Listing I

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50 REM ************************ EASY
DRAW ****************************
60 REM *** A screen drawing and paint
ing utility by Glynne Davies ***
70 REM
80 REM
90 REM
100 REM
110 MEMORY &665A : REM * reserve memo
ry for screen dump and disc drive *
120 GOSUB 3700: REM * load machine co
de for memory dump *
130 REM *** Title page ***
140 MODE 0:FOR n=-PI TO 3 STEP PI/16:
pt= (pt+1) MOD 7:pc=pt+1
150 TAG: PLOT 80+(20*SIN(n)),200+(120
*COS(n)),pc
160 PRINT "*--EASY DRAW--*";:NEXT:TAG
OFF
170 LOCATE 10,23:PRINT "BY":LOCATE 6,
25: PEN 3:PRINT "G.M.DAVIES"
180 FOR n=1 TO 6000:NEXT
190 CALL &BC02
200 MODE 2:INK 15,1:INK 0,13:INK 1,0:
x=286:y=150:beam =0:testab=3
210 jump=20:jumpy=20:DIM blank$(100):
DIM character$(40)
220 beam=0:LOCATE 17,12:INPUT "Do you
 want to load a picture to memory Y o
r N";pic$
230 IF pic$="Y" OR pic$="y" THEN LOCA
TE 20,14:INPUT "Type in the name of t
he picture";picture$:ELSE GOTO 250
240 LOAD picture$,&6675
250 CLS:LOCATE 20,12:INPUT "Please ty
pe in the mode required (ie. 0  or 1
)";modescreen:IF modescreen > 1 OR mo
descreen <0 THEN GOTO 250
260 IF modescreen =1 THEN movx= 2:ELS
E movx=4
270 IF modescreen >1 THEN GOTO 250
280 MODE modescreen:INK 1,24
290 LOCATE(4*(modescreen*2)+5),12: IN
PUT "PICTURE Y/N";Y$
300 CLS
310 IF Y$="Y" OR Y$="y" THEN CALL 262
15
320 GOSUB 360 : REM * initialize *
330 GOSUB 510 : REM * program *
340 END
350 REM *** Initialize - set up the s
creen ***
360 WINDOW #2,1,2,1,22:WINDOW #3,1,80
/movx,23,25:WINDOW #8,1,80/movx,23,25
:WINDOW #4,3,80/movx,1,22
370 PAPER #2,0:PAPER #3,15:CLS #2:CLS
 #3
380 ORIGIN 64,48,64,640,48,400
390 DRAW 574,1,3:DRAW 574,350,3:DRAW
1,350,3:DRAW 1,1,3
400 PEN #2,0:LOCATE #2,2,20:PRINT #2,
CHR$(143);
410 REM ** Draw colours **
420 FOR count=0 TO 15
430 PEN #2,count
440 LOCATE #2,1,count+1:PRINT #2,CHR$
(65+count);CHR$(233)
450 NEXT count
460 PEN #2,4:LOCATE #2,1,1:PRINT #2,"
A"
470 PEN #2,5:LOCATE #2,1,17:PRINT #2,
"+"
480 IF movx=2 THEN LOCATE #2,1,1:PRIN
T #2,"A":LOCATE #2,1,5:PRINT #2,"E":L
OCATE #2,1,9:PRINT #2,"I":LOCATE #2,1
,13:PRINT #2,"M"
490 shift$="SHIFT":FOR count=1 TO 5:L
OCATE #2,1,17+count:PRINT #2,MID$ (sh
ift$,count,1):NEXT
495 PEN #3,1:LOCATE #3,13,3:PRINT #3,
"Beam off";:REM beam off
500 REM *** program ***
505 ON ERROR GOTO 505
510 WHILE exit <1
520 IF INKEY (1)=0 THEN PLOT x,y,tes:
x=x+movx:IF movtab=1 THEN extrax=extr
ax+movx
530 IF INKEY (8)=0 THEN PLOT x,y,tes:
x=x-movx:IF movtab=1 THEN extrax=extr
ax-movx
540 IF INKEY (0)=0 THEN PLOT x,y,tes:
y=y+2:GOSUB 2250:IF movtab=1 THEN ext
ray=extray+2:REM gosub to fill routin
e
550 IF INKEY (2)=0 THEN PLOT x,y,tes:
y=y-2:GOSUB 2250:IF movtab=1 THEN ext
ray=extray-2
560 IF INKEY (1)=32 THEN PLOT x,y,tes
:x=x+jump:IF movtab=1 THEN extrax=ext
rax+jump
570 IF INKEY (8)=32 THEN PLOT x,y,tes
