R)

The LEA command allows us to increment or decrement 16 bit registers such as the X or Y index registers. In this instruction the contents of the 16 bit register is added together with a 8 or 16 bit displacement.

EX: LEAX 1,x  
LEAY 1000,x  
LEAU -2,u

Using only these few fundamental commands we can create a Assembly language program using them. Let's say for example that we wish to clear the text screen in Assembler like the CLS command does in Basic. This is how we



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*
* QUARTZ CLOCK TIME
*
* WEATHER FCST - HAM RADIO
*
*****

```

would approach this problem. First, by looking in the back of our Basic manuals we see from the Memory Map that the Text screen in our computer is located at \$0400 to \$05ff. This is the area we wish to clear. We now wish to replace whatever is on the text screen with a solid green block. We find that this solid block equals the poke value of 128 or \$60. We know that we must place this solid block from \$0400 to \$05ff the text screen. One way we could solve this problem is to simply load the A register with #128 and store this value in A into the consecutive memory position starting at \$0400. For example:

```
LDA #128
STA $0400
STA $0401
STA $0402
STA $0403
ETC..... to STA $05ff
```

Of course this would work but would prove very tedious and a waste of your valuable time. There is a easier way, this is where the Addressing modes come into play. In this example Index Addressing will prove a solution to what would be a insurmountable task. Here is the solution using Index Addressing.

```
LDA #128 ;LOAD WITH BLOCK
LDX #$0400 ;POINT TO SCREEN
CLS STA ,X ;STORE AT X+1
LEAX 1,X ;ADD ONE TO X
CMPX #$0600 ;END OF SCREEN
BNE CLS ;BRANCH NOT =
SWI ;BACK TO MONITER
```

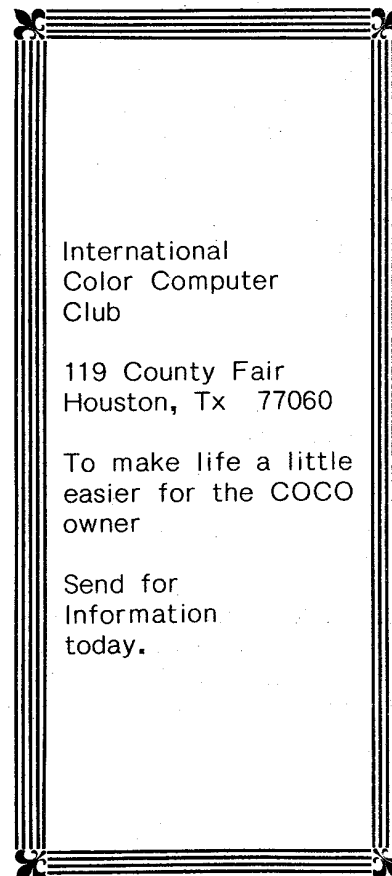
By taking advantage of some powerful features of the 6809 Assembler language you can see that we have done a lot of work with very few commands. This is how the program works. First we load the A register with the value 128 which equals the solid green block we wish to place on the screen. Next we load the X index register with the value of the beginning of the text screen. We then give the next line a Label called CLS and we store the value in A at the memory address that the X register points to. In the next line we add one to the X register using the Load Effective Address instruction. We next compare the value in the X register to see if it is equal to the end of the text screen plus one \$0600. If it not equal we then loop back to CLS untill we have reached the end of the screen. If we have reached the end of the text screen the test branch not equals fails since the value in the X register will equal \$0600 and the program falls through to the SWI command which when using EDTASM+ command returns us to the Assembler. If you

own a different Editor Assembler see your instruction manual for the correct statement to use on this last line. Another even easier way we could have cleared the screen is to call the ROM subroutine at \$a928 to perform this operation for you. One of the secrets of becoming a successful Assembly language programmer is to use every available shortcut in developing programs. An average Assembly language program may take from a month to several months to program so, why spend time writing code that has be conveniently provided for you. If you wish to find out more on the Basic ROM's subroutines see my previous series dealing with them called A ROMP TRU THE ROM covered starting in the April 1985 A5 issue of the CO CO=ADS. Back issues are available see further information in this magazine. In the next part we will continue with our discussion of the instruction set next time dealing with the math operations.

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On the subject of the upgrade kit, I'll quote from my reply...

"Our '256K RAM Kit' is in no way misrepresented. Since the birth of this industry, no PC manufacturer I'm aware of has sold any upgrade kit as cheaply as the parts can be bought by a competent do-it-yourselfer. Radio Shack's traditional retail business was built on that type customer... we love 'em. It's certainly your option to go that route.

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My correspondent also questioned our software support for the CoCo, and I pointed out that "Our newest catalog lists 188 offerings. It's not utopia... fifty times that number wouldn't satisfy every user. But if making available 188 software packages for a single CPU constitutes 'little or no support', then we along with just about every hardware manufacturer and the vast majority of PC retailers are guilty as charged."

To my knowledge, no other hardware manufacturer or retailer supplies anywhere near this number of packages for a single machine. Sure, there are several machines for which thousands of packages are available on the open market. Why isn't this true for the CoCo? Because, as one software retailer told me a few months ago, "We can't sell to CoCo or Model 4 owners... they want to buy only from Radio Shack. If they'd buy from us, we'd carry some software for 'em."

The message??? We'd like your business as often as we can earn it. But do patronize third-party vendors too! They expand your selection of available add-ons to help you enjoy your computer. And with that, I'll get off my soap box.

Tandy Corporation/Radio Shack. Send questions/suggestions to Ed Juge, director of market planning, 1700 One Tandy Center, Fort Worth, TX 76102

Like Microsoft BASIC, OS-9 provides error messages when something goes wrong. Normally these are in the form of error numbers, but you can have text messages if you prefer by using the printerr command that comes with OS-9. Invoke printerr by typing printerr<enter>. The next time there is an error, OS-9 will read the file, /DD/SYS/errmsg which contains a list of error numbers and associated messages. It will find the message that corresponds to the error number and print it to stderr, OS-9's standard error output, which is the screen unless you re-direct it.

Let's discuss the meaning of some of the common messages. Some of them seem obvious. Error #207, memory full, means just that. You tried to do something that requires more memory than you have available. At times this can be misleading. You might have 12k available to run a 10k program and still get a Memory Full Error if the 12k is broken up into two or more parts. If OS-9 can't allocate contiguous memory to a program it gives an Error #207.

Another common error is Error #221, Module Not Found. That means a program module was not found in memory. I get this one a lot with the new OS-9 2.0. I set up my bootfile without GRFO, the new graphics module. I knew I could always load it when it was needed. But sometimes I forget and run a program that uses some of its features and I get an Error #221. This can be baffling at first. Hires, from Frank Hogg's O-PAK will give the same error if the character set isn't in memory. This message is also used if a device is requested for which there is no descriptor. OS-9 looks in memory for a device descriptor module and when it can't find one, Error #221 is given. A device descriptor is needed for each device in the system.

If a file name is specified incorrectly, either Error #215, Bad Path Name, or Error #216, Path Name Not found, will result. Bad pathname means the name is not in a form that is acceptable to OS-9. Names must begin with a letter and can only contain letters, numbers, a period or an underscore character (a left arrow in low resolution). Also, names can't be more than 29 characters long. If a legal name is typed but OS-9 can't find it, error 216 is given. This is usually because the wrong disk is in the drive or because you are in the wrong directory. Keep in mind that some commands, like load,



default to the execution directory.

Error #218, File Already Exists, is used when a file is specified as an output file and it already exists in that directory. Most OS-9 commands that write files expect to create the file and can't open a file that's already there. To solve this you might use a different file name, or you can rename or delete the original one.

If there are files on the disk that belong to someone else and that have been protected, OS-9 will give an Error #214, No Permission, if you try to access them. When you create a file you are the file's owner and you can use the attr command to deny others permission to read, write or execute the file. You can even deny yourself these permissions, a handy thing to prevent accidentally deleting or changing a file. By the way, OS-9 knows who you are by your login name. On larger OS-9 systems users are required to give their names and passwords before they can use the systems. This isn't usually done on the Color Computer but if you want to set it up this way, read about the login command in the OS-9 commands manual. Error #214 is also used if you try to use a directory like a file, for example: to list it.

Another common error is Error #248, Media Full. This means the disk is full. Like a memory full error, this is given if OS-9 can't find contiguous space.

Error #002 is given when you use the break key to stop a program or command. This isn't an error in the usual sense. It's OS-9's way of letting you know why it stopped the program.

Printerr is a handy thing to have when you're learning your way around OS-9, but it has a couple of drawbacks. One problem is that it gives a text description of all errors that are made. Very soon you learn that Error #216 means Path Name Not Found, and you don't want to wait while the disk is read and the message is displayed. The listing that follows is a solution to that problem. Like printerr, it displays an error message, but it does so only when you ask for it. The format is err nnn<enter>, where nnn is the three digit error number. Err reads the /DD/sys/errmsg file and finds the proper text message and displays it.

Err should be entered using an editor. You can use either the Microware edit command included with OS-9 or any other editor you may have. The instructions here will be for the Microware editor.

Load the editor with the command edit vidkey<enter>. In a few seconds you will see

the E: prompt. That means you are in the editor. Type a space and that puts you into insert mode until you hit enter. Type the space, type the line, hit enter, and then repeat the sequence with the next line. If the line already begins with a space, then you should type two spaces. If you make a mistake before you hit enter, backspace, correct your mistake, and continue. If you make a mistake after you hit enter, you can go back to that line with the minus sign (-). Each time you hit the minus sign you move back 1 line farther. To move back to the beginning of the file, hit -\*. The asterisk means all the way. Likewise the plus sign (+) moves you forward, unless you're already at the end of the file. To move to the end of the file, type +\*. Each time you move to a different line, that line is displayed. If you type a letter d (no space here), that line will be deleted. Then a space and you're re-typing the line. This makes it easy to correct mistakes. After you do this, be sure to hit +\* to go to the end of the file before you enter any more lines. If you want to know more about the editor, there is a very full explanation in the OS-9 Program development manual.

Once the program is typed in and you are sure it is correct, type q (for quit) and the file will be written to disk. Now it must be assembled. To do this, type:

