
IM-1 in a MILLION

May 1983

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Well here we are again, I hope that the weather is better there than it is here. I am getting tired of this liquid sunshine.

So nobody will wonder what is happening, the June issue will be mailed early because of the need to take a VACATION around this old place. This means we will also be delayed in shipping any orders and replying to any letters so please hold on. We should be back by the middle of June. Also most of the JUNE issue will be devoted to printing programs that we have received from the MEMBERS.

!!

From V. KUHN

What is the Micro Processing unit speed????

Ok, here it comes. The basic speed of the CPU(6800) is 1.117 micro seconds per cycle. A cycle is composed of a phase 01 and 02 clock. The CPU uses from 2 to 12 of these cycles to execute each of it's MACHINE LANGUAGE instructions. Then it puts these MACHINE LANGUAGE instructions together to run BASIC.

From WILBERT VAAZQUEZ

Does anyone have a program that will change an already made BASIC program, into a Machine Language program????

Right now I don't know of any that are available for the IM-1. If any of the members know of one let me know and I will publish the info.

From BOB GARDNER Jr.

Is there aa way to make the program automatically RUN after you load it?????

No....

Is there a way to disable the BREAK key so that a program can't be interrupted?????

Only if the program is written in MACHINE LANGUAGE....

From JAMES J BLAZEK

One question on your service of taping programs on tape we furnish; specifically with respect to the HIGH RESOLUTION Helper program. Is it necessary (or adviseable) to go through each program in order?????

First off on the programs that we have, we furnish the tapes for them. Next the HI RES Helper programs don't have to be run together. They are just demo programs to give the beginning programmer some help with HI RES....

%%%

For those that are interested we are doing the NEWS LETTER with a program written by one of the members, Jim Clatfelter, so far it seems to be a very good program which is easy to run.

From Douglas Smith

DISK USERS: can't RUN that program by chaining (ie '100 RUN "NEXT PROG")? Getting errors when you do this? A fix given to me was: POKE 41009,PEEK(41984) & POKE 41010,PEEK(41985), this resets the DIM pointers to the End of Program.....

Somemore from LOUIS BOLDUC

7-When all this has been completed, the file is saved and you are back in BASIC.

(Note: The APFDOS doesn't perform a verification of the information being written other than a cyclic redundancy check.)

When you kill a file, here's what's going on:

1-The computer reads the FCB of the file to be killed, to get the FSAT sector and track, then it reads the FSAT to get all the sectors used by the file.

2-It goes back in the directory and erases the FCB by moving up all the following FCBs.

3-The computer goes in the GAT and resets the sectors used by the file.

Example: If the FSAT was containing 01 08 01 07 01 05 01 02 and byte 1 of the GAT was containing 11111011, after killing, the byte 1 of the GAT will contain 00101001.

4-The computer doesn't erase anything on the disk except the FCB in the directory.

When you load a file, here's what's going on:

1-The computer reads the FCB of the file to be loaded, to get the FSAT sector and track, then it reads the FSAT to get all the sectors used by the file.

2-The sectors are read and put in the memory in the order given by the FSAT..

well enough for this month.

BASIC BOX BASIC BOX

Here is a trick I saw in one of the programs sent in.

This can be used in place of the ON X GOTO .

GOTO Z * 1000 or GOTO Z + 1000 = With these two ways of setting up the GOTO command you can get more options than with the ON X GOTO command. This method also works with the GOSUB command.

Here is a short program to help you.

```
100 INPUT"value",Z
200 GOSUB Z * 1000
1000 PRINT"YOU HIT 1"
1010 RETURN
2000 PRINT"YOU HIT 2"
2010 RETURN
3000 PRINT"YOU HIT 3"
3010 RETURN
```

For those programmers that have run into the problem of needing to make a line in your program longer than the 128 character restriction, here is a way. Use the EDIT to expand the line.

Keyin the line #, Command (ie PRINT), and the last portion of the line. Then using the EDIT command start inserting the rest of the line.

