Fudge It!

by Don Fudge

Fontastic!

In this column I'll describe how to use SUPERFONT, a hi-res character generator that produces characters anywhere from 15-by-15 to 180-by-180 in size, of any color, and in seven or more styles. Included with SUPERFONT (Listing 1) are three other files: CHAR (Listing 2), SCROLL!! (Listing 3) and RETRIEVE (Listing 4).

The CHAR file produces a totally "scale-able" and rotatable vector

Listing 1. SUPERFONT.

```
0  HIMEM: 36095
1  GOTO 10
2  FOR OW = 1 TO 5:PP =  PEEK ( - 16336): NEXT :CR = 0: GOTO 46
3  DRAW 52 AT X,Y:A = 52: GOTO 45
10  ONERR  GOTO 63995
11  GOSUB 12: GOTO 25
12  POKE 768,160: POKE 769,0: POKE 770,76: POKE 771,44: POKE 772,254: RETURN

25  IF GT46 = 1 THEN 36
30  PRINT  CHR$ (4);"BLOADCHAR"
35  POKE 232,0: POKE 233,141
36  PRINT  CHR$ (4);"BLOADSCROLL!!"
40  HGR : POKE  - 16302,0: HCOLOR= 3: ROT= 64: SCALE= 1:S = 1
41  IF GT46 = 0 THEN BE = 1: GOSUB 13000:BE = 0
42 X =  - 19:Y = 20:OY = 20:OX = 1:HH = 3:CR = 1:GT46 = 0
43  HOME : IF SS = 0 THEN  DIM TF$(26): FOR WW = 1 TO 25:TF$(WW) =  CHR$ (
     64 + WW): NEXT :SS = 1
45  GOTO 10000
46 ST = S: SCALE= 1: XDRAW 51 AT X,Y:S = ST: SCALE= S: IF CR = 0 THEN ST =
     S: SCALE= 1: XDRAW 51 AT OX,OY:S = ST: SCALE= S
47 PK =  PEEK ( - 16384): IF PK > 127 THEN  POKE  - 16368,0: GOTO 49
48  GOTO 47
49  IF EE = 1 AND PK <  > 153 THEN I = I: IF PK <  > 144 AND PK <  > 155 THEN
     X = 1:Y = 120 + (S * 20):EE = 0
50 OX = X:OY = Y: SCALE= S: ROT= 64:CR = 0
59 K = PK - 154: IF K < 0 THEN KK =  ABS (K):K = 0
60  ON K GOTO 91,2,2,2,2,94,97,230,2,240,2,2,3,250,260,2,270,280,290,300,3
     10,320,330,340,350,360,370,380,390,400,410,420,430,2,440,2,450,2,460,
     470,480,490,500,510,520,530,540,550,560,570,580,590,600,610,620,630,6
     40,650,660,670,680,690,700,710
61  IF K = 0 THEN CR = 1: GOTO 70
63  IF F = 0 AND PK = 222 THEN PK = 0: GOSUB 11000: GOTO 46
64  IF PK = 221 AND F = 0 THEN F = 1:PK = 0: GOTO 46
65  IF F > 0 AND PK > 220 THEN F = 0:PK = 0: GOTO 46
70  ON KK GOTO 12000,72,2,2,86,74,76,88,2,24000,13000,2,78,2,2,2,2,80,2,82
     ,2,84
71  GOTO 2
72 ST = S: SCALE= 1: XDRAW 51 AT OX,OY: CALL 62450: CLEAR :S = 1: SCALE= S
    :CR = 1:HH = 3: HCOLOR= HH: ROT= 64:X = 1:Y = 20
73  GOTO 46
74 Y = Y - (20 * S): IF Y < 20 THEN Y = 20
75  GOTO 2000
76  GOTO 3000
78 X = 1:Y = Y + (20 * S): IF Y > 191 THEN Y = S * 20: CALL 62450:G$ =  CHR$
     (7): PRINT G$: GOTO 46
79 G$ =  CHR$ (7): PRINT G$: GOTO 2000
80 X = X - (20 * S): IF X < 1 THEN X = 281 - (20 * S):Y = Y - (20 * S): IF
     Y < (20 * S) THEN  FOR OW = 1 TO 20:PP =  PEEK ( - 16336): NEXT :G$ =
      CHR$ (7): PRINT G$:Y = Y + (20 * S):X = 1
81  GOTO 2000
82  GOSUB 4000: GOTO 2000
84 Y = Y + (20 * S): IF Y > 180 THEN Y = 180
85  GOTO 2000
86 X = X + (20 * S): IF X > 261 THEN X = 1:Y = Y + (20 * S): IF Y > 190 THEN
     EF = 1:CR = 0: GOSUB 12000: GOTO 46
87 CR = 0: GOTO 46
88  GOTO 5000
91  GOSUB 900: GOTO 46
94  GOTO 86
97  DRAW 29 AT X,Y:A = 29: GOTO 45
230  DRAW 35 AT X,Y:A = 35: GOTO 45
240  DRAW 38 AT X,Y:A = 38: GOTO 45
```