```
asm err o #12k
```

When the assembler is finished it will display an error count. If the count is not 0 then there is an error. Load the editor as before, find and correct the error, delete the error program from your commands directory and re-assemble the program. When it assembles correctly you have the err program in your commands directory, ready to use.

```
* error help command
* syntax: err nnn
* where nnn is an error code
* uses standard output
nam err
ifp1
use /d0/defs/os9defs
endc
```

```
MOD
MODEND,MODNAM,PRGRM+OBJCT,REENT+1,ENTRY,MEMSI
Z
MODNAM FCS /err/
edition fcb 1
```

```
BUFSIZ equ 200 size of input buffer
```

```

* Data Area

ipath rmb 2 input path number
prmptr rmb 2 parameter pointer
errnum rmb 5 error number stored here
buffer rmb BUFSIZ allocate line buffer
    rmb 200 allocate stack
MEMSIZ equ .

```

```

* Program Area

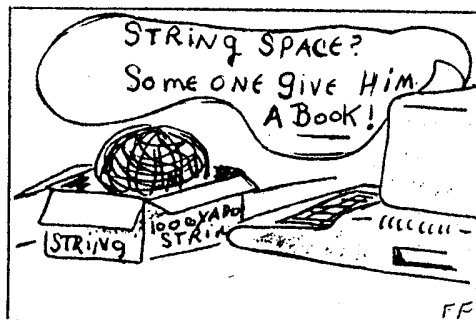
errmsg fcc ,/d0/sys/errmsg, file name
    fcb $0d
noerr fcc /Error not found/
    fcb $0d terminator
ENTRY equ *
    stx prmptr save parameter ptr
    clrb
    leay errnum,u point at errnum storage
getnum lda ,x+
    sta b,y save error number
    incb bump pointer offset
    cmpa #$0d done?
    bne getnum no, get more
    lda #READ. select read access mode
    leax errmsg,pcr -> file name
    OS9 I$open
    bcs error exit if error
    sta ipath save input path number
    errn lda ipath load input path number
    leax buffer,u load buffer ptr
    ldy #BUFSIZ maximum bytes to be read
    OS9 I$readln read line of input
    bcs rderr exit if error
    bsr compar is it the right error?
    bcs errn no, get another one
    leax buffer,u point x at buffer
    lda #1 load std. out path
    OS9 I$writln output the line
    bcs error exit if error
    bra fin That's all, folks
rderr cmpb #E$Eof at end of file?
    bne error branch if not
    lda #1 stdout path number
    leax noerr,pcr send the

```

```

    OS9 I$writln not found message
    fin lda ipath load input path number
    OS9 I$close close input path
    bcs error ..exit if error
    clrb
    error os9 F$exit ...terminate
*
* compare error number to line
*
    compar
    leax errnum,u -> error number
    leay buffer,u -> input line
    cmpr1 lda ,x+ get error byte
    cmpa #$0d is it a terminator
    beq maybe if so, its an equal
    cmpa ,y+ does it match
    bne cmpno
    bra cmpr1
maybe lda #$20 is the next char
    cmpa ,y in file a space?
    bne cmpno no, then not a match
    andcc #$fe yes, clear the carry
    rts
    cmpno orcc #$01 set the carry
    rts
    emod
MODEND equ *

```



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```

10 PMODE4,1:PCLS1:SCREEN1,1:COLOR0
,1
20 A$="U14R3D11R6D3L9;BR17R6E2U10H
2L6G2D10F2BU3R5U8L5D8BD3;BR18R3U11
R5U3L13D3R5D11;BR18R3U11R5U3L13D3R
5D11;BR17R6E2U10H2L6G2D10F2BU3R5UB
L5D8"
30 DRAW"BM86,35"+A$:FORT=1T0500:NE
XTT
40 DRAW"SB;BM50,80"+A$:FORT=1T0500
:NEXTT
50 DRAW"S12;BM10,145"+A$:FORT=1T05
00:NEXTT
60 B$="UBR8D4L8BR8D4L8BR12;BU8F4E4
BG4D4BR8;BR12;BR12;U4BU4BR8D8L8BR1
2;BU8R8BL4D8BL4R8BR4;UBF4E4D8BR4"
70 C$="UBR8D4L8BR8D4L8BR12;UBR8D4L
8BR8D4BR4;UBR8R8G4L4BR4F4BR4;UBR8BD
4L8BD4R8BR4;UBR8D4L8BR4F4BR4
80 DRAW "S4;BM38,175"+B$
90 DRAW "BM145,175"+C$
100 FOR T=1T01200:NEXTT
110 CLS:PRINT@109," MENU ":PRINT@1
70," 1 - PICK 3 ":PRINT@234," 2 -
PICK 4 ":PRINT@298," 3 - PICK 6 "
:PRINT@358," INPUT 1, 2, OR 3 "
120 INPUTD$:IFD$="1"THEN130 ELSE I
F D$="2"THEN240 ELSE IF D$="3"THEN
RUN330 ELSE110
130 CLS:PRINT@98,"THREE NUMBER PIC
K";

```

```

140 FOR X=1T010:C=RND(10):B(X)=C
150 IF B(X)=10 THENB(X)=0
160 SOUND58,1
170 NEXTX
180 CLS
190 PRINT@98,"YOUR THREE NUMBERS A
RE "
200 PRINT:FOR X=1T03:PRINTB(X);
210 NEXTX
220 PRINT@228,"DO YOU WANT TO TRY
AGAIN":PRINT:PRINT" 1 - ANOTHE
R PICK THREE":PRINT" 2 - MENU"
:PRINT" 3 - QUIT":PRINT:PRINT"
ENTER 1, 2, OR 3"
230 INPUTA$:IF A$="1" THEN130ELSE
IF A$="2" THEN110 ELSE IF A$="3"TH
EN440ELSE230
240 CLS:PRINT@98,"FOUR NUMBER PICK
"
250 FOR X=1T010:C=RND(10):B(X)=C
260 IF B(X)=10THENB(X)=0
270 SOUND100,1
280 NEXTX
290 CLS:PRINT@98,"YOUR FOUR NUMBER
S ARE"
300 PRINT:FOR X=1T04:PRINT B(X);:N
EXTX
310 PRINT@228,"DO YOU WANT TO PICK
AGAIN":PRINT:PRINT" 1 - ANOT
HER PICK FOUR":PRINT" 2 - MEN
U":PRINT" 3 - QUIT":PRINT:PRI
NT" ENTER 1, 2, OR 3"
320 INPUT A$:IFA$="1"THEN240ELSE I
F A$="2"THEN110 ELSE IF A$="3"THEN
440ELSE320
330 CLS:DIMA(40):DIMB(40):FOR X=1T
040:A(X)=X:NEXTX
340 CLS:PRINT@98,"SIX NUMBER PICK"
:FORX=1T040
350 C=RND(40)
360 IFA(C)=0THEN350
370 B(X)=C
380 SOUND150,1

```

All the programs that appear in this issue of COCO ADS are available already typed in and running. On cassette for only \$4.00 and on disk for only \$5.00 sent first class mail. Just fill in the below coupon and mail in with payment.