EXAMPLE: Here is the line I want::

```
1000 PRINT#1;DA$(Z,1),DE$(Z,1),CH$(Z,1),AM(Z),TO(Z),SU(Z),MA(Z),
,E1(Z),G1(Z),RP(Z),IN(Z),OU(Z),DA$(Z+1,1),DE$(Z+1,1),CH$(Z+1,1),
AM(Z+1),TO(Z+1),SU(Z+1),MA(Z+1),E1(Z+1),G1(Z+1),RP(Z+1),IN(Z+1),
OU(Z+1)
```

```
KEYIN: 1000 PRINT#1;DA$(Z+1,1),DE$(Z+1,1),CH$(Z+1,1),AM(Z+1),
TO(Z+1),SU(Z+1),MA(Z+1),E1(Z+1),G1(Z+1),RP(Z+1),IN(Z+1),OU(Z+1)
```

```
THEN: EDIT1000[1;[1;DA$(Z,1),DE$(Z,1),CH$(Z,1),AM(Z),TO(Z),SU(Z),
,MA(Z),E1(Z),G1(Z),RP(Z),IN(Z),OU(Z),
```

This should help, but practice with smaller lines first.

Call Box Call Box

Here are a couple of routines for those MACHINE LANGUAGE programmers out there.

1.....BCD to HEX (Binary coded decimal to Hexidecimal)

This will convert bcd numbers from value 0000 to 9999 to Hex.

A0A7= Upper half of BCD value

A0A8= Lower half of BCD value

JSR 906D

A0A7= Upper half of HEX value

A0A8= Lower half of HEX value

2....HEX to BCD

This routine converts a HEX value (00 to FF) to BCD.

Clear \$A0A7 & \$A0A8 first

A029= Hex value input

JSR 99AD

A0A7 & A0A8= Bcd value

From Larry Barnes

Larry sent in an easier method of saving screens while saving programs.

1.Type the following- 1 CALL 17046: POKE 40960,0:POKE40961,0: clod,> and hit 'RETURN.

2.Now type 'RUN'. The screen will go blank.

3.Now you may insert the tape with the program that you want to save, press play button on the recorder, and hit 'RETURN'. The program will load into the IM-1.

4.When the program is loaded and th tape/sound quits, remove the tape and insert a blank tape, press the play button, type 'CSAVE' hit 'RETURN' and the program will now save on the tape and the front screen will be saved or the 'CSAVE' instructions will not be on the screen.

What the short program does is simple, it puts the cursor off the screen and the instructions are not visable.

Hey folks, tired of that old
SPACE DESTROYERS, well here
are some changes for the game.