Listing 1 continued.

Listing 2. CHAR.

```
*8D00.95D0

8D00- 34 00 6E 00 A5 00 E5 00
8D08- 13 01 46 01 77 01 9C 01
8D10- CF 01 F8 01 21 02 43 02
8D18- 74 02 91 02 C1 02 F2 02
8D20- 25 03 55 03 8D 03 C6 03
8D28- 00 04 1F 04 49 04 71 04
8D30- A1 04 D2 04 F5 04 26 05
8D38- 2D 05 35 05 4B 05 76 05
8D40- 87 05 A5 05 C4 05 E1 05
8D48- F7 05 06 06 14 06 5D 06
8D50- 79 06 94 06 BB 06 F2 06
8D58- 2B 07 50 07 88 07 C4 07
8D60- E8 07 2B 08 6A 08 B6 08
8D68- B8 08 FF FF FF FF 24 24
8D70- 24 24 24 24 25 25 2D 2D
8D78- 2D 2D 2D 2E 2E 36 36 36
8D80- 36 36 36 3F 24 24 24 3F
8D88- 3F 3F 3F 3F 36 36 36 3F
8D90- 08 40 41 C0 18 20 24 25
8D98- 2D 2D 2D 2D 2E 36 3E 3F
8DA0- 3F 3F 3F 07 00 24 24 24
8DA8- 24 24 24 24 2D 2D 2D 2D
8DB0- 2D 2D 2E 2E 36 3E 3E 36
8DB8- 35 35 36 37 37 3F 3F 3F
8DC0- 3F 3F 3F 41 28 2D 2D 2D
8DC8- 2D 2C 3C 3C 3C 3F 3F 3F
8DD0- 37 36 46 40 C0 28 2D 2D
8DD8- 2D 2C 2C 3C 3C 3F 3F 3F
8DE0- 3F 36 36 05 00 09 2D 2D
8DE8- 2D 2D 2D 2C 2C 24 3F 3E
8DF0- 3E 3F 3F 3F 27 27 24 24
8DF8- 24 2C 2C 2D 2D 2D 35 35
8E00- 2D 24 27 27 3F 3F 3F 3F
8E08- 3F 3E 3E 36 36 36 36 36
8E10- 35 35 00 2D 2D 2D 2D 2D
8E18- 2D 2C 2C 24 24 24 24 24
8E20- 27 27 3F 3F 3F 3F 3F 3F
8E28- 36 36 36 36 36 36 36 40
8E30- 01 2D 2D 2D 2D 25 25 24
8E38- 24 24 3C 3C 3F 3F 3F 3F
8E40- 36 36 36 36 36 00 2D 2D
8E48- 2D 2D 2D 2D 2D 24 3F 3F
8E50- 3F 3F 3F 3F 24 24 2D 2D
8E58- 2D 2D 24 3F 3F 3F 3F 24
8E60- 24 2D 2D 2D 2D 2D 2D 24
8E68- 3F 3F 3F 3F 3F 3F 3F 36
8E70- 36 36 36 36 36 36 00 2D
8E78- 24 24 24 2D 2D 2D 2D 24
8E80- 3F 3F 3F 3F 24 24 2D 2D
8E88- 2D 2D 2D 2D 24 3F 3F 3F
8E90- 3F 3F 3F 3F 36 36 36 36
8E98- 36 36 36 00 09 2D 2D 2D
8EA0- 2D 2D 2C 2C 24 24 3F 3F
8EA8- 37 2E 2D 3E 3E 3F 3F 3F
```

Listing 2 continued.