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```

390 A(C)=0:NEXTX
400 CLS:PRINT@98,"YOUR SIX NUMBERS
ARE
410 PRINT:FOR X=1TO6:PRINTB(X);:NE
XTX
420 PRINT@228,"DO YOU WANT TO PICK
AGAIN":PRINT:PRINT"      1 - ANOT
HER PICK SIX":PRINT"      2 - MENU
":PRINT"      3 - QUIT":PRINT:PRIN
T"      ENTER 1, 2, OR 3"
430 INPUTA$:IF A$="1"THENRUN330 EL
SE IF A$="2"THENGOTO110 ELSE IF A$
="3" THENGOTO440 ELSE430
440 PMODE4,1:PCLS5:SCREEN1,1:COLOR
0,1
450 DRAW"SB;BM26,80U20R16D4L12D12R
8U4L2U2R8D2L2D8L16":PAINT(27,79),0
,0
460 DRAW "SB;BM76,80U20R16D20L16BE
4U12R8D12L8":PAINT(77,79),0,0
470 DRAW"SB;BM126,80U20R16D20L16BE
4U12R8D12L8":PAINT(127,79),0,0
480 DRAW"SB;BM176,80U20R14F2D16G2L
14BE4U12R6F2D8G2L6":PAINT(177,79),
0,0
490 DRAW"SB;BM32,150U20R4D16R10D4L
14":PAINT(33,149),0,0
500 DRAW "SB;BM76,150U20R4D16R8U16
R4D20L16":PAINT(77,149),0,0
510 DRAW"SB;BM126,150U20R16D4L12D1
2R12D4L16":PAINT(127,149),0,0
520 DRAW"SB;BM176,150U20R4D6E6D5G5
F10L5H6D6L4":PAINT(177,149),0,0
530 FORT=1TO1500:NEXTT:POKE113,0:E
XEC40999

```

SPELLING HELPER

THIS PROGRAM IS A SPELLING HELPER/TEACHER. IT WILL LET YOU MAKE A LIST,SAVE/LOAD A LIST,ADD TO CURRENT LIST, AND VIEW CURRENT LIST. DEPENDING ON WHETHER OR NOT YOU HAVE A DISK SYSTEM, SOME CHANGES CAN BE MADE TO PERMIT CASSETTE USAGE. THESE CHANGES ARE IN LINES 40,42,44,46,48,50,51,53. (EDITOR NOTE:PLEASE PRINT THEN NESSASARY LINES.)

THANK YOU  
JESSE SANDERS"

```

10 C=128+16*(3-1)+0:A$=CHR$(C)
20 FOR X=1TO20
30 CLS0
40 PRINT@235,"superspell"A$;A$;A$;
A$;A$;A$;A$;A$;A$;A$;A$;
50 CLS
60 PRINT@235,"SUPERSPELL"
70 FORT=1TO10:NEXTT:NEXTX
80 CLS
90 '*****BY JESSE SANDERS*****

```

```

100 '*****P.O. BOX 84*****
110 '*****CHIMNEY ROCK*****
120 '*****COLORADO 81127*****
130 DIMN(100):DIMW$(100)
140 CLS:PRINTTAB(12)"MENU"
150 PRINTTAB(8)"1. MAKE LIST"
160 PRINTTAB(8)"2. PRACTICE LIST"
170 PRINTTAB(8)"3. SAVE LIST"
180 PRINTTAB(8)"4. LOAD A LIST"
190 PRINTTAB(8)"5. VEIW CURRENT LI
ST"
200 PRINTTAB(8)"6. ADD TO CURR. LI
ST"
210 PRINTTAB(8)"7. END"
220 INPUT">>";A
230 ON A GOTO 240,330,400,460,550,
570,640
240 CLS:PRINT:INPUT"HOW MANY WORDS
IN YOUR LIST";N
250 IF N=0THEN GOTO 140
260 FOR X=1TON
270 INPUT"WORD";W$(X)
280 NEXT
290 CLS
300 FORR=1TON:PRINTW$(R),:NEXT
310 LINE INPUT"ARE THESE CORRECT(Y
/N)";L$
320 IF L$="Y" THEN GOTO140 ELSE GO
TO 240
330 CLS:PRINT:PRINT"HOW MANY SECON
DS TO FLASH":INPUTT
340 T=T*500:FORQ=1TON
350 PRINT W$(Q):FORT2=1TOT:NEXTT2
360 CLS:INPUT"SPELL WORD";Z$
370 IF W$(Q)=Z$ THEN PRINT"GOOD JO
B" ELSE PRINT"MISPELLED"
380 NEXT Q
390 INPUT"TRY AGAIN";A$:IF A$="Y"
THEN 330 ELSE 140
400 INPUT"NAME OF FILE";N$:N$=N$+
/DAT":OPEN"O",#1,N$
410 FOR Q=1TON
420 WRITE #1,W$(Q)
430 NEXT Q
440 CLOSE#1
450 GOTO 140
460 INPUT"NAME OF FILE";N$:N$=N$+
/DAT":OPEN "I",#1,N$
470 N=0
480 IF EOF(1)=-1 THEN 530
490 N=N+1
500 INPUT #1, W$(N)
510 PRINT W$(N)
520 GOTO480
530 CLOSE #1
540 A$=INKEY$:IF A$=""THEN540ELSE1
40
550 CLS:FORX=1TON:PRINTW$(X),:NEXT

```

```

560 A$=INKEY$:IF A$=""THEN560ELSE1
40
570 INPUT" HOW MANY WORDS ON YOUR
LIST SO FAR";Z
580 INPUT"HOW MANY WORD TO ADD";V
590 V=V+N:Z=Z+1
600 FORN=Z TO V
610 INPUT"WORD";W$(N)
620 NEXT
630 GOTO 140
640 END

```

UNSCRAMBLE ARTICLE  
BY GREGORY A. COOK

One day I tried to do a scrambled word puzzle and was completely lost and frustrated only after a few tries. You take a 6 letter word, for instance. That doesn't look like to much of an obstacle. However, I figured out how many possible word combinations you can have with this 6 letter word. There are 720 possible words that can be made from this one word. Now for me that is far to complicated for my brain to figure out. Especially since I can't think more than 3 moves in advance when I play chess. So I thought, why don't I let the COCO do the work for me. What follows was one of my first attempts at program writing when I first got my '4K' COCO. It has been since updated to a 64K COCO.

The program is simple with nothing fancy or tricky. Type in the following program and run it. Input your scrambled word up to 6 letters. If you use 'ABCDEF' for example, you will see how this program moves the letters around to get the various combinations. If there are 2 or more of the same letters in your scrambled word, you will get some repeat words as it looks at each letter as being different.

There will be displayed on the screen 24 words at a time with each screen being numbered. With a 2 letter word there are only 2 combinations. With a 3 letter word, 9 combinations, 4 letters, 24 combinations, 5 letters, 120 word combinations and 6 letters there are 720 possible combinations.

At the end of the program you are given the option of a printed copy. It will print out 2 columns of words as you saw on the screen. Of course a 6 letter word can use up an awful lot of paper, therefore I prefer to use just the screen. If you choose not to print a hard copy you will be returned to the beginning to start again.