CALL 28672 (MONITOR) AND MAKE THE FOLLOWING CHANGES AND ENJOY

1.....\$A696 FROM 7F TO 1F

\$AA34 FROM 7F TO 1F

2.....START AT \$B028 AND KEYIN THE FOLLOWING

44 2c 4d 12 6e 2b 20 12 13

Hope this spices up your lifes a little.....

```

0 REM "LEDGER PROGRAM FOR CLUB MEMBERS FROM EDITOR"
1 REM "IF THIS PROGRAM IS USED ON BK MACHINES THEN LINES 4,5,&1200 NEED TO BE
CHANGED..."
2 CLOSE 1
3 DIM NULL$(10),SA$(24),TAL(8)
4 DIM E1(99),G1(99),FN$(6),DE$(99,24),DA$(99,6),CH$(99,6)
5 DIM AM(99),DP(99),ME(99),OT(99),SU(99),MA(99)
6 GOTO 200
10 SA$=DA$(LL,1):DA$(LL,1)=DA$(LL-1,1):DA$(LL-1,1)=SA$
11 SA$=DE$(LL,1):DE$(LL,1)=DE$(LL-1,1):DE$(LL-1,1)=SA$
12 SA$=CH$(LL,1):CH$(LL,1)=CH$(LL-1,1):CH$(LL-1,1)=SA$
13 Z=DP(LL):DP(LL)=DP(LL-1):DP(LL-1)=Z:Z=ME(LL):ME(LL)=ME(LL-1):ME(LL-1)=Z
14 Z=OT(LL):OT(LL)=OT(LL-1):OT(LL-1)=Z:Z=SU(LL):SU(LL)=SU(LL-1):SU(LL-1)=Z
15 Z=MA(LL):MA(LL)=MA(LL-1):MA(LL-1)=Z:Z=E1(LL):E1(LL)=E1(LL-1):E1(LL-1)=Z
16 Z=G1(LL):G1(LL)=G1(LL-1):G1(LL-1)=Z
17 RETURN
20 POKE 40960,INT(CU/256):POKE 40961,CU-INT(CU/256)*256:RETURN
30 DIR:PRINT:PRINT"FILE NAME=";FN$:INPUT"OK (1=Y 2=N)",Z:ON Z GOTO 32
,31
31 FN$=NULL$:INPUT"FILE NAME",FN$:CALL 17046:GOTO 30
32 RETURN
40 GOSUB 30:OPEN 1FN$:READ #1;L:FOR Z=0 TO L
41 READ #1;DA$(Z,1),DE$(Z,1),CH$(Z,1),AM(Z),DP(Z),ME(Z),OT(Z),SU(Z),MA(Z),E1(Z)
,G1(Z)
44 NEXT:CLOSE 1:GOTO 200
50 GOSUB 30:OPEN 1FN$:PRINT #1;L:FOR Z=0 TO L
51 PRINT #1;DA$(Z,1),DE$(Z,1),CH$(Z,1),AM(Z),DP(Z),ME(Z),OT(Z),SU(Z),MA(Z),E1(Z)
,G1(Z)
52 NEXT:CLOSE 1:GOTO 200
60 PRINT"DATE";DA$(I,1):PRINT"DESCRIPTION";DE$(I,1):PRINT"CHE
CK";CH$(I,1)
62 PRINT USING"AMOUNT###.##",AM(I)
64 PRINT USING"SALES###.##",DP(I)
66 PRINT USING"DUES###.##",ME(I)
68 PRINT USING"REPAIR###.##",OT(I)
70 PRINT USING"OFF SUPS###.##",SU(I)
72 PRINT USING"INV PUR###.##",MA(I)
74 PRINT USING"PARTS###.##",E1(I)
76 PRINT USING"GENERAL1###.##",G1(I)
80 RETURN
100 :#####.## #####.## #####.## #####.## #####.## #####.## #####.## #####.## #####.##
#.##
200 CALL 17046:CU=520:GOSUB 20:PRINT"1. ENTER DATA"
220 CU=552:GOSUB 20:PRINT"2. EDIT DATA"
230 CU=584:GOSUB 20:PRINT"3. DISPLAY DATA"
240 CU=616:GOSUB 20:PRINT"4. PRINT DATA"
250 CU=648:GOSUB 20:PRINT"5. READ FILE FROM DISC"
260 CU=680:GOSUB 20:PRINT"6. WRITE FILE ON DISC"
270 CU=712:GOSUB 20:PRINT"7. TAPE SAVE"
275 CU=744:GOSUB 20:PRINT"8. SORT FILE"
280 INPUT"CHOICE",C
281 IF C=1 THEN 1000
282 IF C=2 THEN 5000
284 IF C=3 THEN 2000
286 IF C=4 THEN 3000
288 IF C=5 THEN GOSUB 40:GOTO 200
290 IF C=6 THEN GOSUB 50:GOTO 200
294 IF C=7 THEN CALL 17046:PRINT FN$:CSAVE
295 IF C=8 THEN 1500
296 MUSIC"7777":GOTO 200
1000 CALL 17046:CU=512:GOSUB 20:PRINT"DATA ENTRY ROUTINE"

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1100 CU=544: GOSUB 20
1105 DA$(L,1)=" "
1110 INPUT "DATE ",DA$(L,1)
1111 CH$(L,1)="-----"
1112 DE$(L,1)=" "
1113 DE$(L,24)="*"
1115 INPUT "DESCRIPTION",DE$(L,1)
1120 IF DE$(L,1)="***" THEN 200
1125 INPUT "CHECK #",CH$(L,1): INPUT "SALE $",DP(L): INPUT "MEMBER DUES",ME(L)
1130 INPUT "REPAIR $",OT(L): INPUT "OFF.SUPPS $",SU(L): INPUT "INVENT PUR $",M
(L): INPUT "REPAIR PARTS $",E1(L): INPUT "GENERAL 1 $",G1(L)
1200 IF L=99 THEN INPUT "FILE FULL",C: GOTO 200
1210 L=L+1: GOTO 1000