:x=x-jump:IF movtab=1 THEN extrax=ext
rax-jump
580 IF INKEY (0)=32 THEN PLOT x,y,tes
:y=y+jumpy:IF movtab=1 THEN extray=ex
tray+jumpy
590 IF INKEY (2)=32 THEN PLOT x,y,tes
:y=y-jumpy:IF movtab=1 THEN extray=ex
tray-jumpy
600 IF mea=1 AND xp=XPOS AND yp=YPOS
AND meatrip=1 THEN character$(sh)=cha
racter$(sh)+STR$(xrel)+STR$(yrel):mea
trip=0:IF LEN(character$(sh)) >240 TH
EN SOUND 1,300,25: PEN #3,1:LOCATE #3
,1,1:PRINT #3,"Last tab setting ":mea
=0
610 IF INKEY(50)=128 THEN SOUND 1,100
,20:GOSUB 2920:REM redraw memory shap
e
620 IF INKEY(36)=128 THEN SOUND 1,100
,15:GOSUB 3520: REM load picture into
 memory
630 IF INKEY(16)=32 THEN CLS #4:MOVE
0,0:DRAW 574,1,3:DRAW 574,350,3:DRAW
1,350,3:DRAW 1,1,3:MOVE x,y:REM * era
se picture *
640 IF INKEY (9)=128 THEN SOUND 1,120
,10:beamtrip=(beamtrip+1) MOD 2:IF be
amtrip=0 THEN PEN #3,1:LOCATE #3,13,3
:PRINT #3,"Beam off";:REM beam on/off
/on copy key
650 IF beamtrip=0 THEN GOTO 670
660 IF INKEY (9)=0 THEN beam=1:PEN #3
,4:LOCATE #3,13,3:PRINT #3,"Beam on "
;:ELSE beam=0:PEN #3,4:LOCATE #3,13,3
:PRINT #3,"Beam off";:REM beam on/off
/on copy key
670 IF beamtrip=1 THEN GOTO 690
680 IF INKEY (54)=128 THEN SOUND 1,10
0,10:beam=(beam+1) MOD 2:IF beam=1 TH
EN PEN #3,1:LOCATE #3,13,3:PRINT #3,"
Beam on ";:ELSE beam=0:PEN #3,1:LOCAT
E #3,13,3:PRINT #3,"Beam off";:REM be
am on/off
690 IF INKEY(68)=128 THEN SOUND 1,100
,20:movtab=(movtab+1) MOD 2:IF movtab
=1 THEN PEN #3,1:LOCATE #3,1,2:PRINT
#3,"Tab moving       ":ELSE PEN #3,1:
LOCATE #3,1,2:PRINT #3,"Tab stopped
    ":xp=xp+extrax:yp=yp+extray:extrax
=0:extray=0 :REM moving tab
700 IF INKEY(35)=128 THEN SOUND 1,100
,10:GOSUB 3350 : REM input from tape
710 IF INKEY (21)=32 THEN GOSUB 1040:
 REM * pen colours *
730 IF INKEY (45)=128 THEN SOUND 1,10
0,25:GOSUB 2800: REM cursor jump
740 IF INKEY (68)=0 THEN SOUND 1,100,
5:xrel=x-xp:yrel=y-yp:xp=x:yp=y:PEN #
3,1:LOCATE #3,1,2:PRINT #3,"X";XPOS;"
Y";YPOS:tb=1:meatrip=1:REM tab settin
g
750 IF sh> 39 THEN GOTO 770
760 IF INKEY (38)=128 THEN SOUND 1,10
0,5:mea=(mea+1) MOD 2:IF mea=1 THEN P
EN #3,1:LOCATE #3,1,1:PRINT #3,"Memor
y on shape";sh:ELSE PEN #3,1:LOCATE #
3,1,1:PRINT #3,"Memory is off      ":
sh=sh+1
770 IF INKEY (61)=128 THEN SOUND 1,10
0,5:fil=(fil+1) MOD 2:IF fil=1 THEN L
OCATE #3,1,1:PRINT #3,"Draw to tab on
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 ":ELSE LOCATE #3,1,1:PRINT #3,"Draw
 to tab off ": REM draw to tab functi
on
780 IF INKEY(52)=128 THEN SOUND 1,200
,25:GOSUB 3630:REM go to options page
s
790 IF INKEY (60)=128 THEN SOUND 1,10
0,5: GOSUB 3230 : REM save shapes to
tape
800 IF INKEY (67)=128 THEN SOUND 1,10
0,25:PLOT x,y,14:GOSUB 960 :REM * Qui
ck circle *
810 IF INKEY (60)=32 THEN DRAWR xp+ex
trax-XPOS,yp+extray-YPOS,p :PLOT x,y,
14
820 IF INKEY (16)=128 THEN SOUND 1,10
0,10:PLOT x,y,14: GOSUB 1230 : REM *
circles, polygons *
