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COMPUTING
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TRS-80 COMPUTING

"ANYTHING ISSUE"

GRAPHICS ISSUE

THE BI-MONTHLY MAGAZINE FOR COLOR COMPUTER USERS

GRAPHICS EXTRAVAGANZA

FEATURES:

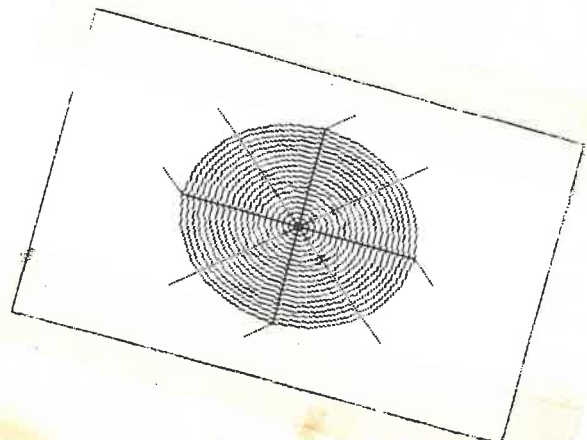
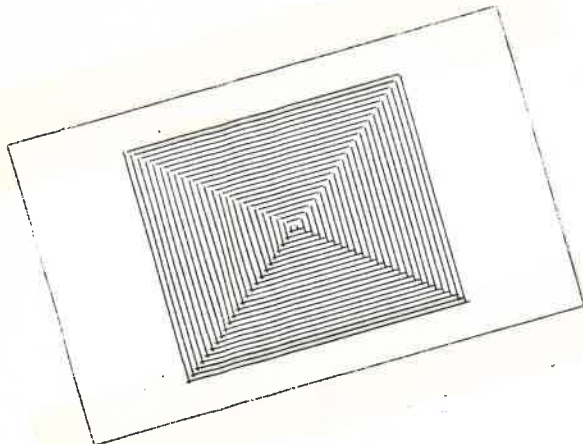
- * SEVERAL GRAPHICS/ANIMATION PROGRAMS FOR THE COCO
- * A GREAT TUTORIAL ON PROGRAMMING HIGH-RES GRAPHICS ON YOUR COCO
- * A COCO GRAPHICS ART GALLERY
- * A FUN GOLF GAME FOR THE COCO 3

AND PLENTY MORE!

ALSO:

THE WINNER OF THIS
MONTH'S GRAPHICS CONTEST

A BRAND NEW SPECIALS
SECTION



TRS-80 COMPUTING

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TRS-80 COMPUTING
SINCE 1987

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Graphics Designs

GRAPHICS PROGRAM #14

Since we decided to make this month of TRS-80 Computing a graphics issue, I've written two graphics programs called DESIGN1 and DESIGN2. Each one draws a neat image that appears to spin on the PMODE 3 screen. For more graphics and animation, see the Programmer section.

THE PROGRAM: DESIGN1

```
0 ' GRAPHICS DESIGN # 1
1 ' BY JOE AHERN
2 ' ECB REQUIRED
3 ' *****
5 PMODE 3,1
8 PCLS
10 SCREEN 1,0
41 FOR Z=1 TO 2
42 COLOR 4,1:GOSUB 1000
44 COLOR 3,1:GOSUB 1004
46 COLOR 3,1:GOSUB 1000
48 COLOR 4,1:GOSUB 1004
50 NEXT Z
100 GOTO 41
1000 A=56:B=24:C=200:D=24
1002 FORX=1TO48:LINE(A,B)-(C,D),PSET:A=A+3:B=B+3:C=C-3:D=D+3:NEXT X
1003 RETURN
1004 A=58:B=24:C=58:D=164
1006 FORX=1TO48:LINE(A,B)-(C,D),PSET:A=A+3:B=B+3:C=C+3:D=D-3:NEXTX
1010 RETURN
```

THE PROGRAM: DESIGN2

```
0 ' GRAPHICS DESIGN # 2
1 ' BE JOE AHERN
2 ' ECB REQUIRED
3 ' *****
5 PMODE 3,1
8 PCLS
10 SCREEN 1,0
12 R=3:FOR X=1 TO 20
14 CIRCLE(128,96),R,4:R=R+3
15 NEXT X
18 A$="BM128,96;U60E12"
20 B$="BM128,96;E42E12"
22 FOR Y=1 TO 10
24 DRAW"C4;A0"+A$:DRAW"A0"+B$
26 DRAW"A1"+A$:DRAW"A1"+B$
28 DRAW"A2"+A$:DRAW"A2"+B$
30 DRAW"A3"+A$:DRAW"A3"+B$
32 DRAW"C1;A0"+A$:DRAW"A0"+B$
34 DRAW"A1"+A$:DRAW"A1"+B$
36 DRAW"A2"+A$:DRAW"A2"+B$
38 DRAW"A3"+A$:DRAW"A3"+B$
40 NEXT Y
```

EDITOR'S NOTE...

Summer is almost over (unfortunately). August, being one of the hottest months in the summer, has really showed it this year (at least in Canton, MA. it has!). Another thing about the summer is everything starts to wind down - there is less CoCo activity because everyone has gone away on vacation or is at the beach. But once September is here we are back in full force and getting ready to put out the October (halloween) issue.

Another thing, is we haven't been getting submissions as much as we used to. What we are really lacking is programs. Our editorial staff are fresh out of ideas and that's why we depend on the CoCo Community for their BASIC programs. So your help will be greatly appreciated (Submission info found on last page). Also, try and spread the word to your friends and computer penpals about TRS-80 Computing. We are always looking for new subscribers.

Last but not least, you may have noticed on the front cover that this is our "anything" issue. We have decided to dedicate this issue to anything we want. This year we happen to make it our graphics issue and again depend highly on the CoCo Community to enter in some of their artwork. We enjoy making this magazine for the benefit of everyone. Thank you.

Oh by the way, notice something about this issue - no more purple ink! (ha ha!!)

Computer Penpals

the following people are proud owners of Color Computers and would like to have penpals to talk about their CoCo and exchange ideas. NO PIRACY!

Joe Ahern

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THE SMILING CAT

4K
CB
GRAPHICS

Here's another graphics program for you graphics lovers. This one draws a picture of a smiling kitty that resembles a famous cat. It uses the simple SET graphics. So for those of you that donot have Extended Color BASIC, you can use this also.