```

1 UNSCRAMBLE
2
3
4 GREGORY A. COOK
5 510 S. DIXIE AVE.
6 FRUITLAND PARK, FL 3273
7
8
9
10 CLS
11 PRINT@7,"SCRAMBLED WORD";
12 INPUT WW$
15 W$=WW$
16 T=0
17 IF G=1 THEN PRINT#-2
20 L=LEN(W$)
30 IF L<2 OR L>6 THEN 5
40 L$=STR$(L):L%=RIGHT$(L$,1)
50 GOSUB 1000:GOSUB 2000
60 GOSUB 5000
90 IF G=0 AND L=3 THEN 9000
100 GOSUB 5500
120 GOSUB 5000
160 GOSUB 5500
180 GOSUB 5000
190 GOSUB 1000:GOSUB 6000
200 GOSUB 1000:GOSUB 2000
210 GOSUB 1000:GOSUB 5000
215 IF G=1 AND L=4 THEN END
220 IF G=0 AND L=4 THEN 9000
221 GOSUB 1000:GOSUB 7000
222 T=T+1:IF G=1 THEN 230
223 PRINT:PRINT" PAGE NO.
"T
224 PRINT@489,"PRESS <ENTER>"
225 Z$=INKEY$:IF Z$="" THEN 225
230 IF T=5 OR T=10 OR T=15 OR T=20
OR T=25 OR T=30 THEN 240 ELSE 50
240 IF G=1 AND L=5 THEN END
250 IF G=0 AND L=5 THEN 9000
255 IF T=25 THEN GOSUB 8500:GOTO 5
0
256 IF T=30 THEN 290
260 GOSUB 1000:GOSUB 8000
270 IF T=25 THEN GOSUB 8500
280 IF T<30 THEN 50
290 IF G=1 AND L=6 THEN END
300 IF G=0 AND L=6 THEN 9000
310 END
1000 F$=RIGHT$(W$,1)
1010 E$=MID$(W$,L-1,1)
1030 P$=LEFT$(W$,L-2)
1040 IF L=2 THEN RETURN
1050 D$=MID$(W$,L-2,1)
1060 IF L=3 THEN RETURN
1070 C$=MID$(W$,L-3,1)
1080 IF L=4 THEN RETURN
1090 B$=MID$(W$,L-4,1)
1100 IF L=5 THEN RETURN
1110 A$=LEFT$(W$,1)

```