830 IF INKEY (53)=128 THEN SOUND 1,10
0,5:infil=(infil+1) MOD 2:IF infil=1
THEN filc=TEST(x-2,y-2):LOCATE #3,1,1
:PRINT #3,"Fill on          ":ELSE LOC
ATE #3,1,1:PRINT #3,"Fill off
"
840 IF INKEY(27)=128 THEN SOUND 1,100
,5: GOSUB 2450 :REM * ink colour chan
ge *
850 IF INKEY (30)=128 THEN SOUND 1,10
0,5:MOVE 0,0:DRAW 574,1,3:DRAW 574,35
0,3:DRAW 1,350,3:DRAW 1,1,3:GOTO 2650
 : REM * picture save *
860 IF INKEY(51)=128 THEN SOUND 1,100
,5:GOSUB 2870 : REM * type at cursor
*
870 IF x=xx AND y=yy THEN GOTO 940
880 IF beam=1 THEN DRAW x,y,p:tes=p
890 IF beam=0 THEN tes=TEST(x,y):xx=x
:yy=y:PLOT x,y,14
900 IF tb=1 AND fil =1 THEN DRAWR  xp
+extrax-XPOS,yp+extray-YPOS,p
910 PEN #3,4:LOCATE #3,1,3:PRINT #3,"
X";xp"Y"yp
920 IF xp=xpt AND yp=ypt AND extrax=x
extra AND extray=yextra THEN GOTO 940

930 PEN #3,1:LOCATE #3,1,2:PRINT #3,"
X";xp+extrax;"Y";yp+extray :xpt=xp:yp
t=yp:xextra=extrax:yextra=extray
940 WEND
950 REM ** Quick circle **
960 CALL &BB1B:IF INKEY(67)=128 THEN
GOTO 960:CALL &BB1B
970 qc=1:PEN #3,1:LOCATE #3,1,1:INPUT
 #3,"RADIUS(->) above 4 or cursor ente
r 0";radx$:IF radx$=" " OR radx$="" T
HEN GOTO 978
975 IF ASC(radx$) < 48 THEN GOTO 978
980 radx= VAL(radx$):LOCATE #3,1,1:PR
INT #3,SPACE$ (40):IF radx=0 THEN GOS
UB 1850
990 radx=radx+(radx MOD movx) :MOVE x
+radx,y
1000 FOR count=0 TO 360 STEP 2:DEG:DR
AW x+(radx*COS(count)),y+(radx*SIN(co
unt)),p:NEXT
1010 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
1020 RAD:qc=0:RETURN
1030 REM ** pen colour change **
1040 IF INKEY (69)=32 THEN SOUND 1,15
0,5:p=0 :REM * A *
1050 IF INKEY (54)=32 THEN SOUND 1,15
0,5:p=1 :REM * B *
1060 IF INKEY (62)=32 THEN SOUND 1,15
0,5:p=2 :REM * C *
1070 IF INKEY (61)=32 THEN SOUND 1,15
0,5:p=3 :REM * D *
1080 IF INKEY (58)=32 THEN SOUND 1,15
0,5:p=4 :REM * E *
1090 IF INKEY (53)=32 THEN SOUND 1,15
0,5:p=5 :REM * F *
1100 IF INKEY (52)=32 THEN SOUND 1,15
0,5:p=6 :REM * G *
1110 IF INKEY (44)=32 THEN SOUND 1,15
0,5:p=7 :REM * H *
1120 IF INKEY (35)=32 THEN SOUND 1,15
0,5:p=8 :REM * I *
1130 IF INKEY (45)=32 THEN SOUND 1,15
0,5:p=9 :REM * J *
1140 IF INKEY (37)=32 THEN SOUND 1,15
0,5:p=10:REM * K *
1150 IF INKEY (36)=32 THEN SOUND 1,15
0,5:p=11:REM * L *
1160 IF INKEY (38)=32 THEN SOUND 1,15
0,5:p=12:REM * M *
1170 IF INKEY (46)=32 THEN SOUND 1,15
0,5:p=13:REM * N *
1180 IF INKEY (34)=32 THEN SOUND 1,15
0,5:p=14:REM * O *
1190 IF INKEY (27)=32 THEN SOUND 1,15
0,5:p=15:REM * P *
1200 PEN #2,p:LOCATE #2,2,20:PRINT #2
,CHR$(233);
1210 RETURN
1220 REM *** circles ***
1230 CALL &BB1B:IF INKEY(16)=128 THEN
 GOTO 1230:CALL &BB1B
1240 PEN #3,10:LOCATE #3,1,1:INPUT #3
,"RADIUS(->) above 4 or cursor enter 0
";radx$:IF radx$= " " OR radx$="" THE
N GOTO 1240
1245 IF ASC(radx$) < 48 THEN GOTO 124
0
1250 radx= VAL(radx$)
1260 LOCATE #3,1,1:PRINT #3,SPACE$ (4
0):IF VAL(radx$) < 4 THEN GOSUB 1850:
GOTO 1300
1270 LOCATE #3,1,1:PRINT #3,SPACE$ (4