THE PROGRAM: SMILECAT

```
0 ' THE SMILING CAT
1 ' (C) COPYRIGHT 1989
2 ' BY TRS-80 COMPUTING
502 CLS0:FORT=24T030:SET(T,2,8):NEXTT:FOR T=34T041:SET(T,2,8):NEXTT
506 FORT=24T031:SET(T,3,8):NEXTT:FORT=34T042:SET(T,3,8):NEXTT:FORT=24T043:SET(T,
4,8):NEXTT
512 FORT=25T044:SET(T,5,8):NEXTT:FORT=26T045:SET(T,6,8):NEXTT
516 RESET(29,3):RESET(30,4):RESET(31,5):RESET(32,6)
518 RESET(40,3):RESET(41,4):RESET(42,5):RESET(43,6)
520 FORT=27T049:SET(T,7,8):NEXTT:FORT=26T028:SET(T,8,8):NEXTT:FORT=30T033:SET(T,
8,5):NEXTT:FORT=35T043:SET(T,8,5):NEXTT
528 FORT=44T053:SET(T,8,8):NEXTT:FORT=24T028:SET(T,9,8):NEXTT:FORT=30T033:SET(T,
9,5):SET(T,10,5):SET(T,13,5):NEXTT
534 FORT=35T042:SET(T,9,5):SET(T,10,5):SET(T,13,5):NEXTT
536 FORT=43T054:SET(T,9,8):NEXTT:SET(42,8,5)
538 FORT=23T028:SET(T,10,8):NEXTT:FORT=43T055:SET(T,10,8):NEXTT:FORT=21T023:SET(
T,11,8):NEXTT:FORT=30T031:SET(T,11,5):NEXTT
546 FORT=37T042:SET(T,11,5):NEXTT
548 SET(33,11,5):SET(35,11,5):SET(33,12,5):SET(35,12,5)
550 FORT=49T055:SET(T,11,8):NEXTT
552 FORT=20T022:SET(T,12,8):NEXTT
554 FORT=24T025:SET(T,12,2):NEXTT
556 FORT=27T028:SET(T,12,2):NEXTT
558 FORT=30T031:SET(T,12,5):NEXTT
560 FORT=37T042:SET(T,12,5):NEXTT
562 RESET(43,8):RESET(43,9):RESET(43,10):RESET(43,11)
564 SET(44,12,2):FORT=46T048:SET(T,12,2):NEXTT:FORT=51T055:SET(T,12,8):NEXTT
566 FORT=20T021:SET(T,13,8):NEXTT:SET(23,13,2):FORT=25T028:SET(T,13,2):NEXTT:FOR
T=44T047:SET(T,13,2):NEXTT:SET(49,13,2):FORT=51T056:SET(T,13,8):NEXTT
568 FORT=19T022:SET(T,14,8):NEXTT:FORT=23T029:SET(T,14,2):NEXTT:RESET(26,14):FOR
T=32T037:SET(T,14,7):SET(T,15,7):NEXTT:FORT=43T049:SET(T,14,2):NEXTT:RESET(46,14
):FORT=51T056:SET(T,14,8):NEXTT
570 FORT=19T021:SET(T,15,8):NEXTT:FORT=24T031:SET(T,15,2):NEXTT:RESET(25,15):RES
ET(27,15):FORT=38T043:SET(T,15,2):NEXTT:SET(47,15,2):SET(49,15,2):FORT=51T056:SE
T(T,15,8):NEXTT
572 FORT=20T023:SET(T,16,8):NEXTT:FORT=26T039:SET(T,16,2):NEXTT:RESET(28,16):RES
ET(29,16):RESET(33,16):RESET(34,16):RESET(35,16):FORT=50T056:SET(T,16,8):NEXTT
574 FORT=21T025:SET(T,17,8):NEXTT:FORT=28T035:SET(T,17,8):NEXTT:RESET(30,17):RES
ET(31,17):RESET(32,17):FORT=47T055:SET(T,17,8):NEXTT576 FORT=21T038:SET(T,18,8):
NEXTT:FORT=46T055:SET(T,18,8):NEXTT
578 FORT=22T037:SET(T,19,8):NEXTT:FORT=45T055:SET(T,19,8):NEXTT
580 FORT=23T036:SET(T,20,8):NEXTT:FORT=44T054:SET(T,20,8):NEXTT
582 FORT=24T053:SET(T,21,8):NEXTT
584 FORT=25T052:SET(T,22,8):NEXTT
586 FORT=26T047:SET(T,23,8):NEXTT
590 GOTO 590
```

SPECIALS (REPORTS, PROGRAMS, ETC...)

In past issues of TRS-80 Computing you may have seen this section once in a great while. That's because it was an optional section and was put in when we had something to take up space. Starting this month, we decided to make this section come out every consecutive month. This will also take place of the "What's On Sale" section.

THIS MONTH: TEXT DESIGNS

You can have your Color Computer print patterns on the text screen by using asterisks (*), and also have messages go in different directions on the screen by using TAB commands. Try the programs below:

```
5 FOR H=1 TO 100
10 PRINT "COCO";
15 NEXT H
- Fills up the screen
  with "COCO"
```

```
5 FOR H=1 TO 25
10 PRINT TAB(15); "COCO"
15 NEXT H
- Prints "COCO" in one big
  column down the screen
```

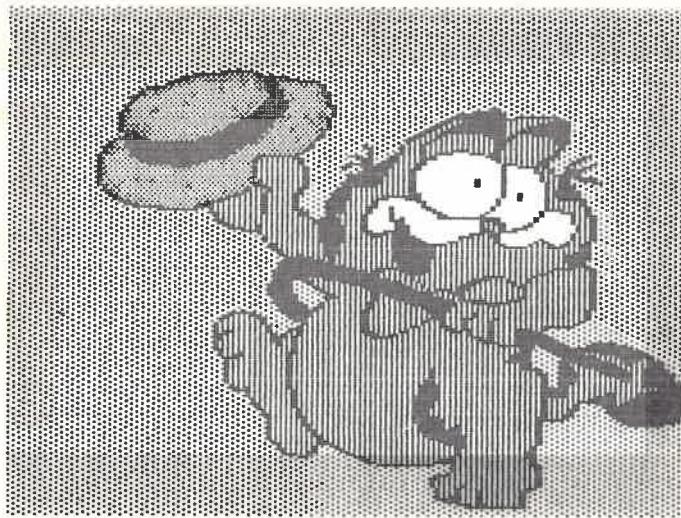
```
5 FOR H=25 TO 1 STEP -1
10 PRINT TAB(H); "COCO"
15 NEXT H
- Starts at the top right
  and descends down to
  the bottom left with
  our favorite computer
```

```
5 CLS
8 A=15
10 PRINT TAB(A); "*"
12 FOR H=1 TO 9
15 PRINT TAB(A-H); "*";
20 PRINT TAB(A+H); "*"
25 NEXT H
```

- Prints an up arrow
using asterisks

```
5 CLS
8 A=15
12 FOR H=9 TO 1 STEP -1
15 PRINT TAB(A-H); "*";
20 PRINT TAB(A+H); "*"
25 NEXT H
30 PRINT TAB(A); "*"
- Prints a down arrow
  using asterisks
```

THE PROGRAMMER



A U G U S T

THIS MONTH'S PROGRAM

THE FLYING BIRD

THE FLYING BIRD BY DAVID MCNALLY

16K
GRAPHICS
ANIMATION

REQUIREMENTS: NONE

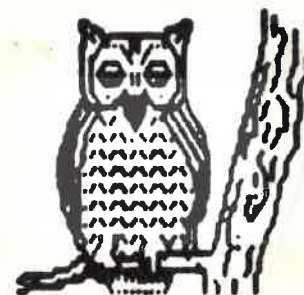
The one thing people look for the most in graphics is animation. Since this month is a graphics issue, I decided to work on some simple animation using CHR\$ codes and PRINT@ commands. As you can see by running the program, 16K animation works quite well. After keying in the listing (being especially careful when entering the CHR\$ codes; as for one little mistake could mess up the whole program), enter all four birds colors. The colors go like so:

1-yellow 5-cyan
2-blue 6-magenta
3-red 7-orange
4-buff

Then sit back, and watch the bird take off.