1500 CALL 17046:CU=512: GOSUB 20: PRINT "FILE SORT ROUTINE"
1505 PRINT "# OF RECORDS TO BE SORTED=";L
1510 CU=576: GOSUB 20
1515 PRINT "WHICH DO YOU WANT TO SORT ON?"
1520 PRINT "1. DATE": PRINT "2. DESCRIPTION": PRINT "3. CHECK #"
1525 INPUT "CHOICE",C
1530 IF C=1 THEN 1600
1535 IF C=2 THEN 1700
1540 IF C=3 THEN 1800
1545 MUSIC "777": GOTO 1500
1600 PRINT "DATE SORT"
1610 FOR LL=1 TO L-1
1615 IF DA$(LL,1)<DA$(LL-1,1) THEN FL=1: GOSUB 10
1620 NEXT
1625 IF FL=1 THEN FL=0: GOTO 1610
1630 GOTO 200
1700 PRINT "DESCRIPTION SORT"
1710 FOR LL=1 TO L-1
1715 IF DE$(LL,1)<DE$(LL-1,1) THEN FL=1: GOSUB 10
1720 NEXT : IF FL=1 THEN FL=0: GOTO 1710
1730 GOTO 200
1800 PRINT "CHECK # SORT"
1810 FOR LL=1 TO L-1
1815 IF CH$(LL,1)<CH$(LL-1,1) THEN FL=1: GOSUB 10
1820 NEXT : IF FL=1 THEN FL=0: GOTO 1810
1830 GOTO 200
2000 CALL 17046:CU=512: GOSUB 20: PRINT "DATA DISPLAY ROUTINE"
2100 FOR I=0 TO L
2105 CALL 17046:CU=512: GOSUB 20
2110 GOSUB 60
2160 IF KEY$(0)<>" " THEN 2160
2170 NEXT I
2200 INPUT "END OF FILE",C: GOTO 200
3000 CALL 17046:CU=512: GOSUB 20: PRINT "DATA PRINT ROUTINE"
3004 INPUT "DO YOU WANT TO INCLUDE LAST TOTALS",FN$
3008 IF FN$="Y" THEN 3030
3010 TA(1)=0:TA(2)=0:TA(3)=0:TA(4)=0
3011 TA(5)=0:TA(6)=0:TA(7)=0:TA(8)=0
3014 GOTO 3090
3030 INPUT "ENTER NEW TOTALS ",FN$
3035 IF FN$="N" THEN 3090
3040 INPUT "AMOUNT ",TA(1): INPUT "SALE ",TA(2): INPUT "DUES ",TA(3)
3050 INPUT "REPAIR ",TA(4): INPUT "OFF SUP ",TA(5): INPUT "INV PUR ",TA(6)

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3060 INPUT "PARTS ",TA(7); INPUT "GENERAL1 ",TA(8)
3090 PRINT =1; PRINT CHR$(27);"P"
3093 PRINT TAB(3);"DATE DESCRIPTION CHECK#";
3094 PRINT TAB(4);"AMOUNT SALES MEMBER REPAIR OFFICE
INVENT. REPAIR GENERAL1"
3095 PRINT TAB(4);" DUES IN SUPPLIES
PUR PARTS"
3097 PRINT : PRINT "BEGINNING TOTALS"; TAB(45);
3098 PRINT USING 100,TA(1),TA(2),TA(3),TA(4),TA(5),TA(6),TA(7),TA(8)
3099 PRINT
3100 FOR I=0 TO L-1
3110 PRINT I+1;" ";DA$(I,1); TAB(10);DE$(I,1); TAB(35);CH$(I,1); TAB(43);
3120 PRINT USING 100,AM(I),DP(I),ME(I),OT(I),SU(I),MA(I),E1(I),G1(I)
3132 TA(1)=TA(1)+AM(I);TA(2)=TAA(2)+DP(I);TA(3)=TA(3)+ME(I)
3134 TA(4)=TA(4)+OT(I);TA(5)=TA(5)+SU(I);TA(6)=TA(6)+MA(I)
3136 TA(7)=TA(7)+E1(I);TA(8)=TA(8)+G1(I)
3140 NEXT I
3141 PRINT : PRINT
3142 PRINT "TOTAL"; TAB(45);
3145 PRINT USING 100,TA(1),TA(2),TA(3),TA(4),TA(5),TA(6),TA(7),TA(8)
3150 PRINT CHR$(12); PRINT =0; GOTO 200
5000 CALL 17046;CU=512; GOSUB 20; PRINT "EDIT ROUTINE"
5100 FOR I=0 TO L-1
5105 CALL 17046;CU=512; GOSUB 20
5110 GOSUB 60
5145 PRINT "OK(Y/N)"
5147 IF KEY$(0)="Y" THEN NEXT : GOTO 200
5148 IF KEY$(0)="N" THEN 5150
5149 GOTO 5147
5150 CU=960; GOSUB 20; INPUT "DATE ",DA$(I,1)
5155 CU=960; GOSUB 20; INPUT "DESCRIPTION ",DE$(I,1)
5160 CU=960; GOSUB 20; INPUT "CHECK # ",CH$(I,1)
5165 CU=960; GOSUB 20; INPUT "AMOUNT $",AM(I)
5170 CU=960; GOSUB 20; INPUT "SALES $",DP(I)
5175 CU=960; GOSUB 20; INPUT "MEMBER DUES $",ME(I)
5180 CU=960; GOSUB 20; INPUT "REPAIR IN $",OT(I)
5185 CU=960; GOSUB 20; INPUT "OFF SUPS $",SU(I)
5190 CU=960; GOSUB 20; INPUT "INVENT PUR $",MA(I)
5195 CU=960; GOSUB 20; INPUT "REPAIR PARTS $",E1(I)
5200 CU=960; GOSUB 20; INPUT "GENERAL 1 $",G1(I)
5210 GOTO 5105