0)
1280 LOCATE #3,1,1:INPUT #3,"RADIUS u
p/down >2";rady$:IF rady$=" " OR rady
$="" THEN GOTO 1280
1285 IF ASC(rady$) < 48 THEN GOTO 128
0
1290 rady=VAL(rady$):IF rady <2 THEN
GOSUB 1940
1300 LOCATE #3,1,1:PRINT #3,SPACE$ (6
0)
1310 LOCATE #3,1,1:INPUT #3,"Start po
sition 0 to 1 (ie .65)";stpos$:IF stp
os$=" " OR stpos$="" THEN GOTO 1310
1315 IF ASC(stpos$) < 46 THEN GOTO 13
10
1320 stpos=VAL(stpos$):IF VAL(stpos$)
 >1 THEN LOCATE #3,1,1:PRINT #3,"BETW
EEN 0 and 1 ie. .1 .25 .7 .9":FOR n=1
 TO 1000:NEXT:GOTO 1310
1330 LOCATE #3,1,1:INPUT #3,"Number o
f sides. Go >70 for circles";side$:IF
 side$=" " OR side$="" THEN GOTO 1330
1335 IF ASC(side$) <48 THEN GOTO 1330

1340 side=VAL(side$):IF VAL(side$) <
3 THEN GOTO 1330
1350 poly=(2*PI)/side
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1360 LOCATE #3,1,1:PRINT #3,SPACE$ (4
0)
1365 IF side > 19 THEN GOTO 1380 :REM
 miss delay
1370 IF side < 20 THEN LOCATE #3,1,1:
INPUT #3,"state delay ie. 200 for par
t shape";delay$:IF delay$="" OR dela
y$="" THEN GOTO 1370
1375 IF side < 20 AND ASC(delay$) < 4
8 THEN GOTO 1370: ELSE delay=VAL(dela
y$):LOCATE #3,1,1:PRINT #3, SPACE$(40
)
1380 LOCATE #3,1,1:INPUT #3,"Clockwis
e plotting @ Anticlockwise 1";cw$:IF
cw$=" " OR cw$="" THEN GOTO 1380
1385 IF ASC(cw$) <48 THEN 1380
1390 cw=VAL(cw$):IF VAL(cw$) >1 THEN
GOTO 1380
1400 LOCATE #3,1,1:PRINT #3,SPACE$ (4
0)
1410 LOCATE #3,1,1:INPUT #3,"Plot fro
m the cursor 1 or the centre 0";start
at$:IF startat$=" " OR startat$="" TH
EN GOTO 1410
1415 IF ASC(startat$) < 48 THEN GOTO
1410
1420 startat=VAL(startat$):IF VAL(sta
rtat$) >1 THEN GOTO 1410
1430 IF tb=0 THEN GOTO 1460
1440 LOCATE #3,1,1:INPUT #3,"Draw to
tab setting 1 or 0 for off (3D)";tba$
:IF tba$=" " OR tba$="" THEN GOTO 144
0
1445 IF ASC(tba$) <48 THEN GOTO 1440
1450 tba=VAL(tba$):IF VAL(tba$) > 1 T
HEN GOTO 1440
1460 LOCATE #3,1,1:PRINT #3,SPACE$ (4
0)
1470 LOCATE #3,1,1:PRINT #3,"SPACE BA
R TO STOP"
1475 radx=radx+(radx MOD movx)
1480 IF cw=1 THEN GOTO 1680: REM anti
clockwise
1490 IF startat=0 THEN PLOT x,y,tes
1500 IF startat=1 THEN x=x-(radx* SIN
(stpos*2*PI)):y=y-(rady*COS(stpos*2*P
I)):MOVE x,y
1510 MOVE x+(radx*SIN(stpos*2*PI)),y+
(rady*COS(stpos*2*PI))
1520 REM ** circle clockwise **
1530 FOR count= stpos*2*PI TO (4*PI)+
poly STEP poly
1540 DRAW x+(radx*SIN(count)),y+(rady
*COS(count)),p:IF movtab=1 THEN extra
x=(XPOS-x)-radx*SIN(stpos*2*PI):extra
y=(YPOS-y)-rady*COS(stpos*2*PI)
1550 IF INKEY (68)=32 THEN DRAWR xp+e
xtrax-XPOS,yp+extray-YPOS,p:MOVE x+(r
adx*SIN(count)),y+(rady*COS(count))
1560 IF INKEY (21)=32 THEN GOSUB 1840
: REM * pen colours *
1570 IF tba=1 THEN DRAWR xp+extrax-XP
OS,yp+extray-YPOS,p:MOVE x+(radx*SIN(
count)),y+(rady*COS(count))
1580 IF INKEY (47)=0 THEN count=(4*PI
)+poly
1590 IF xyoff=1 THEN GOTO 1610
1600 LOCATE #3,1,3:PRINT #3,"X";XPOS;
"Y";YPOS