THE PROGRAM: BIRD

```
1 ' THE FLYING BIRD
2 ' BY DAVID MCNALLY
3 ' COPYRIGHT (C) 1989
4 ' BY TRS-80 COMPUTING
5 CLEAR 400
8 CLS
10 PRINT@0,"THE FLYING BIRD BY DAVID MCNALLY";
11 PRINT:PRINT
12 INPUT"BIRD POSITION 1'S COLOR(1-7)";A:IF A<1 OR A>7 THEN 8
14 CLS
16 INPUT"BIRD POSITION 2'S COLOR(1-7)";B:IF B<1 OR B>7 THEN 14
18 CLS
20 INPUT"BIRD POSITION 3'S COLOR(1-7)";C:IF C<1 OR C>7 THEN 18
22 CLS
24 INPUT"BIRD POSITION 4'S COLOR(1-7)";D:IF D<1 OR D>7 THEN 22
26 CLS0
28 A=A*16
30 B=B*16
32 C=C*16
34 D=D*16
36 A$=CHR$(129+A)+CHR$(138+A)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(133+A)+CHR$(130
+A)
38 B$=CHR$(135+A)+CHR$(138+A)+CHR$(131+A)+CHR$(143+A)+CHR$(131+A)+CHR$(133+A)+CH
R$(139+A)
40 C$=CHR$(129+A)+CHR$(143+A)+CHR$(138+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CH
R$(133+A)+CHR$(143+A)+CHR$(130+A)
42 D$=CHR$(135+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CH
R$(143+A)+CHR$(143+A)+CHR$(139+A)
44 E$=CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CH
R$(143+A)+CHR$(143+A)+CHR$(143+A)
46 F$=CHR$(141+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CH
R$(142+A)
48 G$=CHR$(133+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(138+A)
50 H$=CHR$(132+A)+CHR$(143+A)+CHR$(143+A)+CHR$(143+A)+CHR$(136+A)
52 I$=CHR$(143+A)+CHR$(143+A)+CHR$(143+A)
54 J$=CHR$(140+A)+CHR$(140+A)+CHR$(140+A)
56 K$=CHR$(133+B)+CHR$(131+B)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(131+B)+CHR$(143
+B)+CHR$(131+B)+CHR$(128)+CHR$(128)+CHR$(128)+CHR$(131+B)+CHR$(138+B)
58 L$=CHR$(143+B)+CHR$(143+B)+CHR$(130+B)+CHR$(128)+CHR$(143+B)+CHR$(143+B)+CHR$
(143+B)+CHR$(128)+CHR$(129+B)+CHR$(143+B)+CHR$(143+B)
```



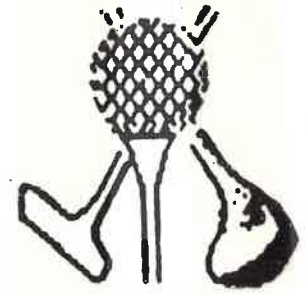
PAR 3 GOLF
FLOYD KEIRNAN

C O C O 3
REQUIREMENTS: JOYSTICK

Attention all golf players! Golf is a great sport to play, so if today is a rainy day and you are in the mood to play golf, why not play it on your CoCo 3? All you need is a joystick and your all set to play a round of "indoor" golf. All instructions are on-screen.