```

1120 RETURN
2000 NW$=F$+E$
2002 IF G=1 THEN 2010
2004 PRINT W$,P$+NW$:GOTO 2020
2010 PRINT#-2,W$;TAB(7);(P$+NW$)
2020 W$=P$+NW$
2022 IF G=1 AND L=2 THEN END
2025 IF G=0 AND L=2 THEN 9000
2030 RETURN
3000 NW$=E$+D$+F$
3005 P$=LEFT$(W$,L-3)
3010 W$=P$+NW$
3030 RETURN
4000 NW$=D$+C$+E$+F$
4010 P$=LEFT$(W$,L-4)
4020 W$=P$+NW$
4030 RETURN
5000 FOR X=1 TO 2
5010 GOSUB 1000:GOSUB 3000
5020 GOSUB 1000:GOSUB 2000
5030 NEXT X
5040 RETURN
5500 GOSUB 1000:GOSUB 4000
5510 GOSUB 1000:GOSUB 2000
5520 RETURN
6000 NW$=F$+D$+E$+C$
6010 P$=LEFT$(W$,L-4)
6020 W$=P$+NW$
6030 RETURN
7000 NW$=C$+B$+D$+E$+F$
7010 P$=LEFT$(W$,L-5)
7020 W$=P$+NW$
7030 RETURN
8000 GOSUB 7000:GOSUB 1000
8010 W$=E$+F$+D$+C$+A$+B$
8020 GOSUB 1000
8030 W$=A$+D$+E$+B$+C$+F$
8040 RETURN
8500 GOSUB 1000:GOSUB 7000
8510 GOSUB 1000
8515 W$=C$+B$+A$+D$+E$+F$
8520 RETURN
9000 PRINT@452,"WANT A HARD COPY?
(Y/N)"
9005 Z$=INKEY$:IF Z$="" THEN 9005
9010 IF Z$="N" THEN 10
9020 IF Z$<>"Y" THEN 9005
9050 G=1:GOTO 15

```

## WARP FACTOR X

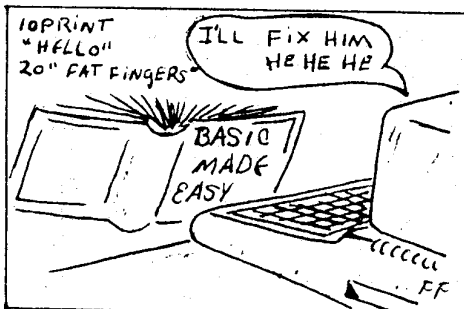
Warp Factor X is a Star Trek simulation sold by Prickly-Pear Software. It is hardly the ultimate graphic simulation but it is the best trek program that I have ever seen. (I am a first generation trekkie!) This program uses disk files that are accessed during the game. Typing the command "RUN"WARP", I was asked to chose the type Coco that I had. Having a 64K COCO 2, I entered 64K. Then the screen asked for my name and password(!). After signing on, I finally got to the game.

Starbases, planets and Klingons are placed at random in each sector. Phasers and photon torpedoes are the weapons that you are equipped with. I got killed within 10 minutes the first time out. 2 Klingon ships and 1 Klingon base had me trapped between them. (ouch!)

The program is in BASIC, using a bank switching routine for sound effects. It is not copy-protected and backups for your own use are encouraged. The game is very involved and a player would get deeply interested in the outcome very quickly. Scores are saved from each round and stored on disk. Wayne Morse did some great work on this game. However, I noted that some of the files were arbitrarily set. Ten torpedoes are provided at the start. According to the Starfleet history of spaceflight, the ENTERPRISE had 55 to 100 torpedoes at any one time. I know this sounds like nitpicking, but I like it to be true to the series itself.

I recommend WARP FACTOR X to anyone who like to be Captain Kirk for awhile. It is well worth the money.

KEITH W. SMITH



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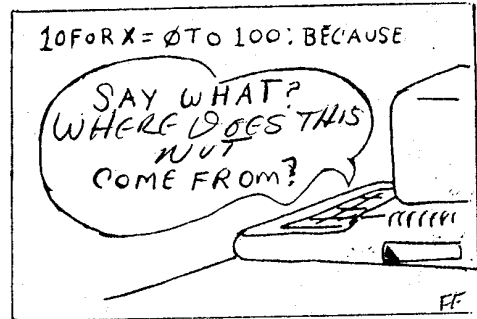
INDY COLOR COMPUTER CLUB  
CONTACT PAUL LORETTA 545 2135  
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INDIANAPOLIS, IN

COLOR-6809 USERS GROUP  
ST PETERSBURG, FL 813 323 3570

THE MOBILE SPECIAL INTEREST  
GROUP. 2056 SOUTH MCRAY DR.  
MOBILE, AL 36605. C/O STEVE  
POATES (205) 473 1048

IF YOU BELONG TO A COCO CLUB,  
SEND IN YOUR NAME AND ADDRESS  
AND WE'LL ADD IT TO THE LIST.  
IF YOU KNOW OF A CLUB THAT HAS  
BROKEN UP, PLEASE LET US KNOW  
AND WE WILL REMOVE IT FROM THE  
LIST.

P D SOFTWARE (CLUBS)  
P.O. BOX 13256  
HOUSTON, TX 77219



### COCO BULLITEN BOARD SYSTEMS

|              |                      |    |
|--------------|----------------------|----|
| 201 267 1207 | THE ARMORY           | NJ |
| 201 376 4462 | THE MORGUE           | NJ |
| 201 486 2956 | CFONJ                | NJ |
| 201 526 6839 | THE AIRPORT          | NJ |
| 201 564 6112 | COCO NUTS            | NJ |
| 201 569 0162 | NAME UNKNOWN         | NJ |
| 201 572 0617 | COLORAMA COCO BBS    | NJ |
| 201 637 6286 | B&J SOFTWARE ORDER   | NJ |
| 201 637 6644 | B&J SOFTWARE 24HR    | NJ |
| 201 657 0611 | COLOR CORNER         | NJ |
| 201 725 5028 | CCIE #1              | NJ |
| 201 773 8265 | MEADOWLANDS BBS      | NJ |
| 201 790 6795 | PHOTO-80             | NJ |
| 201 827 7815 | SUSSEX CO BBS        | NJ |
| 201 928 0949 | COCO CREATIONS       | NJ |
| 201 928 9488 | COCO CREATIONS       | NJ |
| 203 229 6481 | COOL COCO OS9        | CT |
| 203 237 2668 | DAVE SCHWARTZ        | CT |
| 203 334 5778 | MISSION CONTROL      | CT |
| 205 649 2894 | UNKNOWN              | AL |
| 206 255 5150 | LIGHT HOUSE          | WA |
| 206 256 2321 | NW COLOR CONN        | WA |
| 206 256 6624 | DIAL YOUR MATCH      | WA |
| 206 425 2576 | KWCBBS               | WA |
| 206 435 4803 | COLORAMA             | WA |
| 206 692 8408 | US ONLINE            | WA |
| 206 762 5141 | MINI-BIN             | WA |
| 206 883 0403 | JCTS                 | WA |
| 207 596 0556 | MAINE-FRAME          | ME |
| 209 223 3800 | GOLD COUNTRY         | CA |
| 209 836 1074 | KEN DENNY            | CA |
| 212 423 4623 | ARNOLD SCHIFFMAN     | NY |
| 212 682 0681 | GRAND CENTRAL TERMIN | NY |
| 212 682 0681 | STEVE SCHECHTER      | NY |
| 213 244 1100 | FANTASY PLAZA        | CA |
| 213 258 0640 | MASASHI COLOR 80     | CA |
| 213 388 5198 | MAGNETIC FANTASIES   | CA |
| 213 690 4589 | NEXT STEP            | CA |

|              |                      |    |              |                    |    |
|--------------|----------------------|----|--------------|--------------------|----|
| 213 773 3024 | COBBS #8             | CA | 404 378 4410 | COCO BOARD HQ      | GA |
| 213 926 9553 | DATA EXCHANGE        | CA | 404 924 1248 | COCOSERVE          | GA |
| 214 579 1840 | IRVING BBS           | TX | 405 248 8433 | SHAMBALA           | OK |
| 214 686 4796 | FLYING FORTRESS      | TX | 405 728 7654 | COCO INC           | OK |
| 214 769 3036 | MICROSERVE           | TX | 408 629 2277 | MICROBUR BBS       | CA |
| 214 784 7883 | NE TX BBS            | TX | 408 646 1850 | PEN-CO BBS         | CA |
| 215 244 0864 | THE CITADEL          | PA | 408 733 6809 | SHAWN JIPP         | CA |
| 215 768 0699 | COBBS                | PA | 408 984 7937 | RAINBOW CONNECTION | CA |
| 215 857 3035 | JOE BRACH            | PA | 409 983 2383 | COCO CLUB BBS      | TX |
| 215 866 1805 | COLORAMA             | PA | 412 479 3786 | COLORAMA           | PA |
| 216 788 7910 | COCO NUT TREE        | OH | 412 744 2335 | COCONET            | PA |
| 217 359 9577 | CCSH BBS 1           | IL | 413 532 9631 | COCO NUT           | MA |
| 217 753 3167 | LINK UP              | IL | 414 699 3214 | COLOR 80           | WI |
| 217 893 0453 | CCSH #1              | IL | 414 793 4055 | MIDWEST DATA       | WI |
| 219 234 9717 | SAGCOM COCO LINE     | IN | 415 364 2658 | REDWOOD BOARD      | CA |
| 301 344 9156 | NASA GET AWAY SPEC   | MD | 415 552 8268 | KINKY KOMPUTER     | CA |
| 301 599 1726 | JOE SARTORI          | MD | 415 651 4147 | AARDWOLF EXPRESS   | CA |
| 301 736 9425 | COLORAMA             | MD | 415 782 4402 | EAST BAY BBS       | CA |
| 303 249 7866 | CHUCK DAVID          | CO | 415 991 4911 | X-RATED BOARD      | CA |
| 303 278 4244 | UFONET               | CO | 416 494 7001 | COLOUR BBS         | ON |
| 303 297 9127 | TRASH HEAP TBBS      | CO | 416 653 2248 | COLOUR DRAGON 1    | ON |
| 303 634 8342 | COBBS                | CO | 416 689 7950 | DAVES DATACOM      | ON |
| 303 690 4566 | TBBS #1 H.Q.         | CO | 416 743 6221 | COCO NUT           | ON |
| 303 690 9423 | CONTROLLER BOARD     | CO | 416 823 4521 | COLOUR DRAGON 2    | ON |