1610 FOR rest=0 TO delay:IF INKEY (47
)=0 THEN count=(4*PI)+poly:ELSE NEXT
1620 NEXT
1630 LOCATE #3,1,1:PRINT #3,SPACE$(60
):x=XPOS:y=YPOS
1640 LOCATE #3,1,3:PEN #3,4:PRINT #3,
"X";XPOS;"Y";YPOS:IF beam=1 THEN PEN
#3,1:LOCATE #3,13,3:PRINT #3,"Beam on
 ";:ELSE beam=0:PEN #3,1:LOCATE #3,13
,3:PRINT #3,"Beam off";:REM beam on/o
ff
1650 extrax=CINT(extrax):extray=CINT(
extray)
1660 RETURN
1670 REM ** circle anticlockwise **
1680 stpos=stpos+0.5:IF startat=0 THE
N PLOT x,y,tes
1690 IF startat=1 THEN x=x+(radx* SIN
(stpos*2*PI)):y=y+(rady*COS(stpos*2*P
I))
1700 MOVE x-(radx*SIN(stpos*2*PI)),y-
(rady*COS(stpos*2*PI))
1710 FOR count=2*PI*stpos TO -((2*PI)
+poly) STEP -poly
1720 DRAW x-(radx*SIN(count)),y-(rady
*COS(count)),p :IF movtab=1 THEN extr
ax=(XPOS-x)+radx*SIN(2*PI*stpos):extr
ay=(YPOS-y)+rady*COS(2*PI*stpos)
1730 IF INKEY (68)=32 THEN DRAWR xp+e
xtrax-XPOS,yp+extray-YPOS,p:MOVE x-(r
adx*SIN(count)),y-(rady*COS(count))
1740 IF tba=1 THEN DRAWR xp+extrax-XP
OS,yp+extray-YPOS,p:MOVE x-(radx*SIN(
count)),y-(rady*COS(count))
1750 IF INKEY (47)=0 THEN count= -((2
*PI)+poly)
1760 LOCATE #3,1,3:PRINT #3,"X";XPOS;
"Y";YPOS
1770 IF INKEY (21)=32 THEN GOSUB 1840
: REM * pen colours *
1780 FOR rest=0 TO delay:IF INKEY (47
)=0 THEN count= -((2*PI)+poly):ELSE N
EXT
1790 NEXT
1800 LOCATE #3,1,1:PRINT #3,SPACE$(60
):x=XPOS:y=YPOS:count =0
1810 LOCATE #3,1,3:PEN #3,4:PRINT #3,
"X";XPOS;"Y";YPOS:IF beam=1 THEN PEN
#3,1:LOCATE #3,13,3:PRINT #3,"Beam on
 ";:ELSE beam=0:PEN #3,1:LOCATE #3,13
,3:PRINT #3,"Beam off";:REM beam on/o
ff
1820 extrax=CINT(extrax):extray=CINT(
extray)
1830 RETURN
1840 REM * horizontal cursor radius s
etting *
1850 WHILE radx =0
1860 LOCATE #3,1,1:PRINT #3,"Use arro
w keys (<--) to place,then enter";
1870 IF INKEY(1)=0 THEN PLOT x+rstep,
y,rtes:rtes=TEST(x+rstep+movx,y):rste
p=rstep+movx:PLOT x+rstep,y,14
1880 IF INKEY (8)=0 THEN PLOT x+rstep
,y,rtes:rtes=TEST(x+rstep-movx,y):rst
ep=rstep-movx:PLOT x+rstep,y,14
1890 IF INKEY (18)=0 THEN radx=ABS(rs
tep):PLOT x+rstep,y,rtes
1900 PLOT x,y,14
1910 WEND:rtes=14:rstep=0:CALL &BB18
1920 IF qc=1 THEN RETURN
1930 LOCATE #3,1,3:PRINT #3,SPACE$(20
):LOCATE #3,1,3:PRINT #3,"Hori-rad is
";radx;"y=X"
1940 rady=0
1950 REM * up/down radius set by curs
or *
1960 WHILE rady=0
1970 LOCATE #3,1,1:PRINT #3,"Use arro
w keys then press enter "
1980 IF INKEY(0)=0 THEN PLOT x,y+rste
p,rtes:rtes=TEST(x,y+rstep+2):rstep=r
step+2:PLOT x,y+rstep,14
1990 IF INKEY(2)=0 THEN PLOT x,y+rste
p,rtes:rtes=TEST(x,y+rstep-2):rstep=r
step-2:PLOT x,y+rstep,14
2000 IF rstep=0 AND INKEY(63)=0 THEN
rady=radx
2010 IF INKEY(18)=0 THEN rady=ABS(rst
ep):PLOT x,y+rstep,rtes
2020 PLOT x,y,14
2030 WEND:rstep=0:rtes=0:CALL &BB00
2040 CALL &BB18:RETURN
2050 REM *** type at cursor ***
2060 CALL &BB1B
2070 LOCATE #3,1,1:PRINT #3,"   Type
 at cursor"
2080 LOCATE #3,1,1:PRINT #3,"   Type
 at cursor"