THE PROGRAM: GOLFPAR3

```
0 '(C) COPYRIGHT 1989 TRS-80 COMPUTING ALL RIGHTS RESERVED
1 'PAR 3 GOLF
4 'FOR TANDY COLOR COMPUTER 3
7 'BY FLOYD KEIRNAN
10 '6908 GOLD OAK LN, CITRUS HEIGHTS, CA 95621 PH.619-722-4985
12 CLS:PRINTTAB(161):INPUT "TYPE OF MONITOR (RGB/CMP)R/C";MM$:IF MM$="R" THEN M=
9 ELSE M=5
13 PALETTE CMP:HSCREEN2:PALETTE9,16:HCOLOR8,0
16 HDRAW"BM115,30F80E8H4G8BM191,30G80H8E4F8":HCIRCLE(168,106),6,4
19 HDRAW"BM85,150U12R4F2D2G2L BM+12,6U8E4F4D4L8R8D4BM+8,0U12R4F2D2G2L4F6BM+16,-2
D1F2R4E2U2H2L2R2E2U2H2L4G2D1BM+34,+0U2H2L4G2D8F2R4E2U2L2BM+10,2U8E2R4F2D8G2L4H2B
M+23,3L6U12BM+14,11U12R6L6D6R3"
22 HDRAW"BM45,172U12R4F2D2G2L4R4F2D2G2L4BM+12,-12F6E6G6D6BM+20,0U12R6L6D6R3BM+16
,6L6U12BM+12,10U8E2R4F2D8G2L4H2BM+13,-10F6E6G6D6BM+11,0U12R5F2D8G2L5
25 HDRAW"BM157,172U12D7E7G6F6BM+8,0U12R6L6D6R4L4D6R6BM+8,0U12BM+8,12U12R4F2D2G2L
4F6BM+8,0U12D1F10D1U12BM+8,12U8E4F4D4L8R8D4BM+8,0U12D1F10D1U12"
28 FOR X=7 TO 320 STEP 16:HCIRCLE(X,5),3,4:NEXT X
31 FOR Y=22 TO 172 STEP 16:HCIRCLE(311,Y),3,4:NEXT
34 FOR X=311 TO 7 STEP -16:HCIRCLE(X,186),3,4:NEXT
37 FOR Y=167 TO 17 STEP -16:HCIRCLE(7,Y),3,4:NEXT
40 X=7:Y=151:HCIRCLE(X,Y),3,2
43 FOR P=0 TO 10:HCIRCLE(X,Y),3,4:HCIRCLE(X,Y),3,0
46 X=X+12:Y=Y-4
49 NEXT P
52 HCIRCLE(X,Y),3,4
55 X=311:Y=150:HCIRCLE(X,Y),3,2
58 FOR P=0 TO 10:HCIRCLE(X,Y),3,4:HCIRCLE(X,Y),3,0
61 X=X-13:Y=Y-4
64 NEXT P:HCIRCLE(X,Y),3,4:HPAINT(X,Y),4,4
67 SOUND 150,1:HCIRCLE(X,Y),3,4:FOR Q=0 TO 1000:NEXT
70 HSCREEN0:CLS:PRINT@34,"BALL IS CONTROLLED WITH THE RIGHT JOYSTICK"
73 PRINT@98,"CLUB NO. <---> <WEDGE---NO.1>"
76 PRINT@138,"VELOCITY---^"
79 PRINT@194,"DRIVE BALL WITH RED BUTTON"
82 PRINT@258,"PUTTING ANGLE IS CONTROLLED WITH THE RIGHT JOYSTICK"
85 PRINT@451,"PRESS ANY KEY TO CONTINUE"
88 IF INKEY$="" THEN 88
91 CLS:PRINT@35,"YOU HAVE A CHOICE OF THREE OPTIONS"
94 PRINT@130,"NO.1--REGULAR GOLF":PRINT@194,"NO.2--GATED DRIVE (REQUIRES A
MORE CAREFUL SELECTION OF CLUB ANGLE)"
97 PRINT@322,"NO.3--DRIVING RANGE(FOR DRIV- ING PRACTICE)":PRINT@424,"**
HAVE FUN!**"
109 G$=INKEY$:IF G$="" THEN 109
112 H=1:CLS
```



```
115 TT=0
118 S=0:D=0
121 J=RND(80)+100 'GREEN LOCATION
125 G=INT((RND(50)+J-50)/8)*8 'HOLE LOCATION
128 F=INT((RND(50)+250)/8)*8
130 X=4:Y=182
136 HSCREEN2:HCOLOR8,0
139 HCIRCLE (254,J),71,8,1.2 :HPAINT (250,J),M,8 'GREEN
142 EE=RND(10)/10
145 HCIRCLE(90,0),100,2,EE:HPAINT(3,3),2,2 'LAKE
148 HCIRCLE(F,G),7,,.8 'HOLE
151 IF H<10 THEN HLINE (F,G)-(F,G-20),PSET:HLINE -(F-10,G-20),PSET:HLINE -(F-10,
G-8),PSET:HLINE -(F,G-8),PSET
153 IF H>9 THEN HLINE (F,G)-(F,G-20),PSET:HLINE -(F-16,G-20),PSET:HLINE -(F-16,G
-8),PSET:HLINE -(F,G-8),PSET
157 IF H>9 THEN HPRINT ((F-9)/8-1,(G-14)/8),H
158 IF H<10 THEN HPRINT ((F-9)/8,(G-14)/8),H
160 C=RND (70)+100 'SAND TRAP
163 D=RND(80)+70
166 E=RND(10)/10+.5
169 U=RND(21)+19
172 IF G#="1" OR G#="3" THEN 181
175 HLINE(0,120)-(U+4,U+115),PSET:HLINE-(U-20,U+130),PSET:HLINE -(0,150),PSET:HP
AINT(3,140),9,8 'GATE
178 HLINE(U+16,U+126)-(78,192),PSET:HLINE-(44,192),PSET:HLINE-(U-5,U+143),PSET:H
LINE-(U+16,U+126),PSET:HPAINT(52,190),9,8 'GATE
181 A#="G5R3G6R4G7R10D4R2U4R10H7R4H6R2H5;BL5;BD23;R14":C#="XA#;BR28;BD40"
184 ON H GOTO 187,190,193,196,199,202,205,208,211,187,193,199,205,211,190,196,20
2,208
187 HDRAW"S6C1BM50,100;XC#;":HPAINT(45,110),7,1:GOTO 214
190 HDRAW"C1BM25,100;XC#;":HPAINT(20,110),7,1:GOTO 214
193 HDRAW"S4C1BM150,165;XC#;":HPAINT(145,175),3,1
196 HDRAW"C1BM130,160;XC#;":HPAINT(125,170),1,1:GOTO 214
199 HDRAW"C1BM15,75;XC#;":HPAINT(10,85),1,1
202 HDRAW"C1BM100,165;XC#;":HPAINT(95,175),1,1
205 HDRAW"C1BM245,20;XC#;":HPAINT(245,30),3,1:GOTO214
208 HDRAW"C1BM180,75;XC#;":HPAINT(175,85),1,1
211 HDRAW"C1BM60,100;XC#;":HPAINT(55,110),1,1
214 HDRAW"C4BM 4,187;U2H2F2E2":HCIRCLE(X,Y),3,4:HPAINT(X,Y),4,4 'TEE
217 IF G#="1" OR G#="2" THEN FOR AA=40 TO 10 STEP -10:HCIRCLE(C,D),AA,1,E:NEXT
220 IF BUTTON(0)=1 THEN 223 ELSE 220
223 A=ABS(JOYSTK(0)-64)/5+1 'CLUB ANGLE
226 V=-INT(JOYSTK(1)-90)*1.5 'CLUB VELOCITY
229 IF X<185 THEN T=.1:GOTO 235
232 IF X>185 THEN GOTO 337
226 SOUND 175,1
235 XA=X:YA=Y
238 SOUND 175,1
241 HCIRCLE(XA,YA),3,4:HCIRCLE(XA,YA),3,0
244 X=XA+INT((V*COS((A*5+10)/57))*T)+2 'X TRAJECTORY
247 DD=YA
250 Y=INT((-INT(JOYSTK(1)-64)*2*SIN((A*5+10)/57)*T-16*T^2))+DD 'Y TRAJECTORY
253 IF Y>180 THEN Y=180
254 IF Y<3 THEN Y=3
256 IF G#="1"OR G#="3" THEN 265
262 IF HPOINT(X-4,Y)=9 AND X<75 THEN S=S+1:GOSUB 472:HCIRCLE(4,182),1:X=4:Y=182:
GOTO 322
265 IF G#<>"3" AND HPOINT(X-1,Y+1)=7 AND X<66 THEN GOSUB 490:GOTO 220 'HIT TREE
268 IF X=>320 THEN S=S+1:GOTO 356 'IN THE ROUGH
271 IF Y<4 THEN Y=4
```

```

275 IF HPOINT(X,Y+5)=2 AND S=0 THEN HPRINT(1,0),"OH! OH! IN THE DRINK":HPRINT(4,
1),"TRY A NEW BALL":S=S+1:HCIRCLE(X,Y),3,4:HPOINT(X,Y),4,4:HCIRCLE(4,182),3,4:X=
4:Y=182:GOTO 214
278 IF HPOINT(X,Y+3)=2 AND S>0 THEN HPRINT(1,3),"HOW'S THE FISHING?":S=S+1:HCIRC
LE(X,Y),3,4:HPOINT(X,Y),4,4:HCIRCLE(4,182),3,4:X=4:Y=182:GOTO 214
281 IF G$<>"3" AND Y>D AND X>C-25 AND X<C+25 AND Y>D-25*E AND Y<D+25*E THEN PLAY
"L16;G;P64;L8;02;G":X=C-2:Y=D:S=S+1:HPRINT(2,20),"OH! OH! THE SAND TRAP":HPRINT(
2,22),"PENALTY, 1 STROKE":GOTO 301
283 IF S=0 AND X>F-9 AND X>F+9 AND Y>G-14 AND Y<G+6 THEN S=S+1:GOTO 397 'HOLE I
N ONE
286 X1=X:Y1=Y
289 IF HPOINT(X,Y+3)=0 OR 9 THEN HCIRCLE(X,Y),3,4:HCIRCLE(X,Y),3,HPOINT(X,Y+3)
292 T=T+.3 'TRAJECTORY UNIT
295 IF Y=180 THEN 301
298 IF X>F-30 AND X<F+30 AND( Y>G AND Y<G+30)OR(X>F-30 AND X<F+30 AND Y>G-30 AND
Y<G-15)THEN 301 ELSE 244
301 FOR X=X TO X+6 STEP 2 'BALL ROLL
304 HCIRCLE(X,Y),3,4
307 HCIRCLE(X,Y),3,HPOINT(X,Y+3)
310 NEXT X
313 HCIRCLE(X,Y),3,4
316 S=S+1
319 IF X=>320 THEN 356
322 IF G$<>"3" AND X<185 THEN 220
325 IF G$="3" AND X<185 THEN 331
328 IF G$<>"3" AND X>185 THEN 337
331 IF G$="3" AND H=1 THEN S=0:X=4:Y=182:GOTO 214
334 GOTO322
337 IF HPOINT(X,Y+3)=9 THEN HCOLOR8,9:HLINE(F,G)-(F,G-20),PRESET ELSE 346'REMOVE
FLAG FOR PUTTING
340 IF H>9 THEN HLINE-(F-16,G-20),PRESET:HLINE -(F-16,G-8),PRESET
341 IF H<10 THEN HLINE -(F-10,G-20),PRESET:HLINE -(F-10,G-8),PRESET
343 HLINE -(F,G-8),PRESET
345 HCOLOR8,0
346 X1=X:Y1=Y
349 IF X>F-6 AND X<F+6 AND Y>G-6 AND Y<G+6 THEN GOTO 397 ELSE 364
352 IF Y<8 THEN Y=8
356 IF G$<>"3" AND X=>320 THEN X=315:S=S+1:HPRINT(22,1),"INTO THE ROUGH":HPRINT(
22,2),"DROP A NEW BALL":HPRINT(22,4),"PENALTY, 1 STROKE":FORQ=0TO2000:NEXTQ:HCIR
CLE(X,Y),3,4:HPOINT(X,Y),4,4:GOTO 322
358 IF X>F-6 AND X<F+6 AND Y>G-6 AND Y<G+4 THEN 397 :REM IN THE HOLE(DRIVE)
361 GOTO 322
364 HCIRCLE(X,Y),3,4:IF BUTTON(0)=1 THEN 367 ELSE 364
367 SOUND 200,1:S=S+1
370 PX=(JOYSTK(0)-32)/4
373 PY=(JOYSTK(1)-32)/4
376 FOR Q=1 TO 10:HCIRCLE(X,Y),3,4:HCIRCLE(X,Y),3,HPOINT(X,Y+3)
377 HCIRCLE(X,Y),0,HPOINT(X-2,Y)
379 X=X+PX/SQR(Q)*2:Y=Y+PY/SQR(Q)*2 'PUTT
382 IF X=>320 THEN GOTO 356
385 IF X>F-6 AND X<F+6 AND Y>G-6 AND Y<G+6 THEN 397 'PUTT IN HOLE
388 IF Y<2 THEN Y=2
391 NEXTQ
394 GOTO 229
397 SOUND 100,1:HCIRCLE(F,G),3,4:HPOINT(F,G),4,4:FOR Q=0 TO 1500:NEXT 'BALL IN T
HE HOLE
400 IF G$="3" THEN S=0:GOTO 112
403 TT=TT+S:FF=FF+S 'COUNTS THE SCORE
406 IF S<>1 THEN HPRINT (27,20),"STROKES":HPRINT(35,20),S:FOR Q=0TO1000:NEXT Q