```

TAPE 010,011,012,013 & 014
 THESE TAPES CONTAIN PROGRAMS
 SUBMITTED BY **CHUCK CLANCY**
 FOR THE CLUB. DUE TO THE NUMBER
 WE GIVE SPECIAL THANKS

TO CHUCK.
 TAPE 010
 DIRECTORY
 BATTLESHIP
 STAR BUSTERS
 SHAPE LOADER

FILL-IT-IN
 TAPE 011
 SPELL-IT
 ROCKETS & STARS
 MEMORY TO SCREEN
 RAD LOAD OF ROCKET PATROL
 BAWDYS DATA

TAPE 012
 SKETCH SHAPES
 BASIC SHAPE MOVES
 MULTIPLICATION TABLES
 SOUND LOOPS
 DATA RECORDS

TAPE 013
 @ ALPHA-SORT
 @ NUMBER-SORT
 HEX TO DEC
 DEC TO HEX
 KEYBOARD SKETCH

TAPE 014
 6000 PEEKER
 GARAGE SALE
 SOUND EFFECTS
 PADDLE SKETCH
 ROLLING WRITER

TAPE 015
 @ HUNCHMAN
 @ 1 ARM DARTS
 BLINDATE DICE
 @ CASO REGISTER
 WOVEN/ON STAND

TAPE 016
 RILES PER GALLON
 ROLLING MESSAGE
 @ BREAKDOWN
 DICE
 SCREEN IMAGE

TAPE 017
 RUSSIAN ROULETTE
 RICKETY
 @ LEDGER
 @ TARGET

DUE TO THE COST OF PRINTING THE WANTADS WE WILL HAVE TO ASK ANYBODY THAT IS PUTTING IN AN AD THAT THE PLEASE LIMIT IT TO 10 LINES ONLY. IF YOU NEED MORE ROOM PLEASE WRITE FOR INFORMATION ON THE COST OF FULL OR PARTIAL PAGE ADS.