2090 LOCATE #3,1,2:PRINT #3,"   (Ente
r) to end"
2100 FOR n=1 TO 500:NEXT:CALL &BB00
2110 WHILE t<1
2120 type$=INKEY$
2130 IF INKEY(18)=0 THEN PLOT x,y,0:
t=1:papr=0:GOTO 2200
2140 TAG:PLOT x,y,p
2150 IF type$="" GOTO 2190
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2160 IF ASC(type$)=127 THEN PLOT x,y,
0: x=x-(movx*4):MOVE x,y:PRINT " ":G
OTO 2190
2170 PRINT type$;
2180 x=x+(movx*8):MOVE x,y
2190 type$=""
2200 WEND
2210 t=0:LOCATE #3,1,1:PRINT #3,SPACE
$(40)
2220 TAGOFF
2230 RETURN
2240 REM ** fill routine **
2250 IF infil = 0 THEN RETURN
2260 WHILE lin < 1
2270 IF TEST (x,y) <> filc THEN lin =
1:GOTO 2330
2280 incl=incl+movx:telf=TEST (x-incl
,y)
2290 IF telf <> filc THEN MOVE x,y:DR
AW x-(incl-movx),y,p:lin =1
2300 IF x<2 THEN lin=1
2310 IF y<2 THEN lin =1
2320 IF y>348 THEN lin=1
2330 WEND
2340 lin=0
2350 WHILE lin < 1
2360 incr=incr+movx:terf=TEST (x+incr
,y)
2370 IF x>575 THEN lin=1
2380 IF y<2 THEN lin=1
2390 IF y>348 THEN lin=1
2400 IF terf <> filc THEN MOVE x,y:DR
AW x+(incr-movx),y,p:lin =1
2410 WEND
2420 lin=0:incl=0:incr=0:telf=17:terf
=17
2430 RETURN
2440 REM ** ink change **
2450 CALL &BB1B:IF INKEY(27)=128 THEN
 2450:CALL &BB1B
2455 LOCATE #3,1,1:INPUT #3,"Ink chan
ge Y/N"; y$:IF y$="Y" OR y$="y" THEN
GOTO 2460:ELSE LOCATE #3,1,1:PRINT #3
,SPACE$(40):RETURN
2460 LOCATE #3,1,1:INPUT #3," Pen t
o change";in$:IF in$="" THEN GOTO 24
60 2470 IF ASC(in$) < 65 OR ASC(in$)
>112 THEN LOCATE #3,1,1:PRINT #3,SPAC
E$(40):GOTO 2450
2470 IF ASC(in$) < 65 OR ASC(in$) >11
2 THEN LOCATE #3,1,1:PRINT #3,SPACE$(
40):GOTO 2450
2480 in$=UPPER$(in$):IF ASC(in$) > 80
 THEN GOTO 2450
2490 p=ASC (in$)-65
2500 IF p>15 THEN GOTO 2450
2510 CLS #3
2520 WHILE inchange <1
2530 LOCATE #3,1,1: PRINT #3,"Ink cha
nge (Shift)"
2540 PEN #3,p
2550 LOCATE #3,4,2: PRINT #3,"To set
(Enter)"
2560 LOCATE #3,1,3: PRINT #3,"     IN
K";p;",";i
2570 IF INKEY(21)=32 THEN i=(i+1) MOD
 27
2580 IF INKEY(18)=0 OR INKEY (6)=0 TH
EN inchange=1
2590 INK p,i
2600 WEND
2610 i=0:inchange=0
2620 CLS #3:PEN #3,4:LOCATE #3,1,3:PR
INT #3,"X";XPOS;"Y";YPOS
2630 RETURN
2640 REM ** save screen to memory **
2650 FOR n=1 TO 100:NEXT:CALL &BB00
2660 PAPER #2,15:CLS #2:CLS #3
2670 CALL 26203
2680 CLS #4
2690 FOR n=1 TO 2000:NEXT n
2700 CALL 26215
2710 FOR n=1 TO 2000:NEXT
2720 CALL &BB00
2730 LOCATE 2,23:INPUT"Save screen Y/
N";ipt$
2740 IF ipt$="Y" OR ipt$="y" THEN GOS
UB 2770
2750 MODE 1:y=y+2:LOCATE 12,12:INPUT
"End EASYDRAW Y/N";y$:IF y$="y" OR y$
="Y" THEN CALL &BC02:MODE 1:LOCATE 6,
2:PRINT "Easydraw program has finishe
d":END
2755 MODE 2:GOTO 220
2760 REM ** Save to tape **
2770 SPEED WRITE 1:LOCATE 1,23:INPUT
"Please print name  ";name$
2780 SAVE name$,B,&6675,&4000
2790 RETURN
2800 REM *** cursor jump distance ***
2810 CALL &BB1B:IF INKEY(45)=128 THEN
 GOTO 2810:CALL &BB1B
2820 CALL &BB00
2830 PEN #3,1:LOCATE #3,1,1:INPUT #3,