```

TRS-80 COMPUTING
PRESENTS...

DELUXE
MUSIC MACHINE
PLUS



FEATURES:

- *EDIT MODE
- *MORE NOTES
- *QUICK PAUSE
CHANGING
- *AUDIO ON/OFF
- *SHARPS, FLATS

COMING SOON

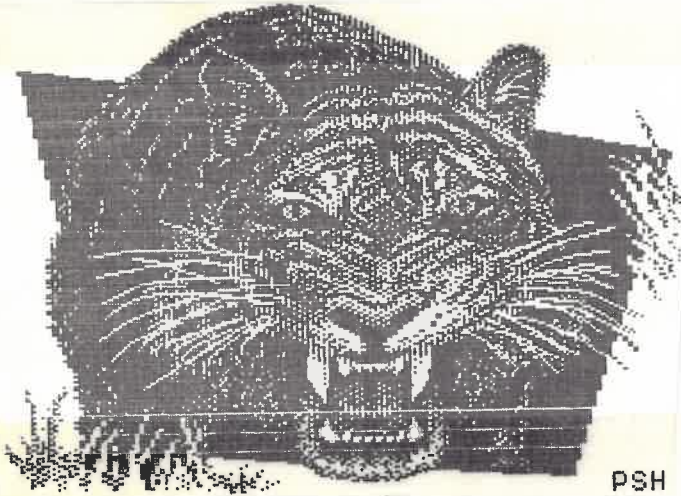
```

409 IF S=1 THEN HPRINT(10,20),"A HOLE IN ONE!!":HPRINT(10,22),"CONGRATULATIONS!"
:FORQ=0TO1000:NEXTQ
412 IF G$="3" THEN 214
415 IF S=2 THEN HPRINT(26,22),"A BIRDIE!"
418 IF S=3 THEN HPRINT(28,22),"PAR"
421 IF S=4 THEN HPRINT(28,22),"A BOGIE"
424 IF H=18 THEN HSCREEN0:PRINT@258,"YOUR SCORE ON THE BACK NINE":PRINT@290,"WA
S"TT:IF TT=<27 THEN PRINT@322,"YOU FINISHED"27-TT "UNDER PAR":PRINT@418,"HAVE A
GOOD DAY! COME BACK":PRINT@450,"AGAIN."
427 IF H=18 AND FF<=54 THEN PRINT@391,54-FF"UNDER PAR"
430 IF H=18 THEN PRINT@358,"TOTAL FOR 18 IS" FF:FOR Q=0 TO 5000:NEXT
433 IF H=18 THEN CLS:PRINT@258,"OH!OH! I DO BELIEVE IT'S STARTING TO RAIN-- BETT
ER RUN FOR THE CLUB HOUSE->":FOR Q=0TO2000:NEXTQ:HSCREEN2
436 'IF H=18 THEN HPAINT(50,100),9,8
439 IF H=18 THEN HDRAW "M52,45;R7U14L14D14R7L40U20L5E20R50F20L5D20L38":HPAINT(15
,22),5,8:HPRINT(2,2),"19TH HOLE":X=RND(300):Y=RND(150):HCIRCLE(X,Y),1,4
442 IF H=18 THEN HLINE-(F,G-8),PSET:HPAINT(F,G),3,4:Z=RND(20)
445 IF H=18 THEN PLAY "T15V20L7502E":FOR Q=0TO 300 STEP Z:NEXT:GOTO439
448 IF H=9 THEN HSCREEN0:PRINT@258,"YOUR SCORE ON THE FRONT NINE WAS"TT:IF TT
<=27 THEN PRINT@354,"YOU FINISHED"27-TT "UNDER PAR":FF=TT
451 IF H=9 THEN PRINT@418,"PRESS Y TO START THE BACK NINE W TO START THE FRONT N
INE AGAIN N TO END THE GAME"
454 IF H<>9 THEN H=H+1:GOTO 118
457 IF H=9 THEN E$=INKEY$
460 IF E$="" THEN 457
463 IF E$="Y" THEN H=H+1:CLS:GOTO 115
466 IF E$="W" THEN GOTO 112
469 IF E$="N" THEN CLS:PRINT@258,"HOPE YOU ENJOYED THE GAME":PRINT@294," COME BA
CK AGAIN.":END
472 SOUND 150,1:IF X>22 THEN FOR X=X TO X-20 STEP 10:HCIRCLE(X,Y),3,4:HCIRCLE(X,
Y),3,0:NEXT X:HCIRCLE(X,Y),3,4:HCIRCLE(4,182),3,4:HPAINT(4,182),4,4
475 HPRINT(0,12),"NARROW IS THE GATE":HPRINT(0,13),"TRY A NEW BALL"
478 RETURN
481 'HSCREEN2
484 X=4:Y=188
487 HCIRCLE(X,Y),1,4
490 SOUND 180,1:FOR Y=Y TO Y+20 STEP 10:HCIRCLE(X,Y),3,4:HCIRCLE(X,Y),3,HPOINT(X
+4,Y):NEXT Y:HCIRCLE(X,Y),3,4:S=S+1
493 HPRINT(0,10),"WHO PLANTED THAT TREE THERE!?"
499 HCIRCLE(125,165),8,4:HCIRCLE(123,164),1,4:HCIRCLE(127,164),1,4:HCIRCLE(125,1
67),1,4:HCIRCLE(125,169),2,4,.2:HCIRCLE(118,155),5,4,2,0,1:HCIRCLE(130,155),5,4,
2,0,1
502 HCIRCLE(136,179),16,4,.5:HCIRCLE(148,173),5,4:HCIRCLE(148,185),10,4,.5,.5,.8
:HLINE(136,187)-(148,187),PSET:HLINE(125,173)-(123,187),PSET:FOR Q=0TO1000:NEXT
505 HPRINT(2,24),"DON'T LOOK AT ME!,I DIDN'T DO IT"
508 RETURN

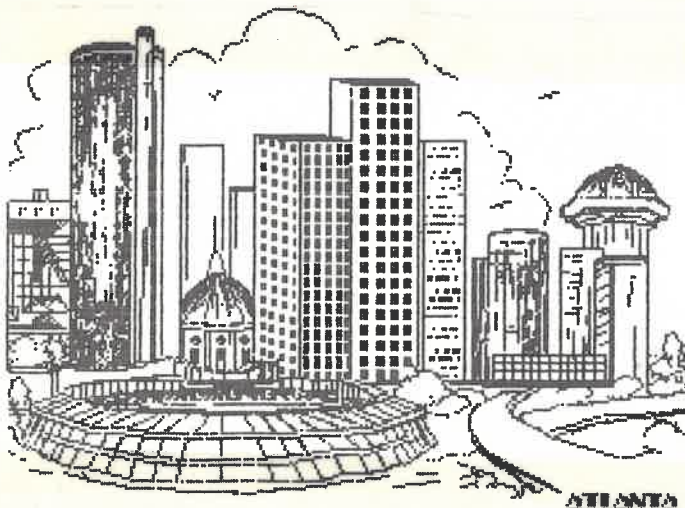
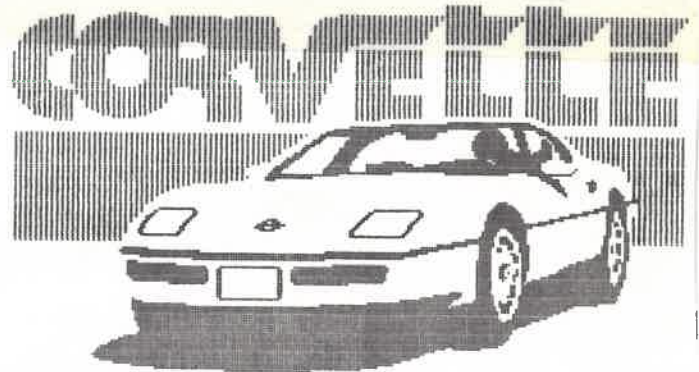
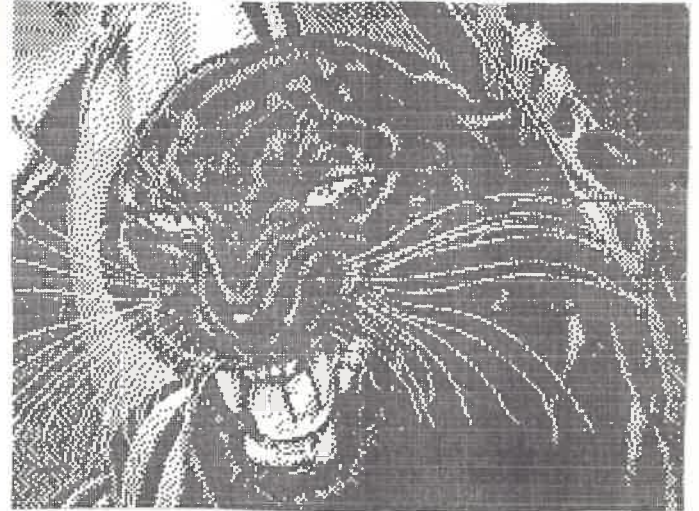
```