| 304 599 0760 | MOUNTAINEER          | WV | 501 735 5614 | COBBS 1            | AR |
| 304 925 3338 | BOB VAUGHZN          | WV | 502 365 7785 | COLORAMA           | KY |
| 305 274 3394 | REMOTE OS9           | FL | 502 937 4594 | COLORAMA           | KY |
| 305 281 0325 | INTELLIBOARD         | FL | 503 649 4497 | BEE COLOR BBS      | OR |
| 305 533 0333 | BOB BOYCE            | FL | 503 761 6345 | BIT BUCKET SYS     | OR |
| 305 681 8490 | COCO CORNER 2        | FL | 504 277 6926 | CHALMETTE BBS      | LA |
| 305 683 6044 | INFOEX-80            | FL | 504 876 1790 | BAYOU BOARD        | LA |
| 305 686 4862 | THE NOTEBOOK         | FL | 504 885 5619 | STARBASE 6809      | LA |
| 305 731 6097 | COMTECH              | FL | 512 285 5028 | COLORAMA           | TX |
| 305 751 6809 | COLOR INFO CENTER    | FL | 512 353 1508 | COLORAMA           | TX |
| 305 997 6830 | JERRY WEISS SYSOP    | FL | 512 674 0264 | SA COLOR BOARD     | TX |
| 306 789 7883 | PHOENIX BBS          | AZ | 513 236 8307 | DACCUG             | OH |
| 308 665 1526 | COLORAMA             | NE | 513 396 7467 | CINSOFT            | OH |
| 312 278 9513 | HOWARD MED SYS       | IL | 513 399 1262 | COLORAMA           | OH |
| 312 359 9450 | CO-OPERATIVE COMP    | IL | 513 474 2985 | CINTUG             | OH |
| 312 397 8308 | OS9 USERS GP         | IL | 514 658 3087 | COLOR 80 #7        | QU |
| 312 597 8485 | CREME DE COCO        | IL | 515 277 6510 | COCO CLUB          | IA |
| 312 679 8111 | ENCHANTED TOILET     | IL | 516 277 1285 | COLORAMA           | NY |
| 312 720 0796 | COCO EXTRACORDINARIE | IL | 516 331 3718 | COLORAMA           | NY |
| 312 879 6811 | SPEECH SYSTEMS       | IL | 516 673 9452 | UNKNOWN            | NY |
| 313 662 8303 | BARTON DATA LINE     | MI | 517 339 3367 | COOMPUNET          | MI |
| 313 981 5061 | COCO CLUB            | MI | 517 793 1579 | C/NET              | MI |
| 314 428 2692 | AS IS SOFTWARE       | MO | 602 245 0488 | COCO NET           | AZ |
| 315 437 4890 | ANORIN MICROWAVE     | NY | 602 245 0488 | DENNIS CONNOLLY    | AZ |
| 315 446 7793 | COMPUTER STORE       | NY | 602 298 0730 | SUPER COCO BBS     | AZ |
| 315 487 0503 | COLOR 80             | NY | 602 344 8070 | TBBS               | AZ |
| 315 986 4828 | COLOR 80 #12         | NY | 602 899 1350 | COCO PUB           | AZ |
| 316 663 3600 | SALT CITY SWAPPER    | KS | 602 996 8828 | MOTOROLA COCO BUGS | AZ |
| 316 686 3813 | COLOR 80             | KS | 604 585 0680 | COLOR 80           | BC |
| 317 873 5808 | COCO HOTLINE         | IN | 604 738 2773 | COLOR PACIFIC      | BC |
| 319 277 0646 | COMPUTER CELLAR      | IA | 609 399 7108 | COLORAMA           | NJ |
| 319 396 8875 | BLOOM COUNTY HERALD  | IA | 609 448 1361 | TARDIS             | NJ |
| 401 272 1138 | SYSLINK HQ           | RI | 609 448 7768 | COCO ENTERPRISE    | NJ |
| 401 765 2890 | COLORAMA             | RI | 612 434 9186 | OUTHOUSE           |    |
| 403 474 0147 | NORTERN ALBERTA COCO |    | 612 699 5657 | PH.B.I. PHREAKERS  |    |
| 403 564 4118 | WES-CAN BBS          |    | 614 754 1971 | COLORAMA           |    |

|              |                      |    |              |                   |    |
|--------------|----------------------|----|--------------|-------------------|----|
| 615 581 9752 | COCO POWER           | TN | 813 321 0397 | EMERY MANDEL      | FL |
| 615 839 3130 | COLORAMA             | TN | 813 345 8100 | 6809 SIG          | FL |
| 615 842 6809 | 68 MICRO             | TN | 813 474 0491 | JIM KOCCMOND      | FL |
| 615 982 8232 | DISK FIX             | TN | 813 677 9530 | MICROWORLD        | FL |
| 615 983 6163 | REBEL CORNER         | TN | 813 733 2415 | DUNEDIN TBBS      | FL |
| 615 983 7180 | COM-NET 1            | TN | 813 879 1105 | COCO BBS          | FL |
| 616 345 0536 | SUNBURST             |    | 813 879 1105 | ERIC BODLEY       | FL |
| 617 321 6809 | ORMAN BECKLER        | MA | 813 924 2626 | COLOR 80 41       | FL |
| 617 472 8612 | PHOTO TALK           | MA | 815 458 6628 | COLORAMA          | IL |
| 617 646 6809 | LOGICAL PRODUCTS     | MA | 816 232 4932 | DRANGONS LIAR     | MO |
| 617 872 5170 | FARMINGHAM           | MA | 816 436 2904 | FRISKY COCO       | MO |
| 617 879 4086 | GATOR BOWL           | MA | 817 232 2087 | FORT WORTH BBS    | TX |
| 619 368 3478 | INNER CONN           | CA | 817 641 0133 | DRANGONFIRE BBS   | TX |
| 619 437 1130 | MONITOR              | CA | 817 767 5847 | COMMNET 80        | TX |
| 701 281 0233 | DAKOTA DATA          | ND | 817 789 2254 | TY TRAVERS        | TX |
| 701 839 0390 | COUNTRY MICRO BBS    | ND | 818 335 6554 | COLOR AMERICA BBS | CA |
| 703 476 1147 | SAMOHT BBS           | VA | 818 787 0433 | OFFICIAL COMP     | CA |
| 703 631 8577 | SHADOW KEEP          | VA | 818 886 6041 | PLAIN RAP         | CA |
| 703 680 3075 | COLORAMA             | VA | 818 996 1977 | TRS 80 COUNTRY    | CA |
| 704 264 7381 | INFORMATION EXCHANGE | NC | 902 434 5278 | COLORAMA          | NS |
| 704 541 3306 | SAOCNC               | NC | 902 683 2086 | COLORAMA          | NS |
| 707 257 1485 | PHIL RUSIN           | CA | 902 857 9843 | COLORAMA          | NS |
| 707 437 6336 | FALCON COLOR 80      | CA | 904 264 0335 | WIZARD PENDLETON  | FL |
| 713 280 8711 | NASA                 | TX | 904 456 7195 | GARY DUNSFORX     | FL |
| 713 354 3717 | COBBS'               | TX | 904 728 4859 | MICRO CONNECTION  | FL |
| 713 666 9076 | NETHER WORLD         | TX | 907 356 2626 | KERRY CLABAUGH    | AK |
| 713 847 9070 | -- COCO ADS --       | TX | 912 232 4582 | UNDERSEA          | NY |
| 713 923 6809 | COCO LOGO            | TX | 912 686 5917 | NASHVILLE SHOP    | GA |
| 713 941 1542 | GOLDEN COCO          | TX | 913 384 2196 | ONLINE BETA       | KS |
| 713 946 2825 | DATA BASE            | TX | 913 432 5544 | MOVIE GD          | KS |
| 714 350 2668 | COLOR CORNER         | CA | 914 362 1422 | TELEMATION OS9    | NY |
| 714 354 8004 | KANDY SHACK          | CA | 914 738 6857 | M&M BBS           | NY |
| 714 359 1586 | GROWTH NET BBS       | CA | 914 961 8049 | WESTCHESTER BBS   | NY |
| 714 534 5174 | ORANGE COCO          | CA | 914 965 2355 | WESTCHESTER BBS   | NY |
| 716 473 2334 | COLORAMA             | NY | 914 965 7600 | COLORAMA          | NY |
| 717 652 8659 | COLORAMA             | PA | 916 381 8788 | SACRAMENTO        | CA |
| 718 441 3755 | RAINBOW CONNECTION   | NY | 916 753 4066 | UNIV OF COCO      | CA |
| 718 441 3766 | RAINBOW CONNECTION   | NY | 919 425 7139 | COLOR 80 82       | NC |
| 718 441 5719 | RAINBOW CONNECTION   | NY | 919 758 5261 | SANGARNET         | NC |
| 718 441 5907 | RAINBOW CONNECTION   | NY |              |                   |    |
| 718 499 1633 | CALL BOARD           | NY |              |                   |    |
| 718 499 1633 | ELECT. CALL BOARD    | NY |              |                   |    |
| 718 727 1781 | TELE-NET             | NY |              |                   |    |
| 718 837 2881 | KING BYTE C.C.       | NY |              |                   |    |
| 800 323 0905 | MCI MAIL SERVICE     |    |              |                   |    |
| 803 279 5392 | AUGUSTA TBBS         | SC |              |                   |    |
| 803 288 0613 | DLOAD OS9            | SC |              |                   |    |
| 803 669 3275 | PRO-COLOR            | SC |              |                   |    |