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shape table for all numbers and letters, and many symbols as well. These shapes, 52 in all, can be DRAWn, XRAWn, SCALEd, ROTated or HCOLORed in your own programs.

Vector shapes often do not scale up (increase in size) cleanly. The reason is that most people use at least a few move-only commands (without plotting) in their shapes, or, with programs like my Super Shape Draw and Animate, they use diagonal plot-

Listing 1 continued.

```
250  DRAW 39 AT X,Y:A = 39: GOTO 45
260  DRAW 40 AT X,Y:A = 40: GOTO 45
270  DRAW 33 AT X,Y:A = 33: GOTO 45
280  DRAW 28 AT X,Y:A = 28: GOTO 45
290  DRAW 31 AT X,Y:A = 31: GOTO 45
300  DRAW 27 AT X,Y:A = 27: GOTO 45
310  DRAW 34 AT X,Y:A = 34:CR = 1: GOTO 45
320  DRAW 50 AT X,Y:A = 50:CR = 1: GOTO 45
330  DRAW 41 AT X,Y:A = 41:CR = 1: GOTO 45
340  DRAW 42 AT X,Y:A = 42:CR = 1: GOTO 45
350  DRAW 43 AT X,Y:A = 43: GOTO 45
360  DRAW 44 AT X,Y:A = 44: GOTO 45
370  DRAW 45 AT X,Y:A = 45: GOTO 45
380  DRAW 46 AT X,Y:A = 46: GOTO 45
390  DRAW 47 AT X,Y:A = 47: GOTO 45
400  DRAW 48 AT X,Y:A = 48: GOTO 45
410  DRAW 49 AT X,Y:A = 49: GOTO 45
420  DRAW 37 AT X,Y:A = 37: GOTO 45
430  DRAW 36 AT X,Y:A = 36: GOTO 45
440  DRAW 32 AT X,Y:A = 32: GOTO 45
450  DRAW 30 AT X,Y:A = 30: GOTO 45
460  DRAW 1 AT X,Y:A = 1:CR = 1: GOTO 45
470  DRAW 2 AT X,Y:A = 2:CR = 1: GOTO 45
480  DRAW 3 AT X,Y:A = 3: GOTO 45
490  DRAW 4 AT X,Y:A = 4:CR = 1: GOTO 45
500  DRAW 5 AT X,Y:A = 5:CR = 1: GOTO 45
510  DRAW 6 AT X,Y:A = 6:CR = 1: GOTO 45
520  DRAW 7 AT X,Y:A = 7: GOTO 45
530  DRAW 8 AT X,Y:A = 8:CR = 1: GOTO 45
540  DRAW 9 AT X,Y:A = 9:CR = 1: GOTO 45
550  DRAW 10 AT X,Y:A = 10: GOTO 45
560  DRAW 11 AT X,Y:A = 11:CR = 1: GOTO 45
570  DRAW 12 AT X,Y:A = 12:CR = 1: GOTO 45
580  DRAW 13 AT X,Y:A = 13:CR = 1: GOTO 45
590  DRAW 14 AT X,Y:A = 14:CR = 1: GOTO 45
600  DRAW 15 AT X,Y:A = 15: GOTO 45
610  DRAW 16 AT X,Y:A = 16:CR = 1: GOTO 45
620  DRAW 17 AT X,Y:A = 17: GOTO 45
630  DRAW 18 AT X,Y:A = 18:CR = 1: GOTO 45
640  DRAW 19 AT X,Y:A = 19: GOTO 45