GRAPHICS GALLERY



PSH



ATLANTA

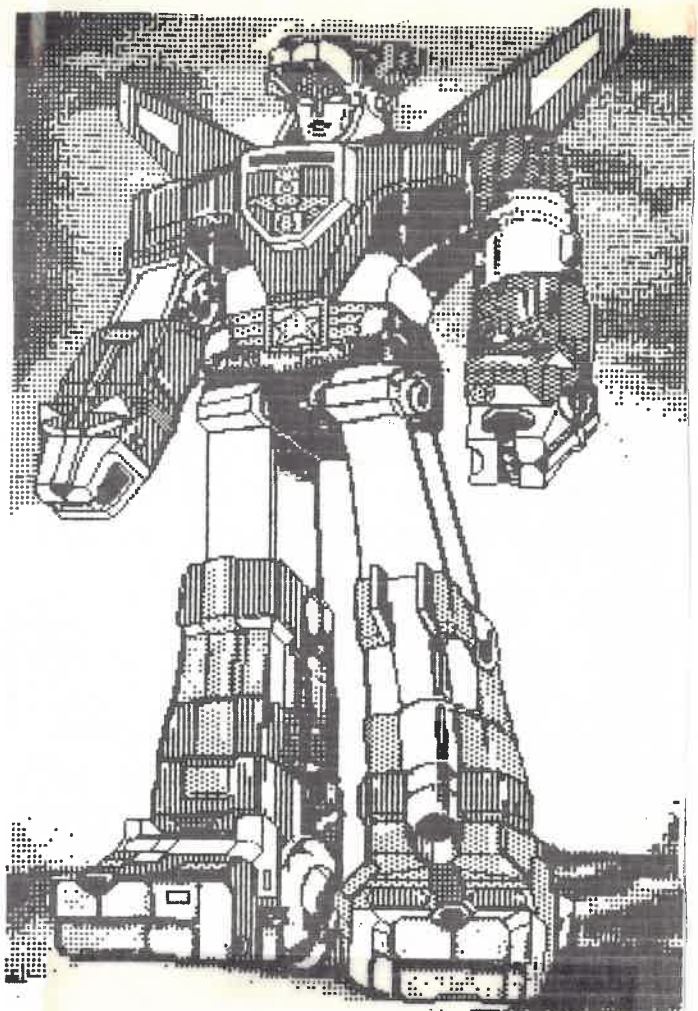


GRAPHICS CONTEST

WINNER FOR AUGUST
GRAPHICS CONTEST IS:

** ALBERT NOAK **

ALBERT USED COCOMAK II
AND HIS COCO 2 TO CREATE
THIS REALISTIC PICTURE OF
VOLTRON.



*** COMPUTER TRIVIA! ***

1. American Standard Code for Information Interchange stands for what?
2. What is a symbol used to represent information, such as numerals, letters, etc... ?
3. What is the exchange of information through transmission and reception between two locations?