WANT ADS

RENUM. THIS PROGRAM RENUMBERS ALL LINES IN A BASIC PROGRAM. ALL LINE REFERENCES ARE RENUMBERED ALSO. FIRST NEW LINE NUMBER AND INCREMENT IS USER DEFINED. \$10.00 MONEY ORDER PLEASE. LOUIS BOLDUC 1509-110 CH. DU CHATEAU, HULL, QUEBEC, CANADA, J9A-1T3

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WE USED THE ABOVE PROGRAM TO DO PART OF THIS MONTHS NEWSLETTER. DO NOT CONFUSE THIS PROGRAM WITH ANY OTHER FOR OTHER COMPUTERS. THIS ONE WAS WRITTEN FOR THE IM-1....

FOR SALE: APF IM-1 COMPUTER WITH 8K, TOP SECRET BOOK, BASIC TUTOR SPACE DESTROYERS, PROG & TECH ASSIST MANUAL PLUS ABOUT \$20 SOFTWARE INC. DEFENDER, ADVEN IM MURDER, AND OTHERS FROM MR. R, \$200, RUTH STRZEPEK, 199 REYNOLD ST., PLYMOUTH, PA 18651

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!!!!!!
THIS IS A GREAT PROGRAM, IT IS 0 DESTROYERS.....EDITOR

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IM-1 W/801, 88K, SI 232, FI 100, EXTRA BASIC CART., 4 GAME CART'S, BASIC TUTOR, IM-1 DIAGNOSTIC + 12 MORE TAPE PENS, ALL TECH MANUALS, LABEL, COMPOSITE VIDEO OUTPUT. VALUE NEW IS OVER \$1,200 IN HARDWARE & SOFTWARE. TOTAL PACKAGE \$400.00

T. CRONIN. (201)444-5929 AFT2:PM

HEY FOLKS HERE IS A LIST OF PROGRAMS THAT WE HAVE AVAILABLE ON TAPE. WHEN ORDERING PLEASE SPECIFY THE 2 THAT YOU WANT ON YOUR TAPE FOR THE \$5.00.

THANKS EDITOR

#= ALREADY PUBLISHED
TAPE #1
CE3K--FUN PROGRAM
HI RES2-- HI RES HELPER
HI RES3-- HI RES HELPER
HEX-DEC-- HEX-DEC / DEC-HEX MUSIC----FUN PROGRAM

TAPE #2
METRIC--METRIC\$STAND COMU SPEIL---GAME PROGRAM IN GERMAN
HI RES1--HI RES HELPER
DATATAP--USE CASSETTE FOR DATA REAR---FIGURE THE MEAN OF #'S TAPE #3

BLACKJK---BLACKJACK GAME
CAPITOL---STATE CAPITOL ANSWERS
FROGGER--SIMPLE BUT GOOD GAME
LETNACH---SIMPLE LETTER MACHINE
TV LOGO---DISPLAYS PICTURE
TAPE #4

MAGIC8---GAME
BATTLE#---GAME
SPIRAL2---VISUAL DISPLAY
TAXPROG---SIMPLE TAX PROGRAM
AUDIORC---AUDIO RECORDING PROG.
TAPE #5