" Type in horizontal cursor jump";jum
p$:IF jump$=" " OR jump$="" THEN GOTO
 2830
2835 IF ASC(jump$) <48 THEN GOTO 2830
2840 IF VAL(jump$)<4 THEN LOCATE #3,1
,1:PRINT #3,SPACE$(40):GOTO 2830
2850 jump=VAL(jump$)
2860 LOCATE #3,1,1:INPUT #3,"Type in
the vertical cursor jump ";jumpy$:IF
jumpy$=" " OR jumpy$="" THEN 2860
2865 IF ASC(jumpy$) <48 THEN GOTO 286
0
2870 IF VAL(jumpy$)<2 THEN LOCATE #3,
1,1:PRINT #3,SPACE$(40):GOTO 2860
2880 jumpy= VAL(jumpy$)
2890 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
2900 LOCATE #3,1,3:PRINT #3,SPACE$(20
):LOCATE #3,1,3:PEN #3,4:PRINT #3,"X"
;XPOS;"Y";YPOS:IF beam=1 THEN PEN #3,
1:LOCATE #3,13,3:PRINT #3,"Beam on ";
:ELSE beam=0:PEN #3,1:LOCATE #3,13,3:
PRINT #3,"Beam off";:REM beam on/off
2910 RETURN
2920 REM draw from memory
2930 CALL &BB1B:IF INKEY(50)=128 THEN
 2930:CALL &BB1B
2940 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
2950 IF sh=0 THEN LOCATE #3,1,1:PRINT
 #3,"No shapes in memory":FOR n=1 TO
1000:NEXT:LOCATE #3,1,1:PRINT #3, SPA
CE$(40):RETURN
2960 LOCATE #3,1,1:INPUT #3,"Type sha
pe number";shape$:IF shape$=" " OR sh
ape$="" THEN GOTO 2960
2965 IF ASC(shape$) <48 THEN GOTO 296
0
2970 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
2980 IF VAL(shape$) >= sh THEN LOCATE
 #3,1,1:PRINT #3,"Not available 0 to"
;sh-1:FOR n=1 TO 1000:NEXT:GOTO 2940
```

```
2990 shape= VAL(shape$)
3000 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3010 LOCATE #3,1,1:INPUT #3,"At magni
fication";mag$:mag= VAL(mag$)
3020 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3030 IF mag < 0.1 THEN LOCATE #3,1,1:
PRINT #3,"A little to small  ":FOR n=
 1 TO 1000:NEXT:GOTO 3010
3040 c=0
3050 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3060 IF INSTR(character$(shape),"  - "
)> 1 THEN GOTO 3080
3070 character$(shape)=character$(sha
pe)+"  - "
3080 count=0
3090 WHILE count< (LEN(character$(sha
pe))-3)
3100 count=count+1
3110 space=INSTR(count,character$(sha
pe)," "):minus=INSTR(count,character$
(shape),"-")
3120 IF space < minus THEN count=spac
e
3130 IF space > minus THEN count=minu
s
3140 blank$(c)=STR$(count):c=c+1
3150 WEND
3160 REM draw from memory
3170 FOR count=2 TO c-3 STEP 2
3180 drax= VAL(MID$(character$(shape)
,VAL(blank$(count)),VAL(blank$(count+
1))-VAL(blank$(count))))
3190 dray= VAL(MID$(character$(shape)
,VAL(blank$(count+1)),VAL(blank$(coun
t+2))-VAL(blank$(count+1))))
3200 DRAWR mag*drax,mag*dray,p
3210 NEXT count
3220 count=0:RETURN
3230 REM save shapes to tape
3240 CALL &BB1B: IF INKEY(60)=128 THE
N GOTO 3240:CALL &BB1B
3250 LOCATE #3,1,1:INPUT #3, "Save sh
apes Y/N";satap$:LOCATE #3,1,1:PRINT
#3,SPACE$(40):IF satap$="Y" OR satap$
="y" THEN GOTO 3260:ELSE GOTO 3340
3260 LOCATE #3,1,1:INPUT #3, "File na
me";file$
3270 IF LEN(file$) > 8 THEN LOCATE #3
,1,1:PRINT #3,"Below eight letters":F
OR n=1 TO 300:LOCATE #3,1,1:PRINT #3,
SPACE$(40):GOTO 3260