650  DRAW 20 AT X,Y:A = 20: GOTO 45
660  DRAW 21 AT X,Y:A = 21: GOTO 45
670  DRAW 22 AT X,Y:A = 22: GOTO 45
680  DRAW 23 AT X,Y:A = 23:CR = 1: GOTO 45
690  DRAW 24 AT X,Y:A = 24:CR = 1: GOTO 45
700  DRAW 25 AT X,Y:A = 25: GOTO 45
710  DRAW 26 AT X,Y:A = 26:CR = 1: GOTO 45
800  IF F > 0 THEN  GOSUB 1000
805 X = X + (20 * S): IF X > 281 - (20 * S) THEN X = 1:Y = Y + (20 * S): IF
    Y > 190 THEN Y = Y - (20 * S):EE = 1:EF = 1: GOTO 12000
810  GOTO 46
900  POKE  - 16303,0: POKE  - 16298,0
901  HOME : VTAB 1: PRINT "CHOOSE A COLOR OR SCALE:": PRINT : PRINT "(FOR
    SCALE, CHOOSE 1-9 AND MAKE SURE    YOU'RE POSITIONED CORRECTLY)": PRINT

902  PRINT : PRINT "'B' = BLACK 1                              'G' = GREEN
                        'V' = VIOLET                                    'W'
     = WHITE 1                          'L' = BLACK 2
          'O' = ORANGE"
903  PRINT "'U' = BLUE                                    'H' = WHITE 2"
904 PE =  PEEK ( - 16384): IF PE > 127 THEN  POKE  - 16368,0: GOTO 906
905  GOTO 904
906  IF PE = 214 THEN  HCOLOR= 2:HH = 2: GOTO 990
910  IF PE = 194 THEN  HCOLOR= 0:HH = 0: GOTO 990
915  IF PE > 176 AND PE < 186 THEN S = PE - 176: SCALE= S: GOTO 990
920  IF PE = 199 THEN  HCOLOR= 1:HH = 1: GOTO 990
930  IF PE = 215 THEN  HCOLOR= 3:HH = 3: GOTO 990
940  IF PE = 204 THEN  HCOLOR= 4:HH = 4: GOTO 990
950  IF PE = 207 THEN  HCOLOR= 5:HH = 5: GOTO 990
960  IF PE = 213 THEN  HCOLOR= 6:HH = 6: GOTO 990
970  IF PE = 200 THEN  HCOLOR= 7:HH = 7: GOTO 990
980  FOR QW = 1 TO 20:PP =  PEEK ( - 16336): NEXT : FOR QW = 1 TO 20:PP =
     PEEK ( - 16336): NEXT : FOR QW = 1 TO 20:PP =  PEEK ( - 16336): NEXT
    : GOTO 900
990  POKE  - 16304,0: POKE  - 16297,0: HOME :XC =  FRE (0): RETURN
1000  ON F GOTO 1001,1003,1004,1005,1010,1015,1020
1001 TX = X:TY = Y:X = 0:Y = 0: FOR X = TX TO TX + (S + (S * (S - 1))): FOR
    Y = TY TO TY - (S + (S * (S - 1))) STEP  - 1: DRAW A AT X,Y: NEXT : NEXT
    :X = TX:Y = TY: RETURN
1003  DRAW A AT X,Y: DRAW A AT X + 2,Y - 2: RETURN
```