IN CALL---MENU & MULTI PROG. EX.
TNETST---MAKES LOTS OF NOISE
LETPROG---LETTER PROGRAM

TAPE #6
GAL/LIT---CONVERTS GALS AND LITS
RECIPES---RECIPE RECORD PROGRAM
MATH ---MATH PROGRAM
BIRTHDA---PLAYS & DISPLAY B DAY
ENGLISH---SIMPLE ENGLISH LESSON
TAPE #7

SHAKE ---ANOTHER GAME
ALPHAS ---HI RES ALPHA CHARACTER
MENTEST---MEMORY TEST PROGRAM
STROBE ---LOTS OF FLASH & POP
TAPE #8

1640AB--TAX PROGRAM
FORCAST---FUN PROGRAM
SCREEN ---SCREEN IMAGE PROGRAM
MATCHES---15 MATCHES,,,FUN
SQ ROOT---BASIC SQ ROOT
TAPE #9

SPACEDL--SPACE DEEL 6000
HI RES4---HI RES HELPER PROGRAM
TAPCAT---TAPE CATALOG PROGRAM
GRAPHIC---BUILD SHAPES & DISPLAY
MURPUS---GAME

```

3 DIM A$(1)
5 DIM B$(2)
10 CALL 17046
20 POKE 24578,38
30 POKE 40960,2: POKE 40961,580
40 PRINT "S K E T C H   P A D"
50 PRINT : PRINT
60 PRINT "RIGHT PADDLE DRAWS HORIZONTALS  AND VERTICALS"
70 PRINT : PRINT "LEFT PADDLE DRAWS DIAGONALS"
80 PRINT : INPUT "PRESS RETURN FOR MORE----",M
90 CALL 17046: POKE 40960,2: POKE 40961,544
100 PRINT "TO ERASE PRESS 'F' ON MAIN UNIT"
105 PRINT "THEN BACK OVER PART TO ERASE"
110 PRINT : PRINT "TO RETURN TO SKETCHING PRESS   'R' ON MAIN UNIT"
115 PRINT
120 PRINT "TYPE 'S' ON MAIN TO SAVE ON CAS"
122 PRINT
130 PRINT : INPUT "PRESS RETURN FOR MORE-----",M
140 CALL 17046: POKE 40960,2: POKE 40961,576
170 PRINT : PRINT "TO EXIT PROGRAM PRESS 'Q' ON   MAIN UNIT"
180 PRINT : INPUT "PRESS RETURN TO BEGIN-----",M
190 CALL 17046: POKE 40960,2: POKE 40961,576
200 PRINT "F O R   H E L P   T Y P E   ' H '"
205 PRINT "-----"
210 PRINT : INPUT "CHOOSE A COLOR ( 0--7 )",C
240 H=0:V=7
250 CALL 17046
251 COLOR =2: SHAPE =15
252 FOR I=0 TO 15
253 HLIN 0,31,I
254 NEXT I
260 COLOR =C
270 IF CODE=1 THEN 802
271 PLOT H,V
272 IF KEY$(1)<>"" THEN MUSIC "7"
275 IF KEY$(2)<>"" THEN MUSIC "7"
280 IF KEY$(0)<>"" GOTO 600
290 IF KEY$(1)="E" THEN H=H+1: IF H>31 THEN H=31: GOTO 350
295 IF KEY$(1)="W" THEN H=H-1: IF H<0 THEN H=0: GOTO 350
300 IF KEY$(1)="N" THEN V=V-1: IF V<0 THEN V=0: GOTO 350
305 IF KEY$(1)="S" THEN V=V+1: IF V>14 THEN V=14: GOTO 350
350 IF KEY$(2)="N" THEN H=H-1:V=V-1: IF H<0 THEN H=0: IF V<0 THEN V=0: GOTO 2
70
360 IF KEY$(2)="E" THEN H=H+1:V=V-1: IF H>31 THEN H=31: IF V<0 THEN V=0: GOTO
270
370 IF KEY$(2)="W" THEN H=H-1:V=V+1: IF H<0 THEN H=0: IF V>14 THEN V=14: GOTO
270
380 IF KEY$(2)="S" THEN H=H+1:V=V+1: IF H>31 THEN H=31: IF V>14 THEN V=14: GO
TO 270
390 GOTO 270
600 IF KEY$(0)="S" GOTO 630
605 IF KEY$(0)="Q" THEN POKE 40960,0: POKE 40961,0: END
620 IF KEY$(0)="F" GOTO 800
630 IF KEY$(0)="H" THEN GOTO 10
645 MUSIC "1": GOTO 270
650 POKE 40960,0: POKE 40961,0
652 CALL 34040
655 CALL 34138
660 CALL 34061