3280 OPENOUT file$
3285 PRINT #9,sh
3290 FOR count=0 TO sh
3300 PRINT #9,character$(count)
3310 NEXT count
3320 CLOSEOUT
3330 CLS #3:PEN #3,4:LOCATE #3,1,3:PR
INT #3,"X";XPOS;"Y";YPOS;
3340 RETURN
3350 REM input file for shapes
3360 CALL &BB1B:IF INKEY(35)=128 THEN
 GOTO 3370:CALL &BB1B
3370 LOCATE #3,1,1:INPUT #3, "Load sh
apes Y/N";lotap$:LOCATE #3,1,1:PRINT
#3,SPACE$(40):IF lotap$="Y" OR lotap$
="y" THEN GOTO 3380:ELSE GOTO 3510
3380 LOCATE #3,1,1:INPUT #3, "File na
me";file$
3390 IF LEN(file$) > 8 THEN LOCATE #3
,1,1:PRINT #3,"Below eight letters":F
OR n=1 TO 300:LOCATE #3,1,1:PRINT #3,
SPACE$(40):GOTO 3380
3400 OPENIN file$
3405 INPUT #9,sh
3410 FOR count =0 TO sh
3420 INPUT #9,character$(count)
3430 NEXT count
3470 FOR count=0 TO sh
3480 IF LEFT$(character$(count),1)="-
" THEN GOTO 3490:ELSE character$(coun
t)=" "+character$(count)
3490 NEXT count:count=0
3500 CLS #3:PEN #3,4:LOCATE #3,1,3:PR
INT #3,"X";XPOS;"Y";YPOS;
3510 RETURN
3520 REM load picture to memory
3530 CALL &BB1B:IF INKEY(36)=128 THEN
 GOTO 3530: CALL &BB1B
3540 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3550 LOCATE #3,1,1:INPUT #3,"Load in
picture  Y/N ";pict$
3560 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3570 IF pict$="Y" OR pict$="y" THEN G
OTO 3580:ELSE RETURN
3580 LOCATE #3,1,1:INPUT #3,"Print pi
cture name ";picture$
3590 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3600 LOAD picture$,&6675
3610 CLS #3
3620 RETURN
3630 REM go to option pages
3640 CALL &BB1B:IF INKEY(52)=128 THEN
 GOTO 3640:CALL &BB1B
3650 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3660 LOCATE #3,1,1:INPUT #3,"Go to op
tions Y/N";yes$:IF yes$="Y" OR yes$="
y" THEN MODE 2:y=y+2: GOTO 220: REM g
o to option pages
3670 LOCATE #3,1,1:PRINT #3,SPACE$(40
)
3680 RETURN
3690 REM ** save picture to memory ma
chine code **
3700 FOR n=26203 TO 26226
3710 READ x
3720 POKE n,x
3730 NEXT n
3740 RETURN
3750 DATA 1,0,64,33,0,192,17,117,102,
237,176,201
3760 DATA 1,0,64,33,117,102,17,0,192,
237,176,201
```

Listing II

```
10 MODE 0:INK 0,13:INK 15,1
20 LOAD "!filename",&C000
```

Listing III

```
10  MEMORY &665A :REM save memory for
 picture and disc drive
20  GOSUB 3700: REM save picture to m
emory machine code
30 LOAD "filename",&6675 :REM load pi
ture into memory
40 MODE 0:INK 14,9:INK 0,13:INK 15,1:
REM set up screen mode and colours
50 CALL 26215 : REM picture to screen
60 FOR n= 1 TO 2000:NEXT:REM wait
70 DRAW 640,400,3 :FOR n= 1 TO 1000:N
EXT: REM draw line across picture
80 CALL 26203 : REM save new picture
90 CLS:FOR n= 1 TO 1000:NEXT
100 CALL 26215 :REM new updated pictu
re
110 END
3690 REM ** save picture to memory ma
chine code **
3700 FOR n=26203 TO 26226
3710 READ x
3720 POKE n,x
3730 NEXT n
3740 RETURN
3750 DATA 1,0,64,33,0,192,17,117,102,
237,176,201
3760 DATA 1,0,64,33,117,102,17,0,192,
237,176,201
```