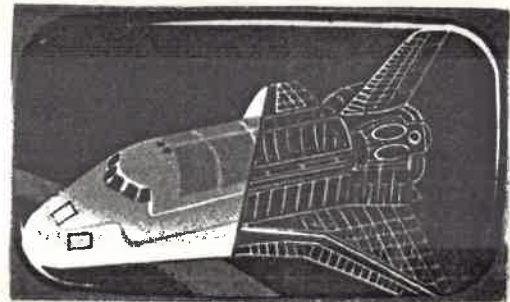
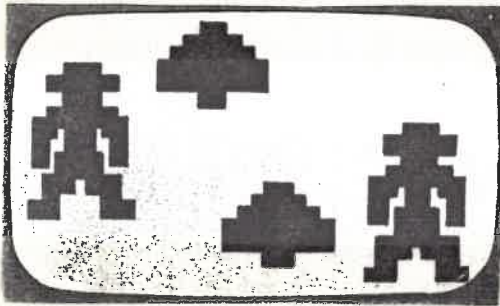
...ANSWERS FOR COMPUTER TRIVIA WILL BE FOUND ON THE LAST PAGE OF THIS ISSUE...

ATTENTION OS-9 ENTHUSIASTS - IN A FUTURE ISSUE OF TRS-80 COMPUTING WE WILL BE HAVING A SERIES OF ARTICLES ON OS-9. WE WANT TO KNOW FROM YOU, THE READERS, ON WHAT TYPE OF ARTICLES YOU WOULD LIKE (PROGRAMMING, INTRODUCTION, ETC...). DROP US A LINE AND LET US KNOW WHAT YOU WOULD LIKE TO LEARN MORE ABOUT ON OS-9.

High Resolution Graphics Tutorial

By Joe Ahern

Computer graphics is one of the most exciting features of any computer. There are different resolutions of graphics such as low, medium, and high resolution. The more resolution your picture has the more memory it takes up on your computer. For example, if you had a picture with very low resolution (63x43 pixels) you would only need 1K of memory. But, if you had a picture with very high resolution (512x512 pixels) you would need a computer with at least 128K of memory (See examples below).



Animation is another breakthrough in computer graphics. The effect of this is say for example you had an owl flying down to the ground. You would take four versions of the character and store them in different positions. You would then display the different versions as the owl descends (See figure 1).

Although the big thing of computer graphics is how the "commands" differ from computer to computer. For the next couple of months, I am going to have a tutorial on how to create your own pictures in BASIC on your Tandy Color Computer.

Last month, David McNally concluded his beginner's tutorial by talking about low resolution graphics on a non-extended Color Computer. Now I am going to take over by explaining to you on how to go about drawing pictures on a CoCo with Extended Color BASIC.

First of all, when drawing high resolution graphics on your CoCo you have to kind of prepare or "initialize" by using three (3) main commands: PMODE, PCLS, and SCREEN.

PMODE

PMODE sets the graphics resolution and starting page for a high-res picture. There are four graphics modes (levels of resolution) and eight starting pages. The syntax of PMODE is:

PMODE mode, startpage

If you donot specify a PMODE command the default would be mode 2, startpage 1 (PMODE 2,1).

An example of PMODE would be: PMODE 3,1. This sets the graphics mode to 3 (medium resolution) and the startpage to 1 (See figure 2 for PMODE settings).

PCLS

PCLS is one of the simplest graphics commands in Extended Color BASIC. It simply clears the current graphics screen to a specified color. If you omit the color it clears it to the background color, which is just like CLS (clears the screen), only PCLS clears the graphics screen. The syntax for PCLS is: PCLS color. For example PCLS 4 clears the graphics screen to red. Figure 3 shows a table of all the proper codes for various PMODES, color sets, and PCLS colors.

SCREEN

The SCREEN command is used for displaying the current graphics or text screen. The syntax for SCREEN is:

SCREEN type, colorset

Where "type" can be 0 for a text screen and 1 for a graphics screen, and "colorset" would be 0 or 1.

What SCREEN is really doing is telling the computer to display a screen image on your TV. You then go about by telling it to use the TV screen for text or graphics, and then what colorset to use (0 or 1).

An example of SCREEN is: SCREEN 1,0. This tells the computer to use a graphics screen (1) and colorset 0. The variety of colors in colorset 0 and 1 are shown below:

```
COLORSET 0 GREEN/YELLOW/BLUE/RED
COLOR SET 1 BUFF/CYAN/MAGNETA/ORANGE
```

Actually colorset 0 is: CLS(1)-CLS(4) and colorset 1 is: CLS(5)-CLS(8).

By putting everything together on the 3 commands you just learned you should have a program started somewhat like this:

```
1 PMODE 3,1
2 PCLS
3 SCREEN 1,0
```

This "initializes" the computer and prepares it to display high-resolution graphics.

Next month we will discuss the ECB graphics commands in order to plot points on the screen using: PSET, PRESET, PPOINT, and LINE.

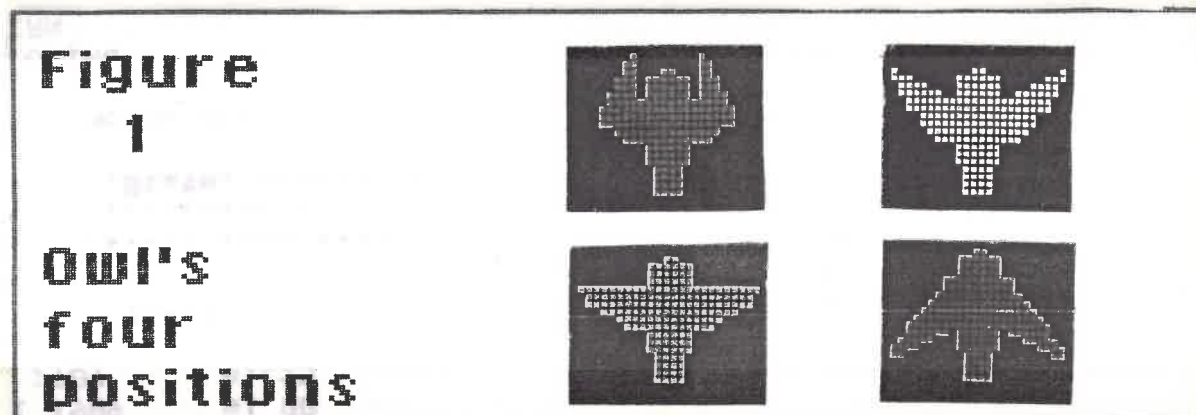


FIGURE 2 - PMODE SETTINGS

	RESOLUTION	COLORS	SCREENS
PMODE 4	HIGH	2	2
PMODE 3	MEDIUM	4	2
PMODE 2	MEDIUM	2	4
PMODE 1	LOW	4	4
PMODE 0	LOW	2	8

FIGURE 3 - PMODES & THEIR COLORS

PMODE	COLOR SET	PCLS COLORS
4	0	BLACK/GREEN
	1	BLACK/BUFF
3	0	GREEN/YELLOW/BLUE/RED
	1	BUFF/CYAN/MAGNETA/ORANGE
2	0	BLACK/GREEN
	1	BLACK/BUFF
1	0	GREEN/YELLOW/BLUE/RED
	1	BUFF/CYAN/MAGNETA/ORANGE
0	0	BLACK/GREEN
	1	BLACK/BUFF

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THANK-YOU

SIGNED *Joe Ahern* AND *David McHally*

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COMPUTER WORD SEARCH PUZZLE

In the word search puzzle below, there are 20 words relating to computers and our magazine. The first person who can find all 20 words by September 1st, 1989, will receive their next single issue free or a bonus issue on their long-term subscription. The entry with the most recent postmark will be accepted. If not all the words are found, then the next person with the most recent postmark wins. The winner of the contest will receive a prompt notice. Good Luck! (HINT: SOME OF THE WORDS ARE BACKWARDS)