| 803 791 7389 | MIDLAND 80           | SC |              |                   |    |
| 804 285 0041 | SKELTON ISLAND       | VA |              |                   |    |
| 804 862 4663 | 3 MUSKETEERS         | VA |              |                   |    |
| 804 868 0922 | PEN COLOR BD         | VA |              |                   |    |
| 804 868 0922 | PENINSULA COCO BD    | VA |              |                   |    |
| 804 887 5302 | GAMMA COLOR 80       | VA |              |                   |    |
| 805 484 5491 | COLORAMA             | CA |              |                   |    |
| 805 656 3746 | VENTURZ BBS          | CA |              |                   |    |
| 805 687 9400 | COCO CORNER 1        | CA |              |                   |    |
| 806 374 9711 | BURG BOARD           |    |              |                   |    |
| 812 476 9453 | EVANSVILLE           | IN |              |                   |    |
| 813 321 0397 | COMPUNET BBS         | FL |              |                   |    |

THE ABOVE LIST IS A COLLECTION OF BULLITEN BOARD SYSTEMS. WE DID NOT HAVE TIME TO CHECK ALL OF THEM TO SEE IF THEY ARE STILL OPERATING. IF YOU DO FIND SOME NUMBERS NOT WORKING, PLEASE LET US KNOW SO WE WILL CAN KEEP THE LIST UP TO DATE. IF YOU KNOW OF SOME COCO BBS'S THAT ARE NOT ON THE LIST, PLEASE SEND THEM IN.

P D SOFTWARE  
P O BOX 13256  
HOUSTON, TX 77219

# COCO PROGRAM PACKS

Here is a great way for you to increase your library of programs for your COCO. Each pack contains very useful programs for learning, application, and are ready to use. Each has the size of each program with a description. The codes are:  
 F-FILE G-GAME B-BUSINESS U-UTILITY E-EDUCATION C-CASSETTE D-DISK  
 P-PRINTER K-KEYBOARD J-JOYSTICK HF-HOME FINANCE PICTURE ART

## PROGRAM PACK # 1

|          |      |        |          |      |       |          |      |       |
|----------|------|--------|----------|------|-------|----------|------|-------|
| IN-OUT   | 263  | DESIGN | ROMRAM   | 2083 | U,84K | 64KTEST  | 2029 | U,64K |
| UPPER32K | 529  | U,64K  | HEXTODEC | 435  | U     | DEC<>HEX | 1596 | U     |
| BASECONV | 1332 | U      | DISKTEST | 1402 | U,D   | SOUNDDEM | 2090 | DEMO  |
| CONVERGE | 783  | E,B    | TESTPATT | 2314 | U     | COMPLAWS | 4014 | G,K   |
| CHESS    | 9664 | G,K    | CHECKERS | 3067 | G,K   | PATROL2  | 5876 | G,J   |
| ELECTMAZ | 7125 | G,J    | ICE      | 3586 | G,J   | TANKS    | 3469 | G,J   |
| DODGE-EM | 2839 | U,D    | SOISAYS  | 3950 | G,K   | DOORS    | 1087 | G,K   |
| FUELCOST | 1170 | HF     | OHMSLAW  | 1895 | B     | LANDER   | 1984 | G,K   |
| WHERISIT | 4497 | G,K    | HANGMAN  | 2592 | G,K   | OTHELLO  | 7267 | G,K   |
| GOLDMINE | 5201 | G,K    | STATCAP  | 2462 | EDUC  | PINGPONG | 1383 | G,J   |
| BIORYTHM | 5107 | G,K,P  | CALENDAR | 4532 | U,P   | MAILLIST | 2958 | F,P,C |

## PROGRAM PACK # 2

|          |      |       |          |      |       |          |      |         |
|----------|------|-------|----------|------|-------|----------|------|---------|
| DISKLIST | 2111 | U,D,P | DIRLIST  | 2386 | U,D,P | ML ADDR  | 1997 | U,D,P   |
| DISKDUMP | 1181 | U,D,P | PRINUTIL | 2496 | U,K   | CALPRINT | 4795 | U,P     |
| ALPHSONG | 1036 | E,M   | PAINT    | 1102 | DRAW  | DOGPICT  | 3003 | PICTURE |
| EVADER   | 1178 | G,K   | NUKATTC  | 3282 | G,K   | BASICMAP | 6781 | U,K     |
| JOYPAINT | 176  | DRAW  | PUNKIN   | 1018 | PICT  | HOMOYMS  | 1676 | EDUC    |
| ABBREV   | 7156 | EDUC  | CONVERT  | 5118 | E,B   | CASTLE   | 8172 | ADV     |
| CASSDIR  | 1012 | U,P,C | CVERT    | 1776 | U,E   | FLASCARD | 1985 | EDUC    |
| MESSAGE  | 312  | U     | RELOCAT  | 965  | U     | DISKLIST | 1538 | U,D     |
| DSKTAPE  | 1667 | U,D,C | BEAST    | 2227 | G,K   | DOGFIGHT | 2145 | G,J     |
| PLANE    | 1066 | G,J   | DOGS     | 1547 | G,K   | CALENDAR | 1830 | U,P     |
| COUNT    | 590  | U     |          |      |       |          |      |         |

## PROGRAM PACK # 3

|          |      |       |          |       |     |          |      |       |
|----------|------|-------|----------|-------|-----|----------|------|-------|
| BOXLABLE | 993  | U,C   | MONOL    | 15132 | G,K | ATOMS    | 2803 | G,K   |
| FLIP     | 2700 | G,K,J | POWER UP | 249   | U,P | DISKSORT | 1883 | U,D   |
| READBIN  | 461  | U,D   | MACDATA  | 898   | U,C | CUBES    | 2263 | G,K   |
| HEXLOAD  | 1812 | U     | HANGMAN  | 2509  | G,K | OHMS     | 1234 | U,E   |
| SPEDMATH | 6303 | EDUC  | SCRDUMP  | 133   | U,P | DSKCLEAN | 505  | U,D   |
| DIRGET   | 252  | U,D   | DIRSAVE  | 295   | U,D | ML ADDR  | 262  | U,D   |
| WALLHIT  | 2112 | G,K,J | TEMPCONV | 571   | U   | CHKBOOK  | 2248 | HF,C  |
| DIS      | 4104 | U,P   | LOCFIND  | 669   | U   | MISSLETT | 767  | G,E   |
| MEMORIE  | 2767 | G,K   | FISH     | 2088  | G,K | CHIPER   | 770  | G,K   |
| CARCAL   | 1388 | HF    | BIGHILLG | 2140  | G,K | PROTECT  | 3095 | G,K,J |
| STOCK    | 5227 | G,K   | JUMP     | 1999  | G,K | FOOTBALL | 7078 | G,K   |
| BOWLSUM  | 2491 | FILE  | HILOW    | 5709  | G,K | MEMTEST  | 1889 | U     |

## PROGRAM PACK # 4

|          |      |      |         |       |     |          |       |     |
|----------|------|------|---------|-------|-----|----------|-------|-----|
| COMMAND  | 5154 | G    | PACMAN  | 16605 | G   | TYCOON   | 4317  | G   |
| DIALER   | 2324 | U    | DEXICON | 1715  | U   | DISK FIX | 893   | D,U |
| DISKTIME | 1170 | D,U  | DOS64A  | 6569  | U   | GDS      | 10055 | G   |
| PIXCMP   | 4490 | PIC  | ROMPACK | 928   | U   | SOUND    | 58    | U   |
| SPOOLER  | 159  | U    | UT      | 3148  | U   | Z        | 8311  | U   |
| QUADDRAW | 263  | DRAW | B       | 2183  | U   | CLOCK    | 370   | U   |
| COPY DIR | 1055 | D,U  | DDCOPY  | 3193  | D,U | FDCTST   | 6277  | G   |
| FIND     | 622  | G    | ODIE    | 6154  | PIC | PEANUTS  | 6154  | PIC |
| SPACE    | 6154 | PIC  | ISLAND  | 13403 | ADV | PATTERN  | 4572  | ART |
| CHEKBOOK | 7098 | FIN  |         |       |     |          |       |     |

| PROGRAM PACK # 5 |       |     |          |       |     |          |       |      |
|------------------|-------|-----|----------|-------|-----|----------|-------|------|
| MLDISK           | 3070  | D,U | SORT     | 794   | U   | TELETERM | 5792  | COMM |
| DSK EDIT         | 8165  | D,U | HEALTH   | 18728 | EDU | SOUND    | 58    | EDU  |
| TOF              | 3019  | G   | AIRPORT  | 12031 | G   | CUBE     | 5907  | G    |
| OBJECTS          | 4211  | G   | TANKS    | 8323  | G   | CIA      | 13777 | ADV  |
| TRIANGLE         | 4539  | PIC | WORLDMAP | 7435  | EDU | GARFIELD | 6154  | PIC  |
| HALLDEMO         | 1910  | PIC | LINES    | 2263  | ART | KALVOS   | 1259  | G    |
| CASTLE           | 21217 | ADV |          |       |     |          |       |      |

| PROGRAM PACK # 6 |      |     |          |      |     |          |      |     |
|------------------|------|-----|----------|------|-----|----------|------|-----|
| SLITHER          | 2156 | G   | TUMBLERS | 3979 | G   | ELIZA    | 7083 | G   |
| ICELAND          | 3472 | G   | EDUCATE  | 1511 | G   | DUNGEON  | 4362 | ADV |
| PIXDUMP          | 2140 | U,P | CONTOUR  | 1143 | U   | SLOSKROL | 218  | U   |
| COPYDIR          | 1566 | D,U | DIRLIST  | 1535 | D,U | PILOT    | 4135 | G   |