```

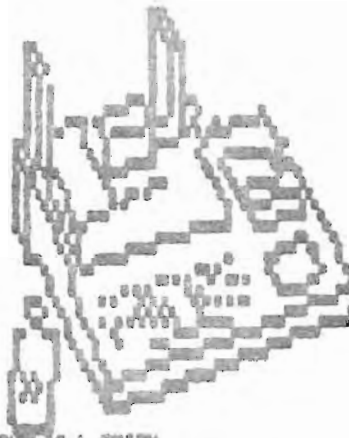
```

665 POKE 24578,38
670 CALL 17046
675 POKE 40960,2: POKE 40961,576
678 PRINT "S K E T C H   S A V E D"
680 FOR I=1 TO 300: NEXT I
690 CALL 17046: GOTO 210
700 IF KEY$ (0)=" " GOTO 710
705 GOTO 700
710 IF KEY$ (0)<>" " GOTO 712
711 GOTO 710
712 B$= KEY$ (0)
713 IF B$="0" THEN COLOR =0
714 IF B$="1" THEN COLOR =1
715 IF B$="2" THEN COLOR =2
716 IF B$="3" THEN COLOR =3
717 IF B$="4" THEN COLOR =4
718 IF B$="5" THEN COLOR =5
719 IF B$="6" THEN COLOR =6
720 IF B$="7" THEN COLOR =7
721 MUSIC "*5"
722 IF KEY$ (0)<>" " THEN 722
727 GOTO 270
728 B$= KEY$ (0)
729 FOR I=0 TO 15
730 IF ASC (B$)= ASC (I) THEN SHAPE =I: MUSIC "*5"
731 FOR T=1 TO 15: NEXT T
732 NEXT I
733 GOTO 270
800 CODE=1
802 COLOR =2
804 PLOT H,V
806 COLOR =C
808 PLOT H,V
810 COLOR =2: PLOT H,V
820 IF KEY$ (0)="R" GOTO 840
825 GOTO 271
840 CODE=0: COLOR =C: GOTO 270

```

```

1 REM "HERE IS A SIMPLE TARGET GAME"
2 DIM F$(1)
3 POKE 24578,54
5 S=48
6 T=48
7 U=0
8 RESTORE
10 CALL 17046
20 GOTO 100
30 GOTO 200
40 U=U+1
42 IF U=25 THEN 60
44 GOTO 10
60 F$=KEY$(2): IF F$="9" THEN 5
70 GOTO 60
100 REM FLY GENERATOR
110 D=INT(544+64*RND(0))
120 POKE D,42
130 GOTO 30
200 REM LIZARD GENERATOR
210 A=992
220 POKE A,25
225 POKE A-1,32
230 IF A=1023 THEN A=992
240 A=A+1
405 F$=KEY$(1): IF F$="!" THEN 600
430 IF A=1023 THEN 500
440 GOTO 220
500 REM
530 GOTO 40
600 REM TONGUE ROUTINE
605 C=0
650 REM
660 IF A-C-33=D THEN 750
664 POKE 960,T
665 POKE 961,S
666 POKE A-C-1,9
668 C=C+32
670 POKE A-C-1,25
675 POKE A-1,30
680 IF A-C<=575 THEN 800
700 GOTO 650
750 S=S+1
751 MUSIC "123123"
752 IF S=58 THEN 760
753 GOTO 40
760 S=48
761 T=T+1
764 IF T=58 THEN T=S=48
766 GOTO 40
800 GOTO 40
    
```



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