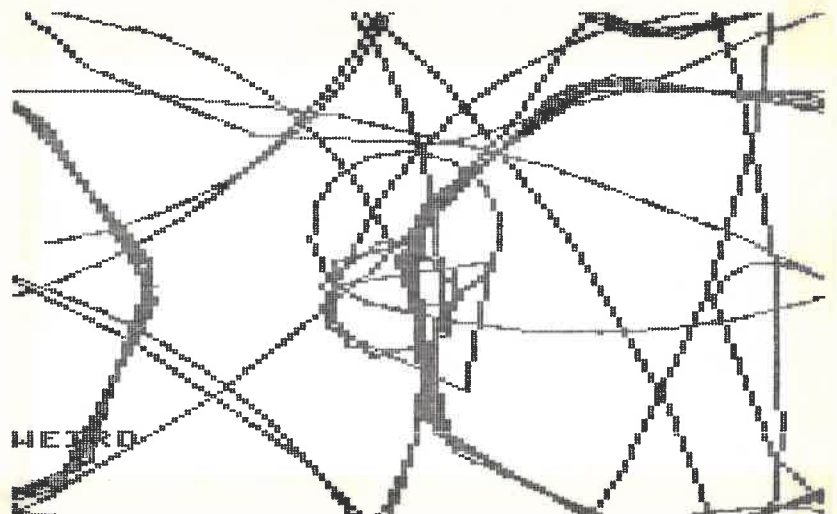
```
Z G S C V O E K F M R N J V K C A T T A N E I L A B W H K O C J
C M A G A Z I N E Z V Z X S M S T N E M E S I T R E V D A D Z R
N A R F W F S B M B R S U O H G Z R B S K Z E V I R D K S I D L
U Q I F N Q U T I L I T I E S U Z H P L G N I T U P M O C Z R E
B Z O M K X T R C I Z U G E E T F T B N L H E D D V Y L I J K Z
C B U D S W H E Y Q K W U Q U D T C N K G H O P R I N T E R I S
X F R V C L F W Q P B S L A I R O T U T S W E I V E R K E Y O M
X Q J N I C F O D Q H M S E X J E B L A D I S K J A C K E T S A
P Q F U H L W P H C E B E V A G L R T L T X Z O S W L C C G N R
T W R X P T A W S N D F D T C L A S S I F I E D F H A G G Q H G
H P Z M A S K A S T N E T N O C F O E L B A T R J O A Z A K P O
V I T P R L U R L X W H B O W L I N G P L N Q S T M I G Y U F R
J V B P G Q B D I E K O V P H I A Y M D Z T J M E X N Y M I S P
R E T Z M H L J R E T U P M O C R O L O C K Y S P G C B I A M Y
E F B D S P Y R Z C S E L A S K K W Y S K C I T S Y O J Q T H L
```

SUPER LOGO

GRAPHICS PROGRAM

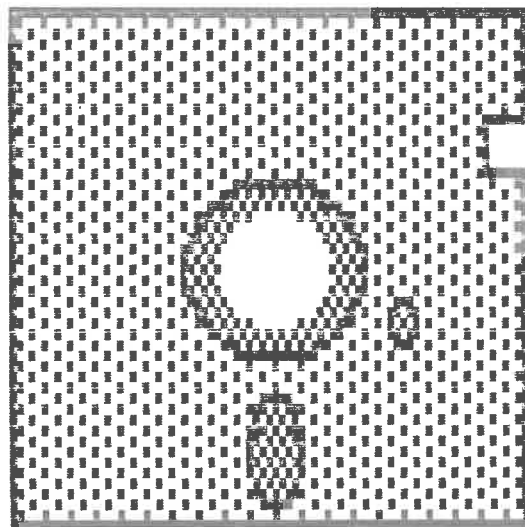
THE PROCEDURE: WEIRD DESIGN

```
TO WEIRD
FS
REPEAT 30(FD 20 RT 45 FD 8 RT 6
FD 50)
REPEAT 20(FD 60 RT 8 FD 10)
REPEAT 5(FD 60 RT 23)
REPEAT 15(FD 2 RT 7)
REPEAT 30(FD 22 RT 6)
REPEAT 16(FD 13 RT 25)
REPEAT 3(RT 110 FD 50)
REPEAT 12(RT 67 FD 25)
REPEAT 30(FD 20 RT 8)
HT
END
```



NOTE: COLOR LOGO USERS
DELETE THE "FS" COMMAND
AT THE BEGINNING OF THE
PROCEDURE.

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DELUXE MUSIC
MACHINE

When I first received Deluxe Music Machine I wasn't exactly jumping for joy. The reason being, I'm not very good with working with music. Fortunatley all that has changed.

Deluxe Music Machine comes with two pages of instructions and runs on a cassette or disk based CoCo, please specify when ordering.

The program doesn't really need any instructions at all, it is menu driven and I had no problems running it. I always run a program before I even pick up a manual, and I'll be the first to say that it passed this test with no problems at all.

Of course Deluxe Music Machine has a SAVE and LOAD option so that you can store all the works of art that you're bound to come up with. Being a programmer myself, I really like the way the music data is saved. Why?, you may ask. Very simple. It is very easy, and I mean VERY, to implement the music in a basic program that you have written. First you must convert the Data File into a BASIC File using the utility CONVERT that is included with the program. Then simply renumber the program and MERGE it into your BASIC program.

I've added music to a couple of programs that I have written, using music created with Deluxe Music Machine of course, and it really seemed to add a certain depth to them that wasn't there before.

You can set the TEMPO (length) of any note, you can also pause between notes (you decide how long), you can delete a note that you don't want (only in record mode), you can clear the memory after you have saved a piece you are working on or if your song isn't going to well you can use this to start over, and you can also print out a hardcopy.

Now to tell about PRACTICE and RECORD mode. This is the part of the program that I really enjoy. As I said at the beginning, I'm not very good with music, but with the practice and record mode I turned out a pretty decent copy of the Star Wars theme.

In Practice mode you can try out different notes until you find something you like. Then you can hit your Right-Arrow key to go into the Record mode and repeat the notes, flip back to Practice, find something you like, go back into Record mode, repeat the notes, and pretty soon you have a song to be proud of. *NOTE* Anything you play in the Practice mode WILL NOT be saved in the computer's memory. You have to be in Reccord mode to do that.*

You can also play back your song at any time by choosing the playback option.

I would like to try something that may seem a little new here. Anyone who has purchased a copy of Deluxe Music Machine and has created a song with it can send the song on tape or disk to TRS-80 Computing - C/O Albert Noah. I will in turn pick the best three songs received and send the person(s) who created it a Utility, Game (Arcade), Adventure (Text), and Mailing Label program from Noah Game Co. (A \$6.00 value).

I will also return any tapes or disks received (Please send two .25 cent stamps to defray postage costs).

I will also announce the winners and runner ups in a future issue.

To order Deluxe Music Machine please send \$4.95 + \$2.00 shipping and handling to:

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ANSWERS TO COMPUTER TRIVIA (PAGE 15)

1. ASCII
2. CHARACTER
3. COMMUNICATION