| INVITE           | 1533 | U   | MATHPAL  | 6460 | EDU | DUPER    | 2971 | U   |
| IN-OUT           | 226  | ART | GOLDMINE | 5646 | G   | HUSTLE   | 1239 | G   |
| HOBBIT           | 3634 | G   | CONNECT4 | 2647 | G,K | OTHELLO  | 5800 | G,K |
| BIOTYTHM         | 1787 | G,P | SIMON    | 782  | G,K | TICTACT  | 4269 | G,K |
| 3-D-T            | 4263 | G,K | DARTBORD | 4431 | G,K | COPTER   | 3022 | G   |

| PROGRAM PACK # 7 |       |     |          |       |     |          |       |     |
|------------------|-------|-----|----------|-------|-----|----------|-------|-----|
| D-ADV            | 17651 | ADV | SWORDS   | 9198  | G   | TROLL    | 11561 | ADV |
| QUEST            | 8439  | G   | SURVIVE  | 9751  | ADV | SPELWORD | 2135  | EDU |
| CUBIC            | 5331  | G   | DOTMAT   | 16651 | G   | FLIGHT   | 5435  | G   |
| GRID             | 3715  | PIC | TIGER    | 6154  | PIC | ZIGGY    | 6154  | PIC |
| LABELPRT         | 420   | U,C | PEEK     | 1799  | U   | ROMDUMP  | 421   | U   |
| DISASSY          | 7512  | U   | MLFINDER | 440   | U   | COLORBAR | 91    | U   |
| PATTERN          | 994   | U   | PORT     | 249   | U   | PAYMENT  | 340   | U   |
| PHONE            | 1629  | F   | LOAN     | 6038  | BUS |          |       |     |

| PROGRAM PACK # 8 |       |     |          |       |     |          |       |     |
|------------------|-------|-----|----------|-------|-----|----------|-------|-----|
| LOANAMOR         | 1633  | FIN | MLTTD    | 840   | U   | BLACKJK  | 7520  | G,K |
| SLITTER          | 2137  | G,K | IDKIT    | 12911 | G   | SPACE    | 17397 | PIC |
| FARMING          | 12878 | G   | TREK     | 10169 | G,K | DSCOPY   | 1946  | D,U |
| DSKSPEED         | 1470  | D,U | EXREF    | 5524  | U   | ALARM    | 4150  | U   |
| CLOCK            | 1112  | U   | PHONEDIR | 2393  | F,C | TICKTAPE | 5510  | U   |
| FINANCE          | 18343 | FIN | BARTENDR | 5710  | REF | DSKLIBRY | 5598  | F,D |
| MESSAGE          | 828   | U   | FLIPPAGE | 5734  | U   | DSKAID   | 8025  | D,U |

| PROGRAM PACK # 9 |       |       |          |      |      |          |      |     |
|------------------|-------|-------|----------|------|------|----------|------|-----|
| DECIDE           | 4795  | G     | BIBLE    | 3249 | EDUC | BOMBER   | 2604 | G,K |
| WEATHERX         | 4797  | U     | PROJEVAL | 9107 | B    | FILES    | 8401 | B,C |
| SUB              | 9473  | ADV   | DATAPRNT | 413  | U    | DISKDIRE | 4979 | D,U |
| BASEBALL         | 21936 | PIC   | AMORLN   | 3655 | F    | ASSMLBER | 6211 | U   |
| GUITAR           | 10886 | E,M   | POKER    | 6924 | G,K  | TANK     | 4132 | G,J |
| TRIANGLE         | 7007  | PIC   | SHIPS    | 3756 | PIC  | HANDBALL | 3883 | G,J |
| TRAIL            | 7938  | G,K,J |          |      |      |          |      |     |

| PROGRAM PACK # 10 |       |     |           |      |       |           |       |     |
|-------------------|-------|-----|-----------|------|-------|-----------|-------|-----|
| KINGDOM           | 11949 | ADV | CHECKS    | 6453 | F,D,C | BONGOCARD | 1701  | G,P |
| DKS2TP            | 2483  | D,U | SLOTS     | 3984 | G,K   | DATAFILE  | 7239  | F   |
| MLADFND           | 2762  | U   | ICE       | 6060 | G     | ASSMBLER  | 12803 | U   |
| DISMON            | 13924 | U   | SIMSAS    | 636  | G,K   | DISKNAME  | 7820  | D,U |
| SQUEEZE           | 3166  | D,U | STATUS    | 7787 | D,U   | DISKLOOK  | 684   | D,U |
| MAZE              | 7106  | G,K | CROSSROAD | 2991 | G,J   | ANIMALS   | 6219  | E,K |
| DSKLOCK           | 2795  | D,U | SELFMAIL  | 985  | U,P   |           |       |     |

## PROGRAM PACK # 11

|          |       |       |          |       |     |          |       |     |
|----------|-------|-------|----------|-------|-----|----------|-------|-----|
| COMBAT   | 5862  | G     | MCONVERT | 2895  | U   | FRACTION | 7192  | G,E |
| BALONS   | 4976  | G,K,J | DATA3    | 6066  | B,F | LIFE     | 7561  | G   |
| MUSCOMP  | 3441  | G,E   | BOGGEL   | 6013  | G,K | OFFSET   | 2241  | U   |
| BATSHIP  | 7357  | G,K   | DUMPALL  | 5409  | U   | GEOGAME  | 8452  | G,E |
| MAILLIST | 4641  | B     | VALENCE  | 2414  | G,E | GRAPHDZN | 4942  | PIC |
| WEREWAND | 10443 | ADV   | POKER    | 5943  | G,K | ASSMBLER | 11338 | U   |
| MAZE3    | 6237  | G     | RUBCUBE  | 10321 | G   |          |       |     |

## PROGRAM PACK # 12

|          |       |     |          |      |     |          |       |     |
|----------|-------|-----|----------|------|-----|----------|-------|-----|
| CIPHER   | 772   | G,K | COPYM    | 1929 | U   | SCRPRINT | 3033  | U,P |
| MOPLY    | 15219 | G,K | SOUNDS   | 5276 | U,E | DISTANCE | 7454  | U   |
| DATES    | 3221  | U   | PHONWORD | 1424 | U   | ROBOTS   | 5201  | G,K |
| DIGGEM   | 5850  | G,K | CONNT4   | 8002 | G,K | ROLLON   | 4360  | G,K |
| WILLSADV | 10330 | ADV | BASICMAP | 6159 | U   | GRAPHICS | 10794 | U   |
| RACEWAY  | 7335  | G,K | TYPING   | 2803 | E,G | CHECKS   | 6951  | FIN |
| MONEYHLP | 8074  | FIN | WORDPRC  | 9387 | B,C |          |       |     |

## PROGRAM PACK # 13

|          |      |     |          |       |     |          |       |     |
|----------|------|-----|----------|-------|-----|----------|-------|-----|
| CADIOH   | 9696 | EDU | HAUNTHSE | 12572 | ADV | DISKHLP  | 8162  | D,U |
| FINT-IT  | 4782 | G,K | MISSLES  | 4154  | G,K | PLANE    | 1066  | G,J |
| FLASHCRD | 4062 | EDU | COMPTALK | 3815  | G   | HOMEUTIL | 12284 | FIN |
| CHKBOOK  | 6601 | FIN | SHAPES   | 6463  | G,K | VIPERS   | 5169  | G   |
| POKING   | 7137 | EDU | BUGS     | 13238 | G   | GEOSTUDY | 7579  | EDU |
| USASTUDY | 7720 | EDU | HEALTH   | 18697 | EDU |          |       |     |

## PROGRAM PACK # 14

|          |       |      |          |      |     |          |       |     |
|----------|-------|------|----------|------|-----|----------|-------|-----|
| DISKWASH | 2150  | D,U  | AUTODIAL | 2326 | U   | MASTMESS | 5980  | B   |
| BIGPRINT | 5751  | U    | TRIVIA   | 8053 | G   | D-TO-D   | 3539  | D,U |
| SORT32   | 967   | U    | CHARACTR | 3794 | G   | 64KLOOK  | 16361 | U   |
| SCRIPT   | 5553  | EDUC | LOADINTR | 6184 | B   | FINDAWRD | 3966  | G   |
| BUTR17   | 3543  | U    | BATTSHIP | 4039 | G,K | FLY      | 6252  | G   |
| 64KMEMT  | 2798  | U    | OTHELLO  | 7144 | G,K | FINANAD  | 12250 | EDU |
| SPDSHEET | 10430 | BUS  | METCONV  | 2238 | U   | CRACE    | 3630  | G,J |

## PROGRAM PACK # 15

|          |      |     |          |       |     |          |       |     |
|----------|------|-----|----------|-------|-----|----------|-------|-----|
| DKTODK   | 4764 | D,U | ATTACKER | 7439  | G   | BIORYTHM | 2309  | G,P |
| HANGMAN  | 2592 | G,K | TREK     | 8730  | G,K | 3DITT    | 7614  | G,K |
| TYPEFACE | 5280 | U,P | STAT-LOG | 4937  | F   | WORDSCAR | 3863  | G   |
| DSKMSTER | 9083 | D,U | TYPING   | 4799  | E,G | CHECKS   | 5675  | FIN |
| 2OODD    | 8383 | ART | FISHING  | 2091  | G   | MEMORY   | 2729  | G   |
| HORSERAC | 5373 | G   | KRAKEN   | 10046 | ADV | KINGS    | 13660 | ADV |
| STOCKS   | 9603 | B,U | CYRPTO   | 6252  | G   |          |       |     |

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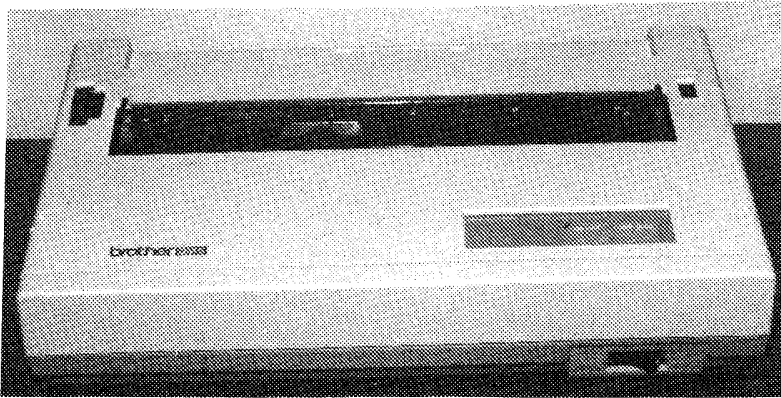
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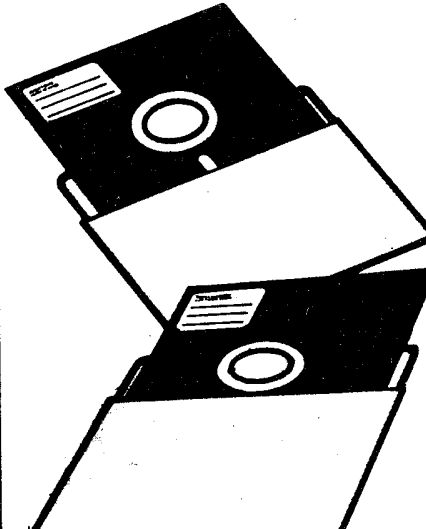


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