Listing 1 continued.

Listing 2 continued.

```
8EB0- 27 27 24 24 24 2C 2C 2D
8EB8- 2D 2D 35 35 2D 24 27 27
8EC0- 3F 3F 3F 3F 3F 3E 3E 36
8EC8- 36 36 36 36 35 35 00 2D
8ED0- 24 24 24 2D 2D 2D 2D 2D
8ED8- 36 36 36 2D 24 24 24 24
8EE0- 24 24 24 3F 36 36 36 3F
8EE8- 3F 3F 3F 3F 24 24 24 3F
8EF0- 36 36 36 36 36 36 36 00
8EF8- 2D 2D 2D 2D 2D 2D 2D 24
8F00- 3F 3F 3F 24 24 24 24 24
8F08- 2D 2D 2D 24 3F 3F 3F 3F
8F10- 3F 3F 3F 36 2D 2D 2D 36
8F18- 36 36 36 36 3F 3F 3F 36
8F20- 00 09 2D 2D 2D 2D 2D 2C
8F28- 2C 24 24 24 24 24 24 3F
8F30- 36 36 36 36 36 3E 3E 3F
8F38- 3F 3F 27 27 24 3F 36 36
8F40- 35 35 00 2D 24 24 2C 2E
8F48- 35 2D 2E 35 2D 2E 2D 24
8F50- 3F 3C 27 3F 3C 27 3F 24
8F58- 2D 2C 25 2D 2C 25 2D 24
8F60- 3F 37 3F 3E 37 3F 3E 37
8F68- 27 24 24 3F 36 36 36 36
8F70- 36 36 36 00 2D 2D 2D 2D
8F78- 2D 2D 2D 24 3F 3F 3F 3F
8F80- 3F 3F 24 24 24 24 24 24
8F88- 3F 36 36 36 36 36 36 36
8F90- 00 2D 24 24 24 24 24 35
8F98- 35 35 35 2D 2C 2C 2C 2C
8FA0- 36 36 36 36 36 2D 24 24
8FA8- 24 24 24 24 24 3F 3E 3E
8FB0- 3E 3E 3E 27 27 27 27 27
8FB8- 3F 36 36 36 36 36 36 36
8FC0- 00 2D 24 24 24 24 24 35
8FC8- 35 35 35 35 35 35 35 35
8FD0- 35 2D 24 24 24 24 24 24
8FD8- 24 3F 36 36 36 36 36 27
8FE0- 27 27 27 27 27 27 27 27
8FE8- 27 3F 36 36 36 36 36 36
8FF0- 36 00 09 2D 2D 2D 2D 2D
8FF8- 2C 2C 24 24 24 24 24 27
9000- 27 3F 3F 3F 3F 3F 3E 3E
9008- 36 36 36 36 36 35 35 40
9010- 2D 2D 2D 2D 2C 24 24 24
9018- 24 27 3F 3F 3F 3F 3E 36
9020- 36 36 36 35 00 2D 24 24
9028- 24 2C 2D 2D 2D 2D 25 25
9030- 25 24 27 27 3F 3F 3F 3F
9038- 3F 3F 36 36 36 36 36 36
9040- 36 08 48 40 C0 C0 28 2D
9048- 2D 2D 2D 2C 3C 3C 3F 3F
9050- 3F 3F 36 06 00 09 2D 2D
9058- 2D 2D 2C 2E 2D 3C 2C 24
9060- 24 24 24 24 27 27 3F 3F
9068- 3F 3F 3F 3E 3E 36 36 36
9070- 36 36 35 35 40 2D 2D 2D
9078- 3C 24 2D 2E 2E 24 24 24
9080- 24 27 3F 3F 3F 3F 3E 36
9088- 36 36 36 35 00 2D 24 24
9090- 24 2C 2D 2D 2D 35 36 36
9098- 36 2D 24 24 24 24 25 25
90A0- 24 07 3C 3C 3F 3F 3F 3F
90A8- 3F 37 36 36 36 36 36 36
90B0- 0E 40 41 C0 C0 18 08 2D
90B8- 2D 2D 2D 05 2C 3C 3C 3F
90C0- 3F 3F 3F 36 06 00 09 2D
90C8- 2D 2D 2D 2D 2C 2C 24 24
90D0- 27 27 3F 3F 3F 3F 27 27
90D8- 2C 2C 2D 2D 2D 35 35 2D
90E0- 24 27 27 3F 3F 3F 3F 3F
90E8- 3E 3E 36 36 35 35 2D 2D
90F0- 2D 2D 35 35 3E 3E 3F 3F
90F8- 3F 27 27 3F 36 35 35 00
9100- 49 49 2D 24 24 24 24 24
9108- 24 2D 2D 2D 24 3F 3F 3F
9110- 3F 3F 3F 3F 36 2D 2D 2D
9118- 36 36 36 36 36 36 00 09
9120- 2D 2D 2D 2D 2D 2C 2C 24
```

Listing 2 continued.

ting. Now, diagonal plotting is a great asset to a drawing program, as are move-only moves, but both are no-no's if you're going to be scaling up. So the CHAR characters were created (by Mary Carol Smith, president of Avant-Garde) with the plotter remaining on. Use CALL – 151 before typing in CHAR and A$8D00, L$8D0 as the BSAVE information.

The SCROLL!! routine moves everything on the hi-res screen up 64 hires lines once the screen fills with characters. Thus you can type forever without running out of space. Once again, use CALL – 151 before typing SCROLL!! in and A2048, L176 to BSAVE.

RETRIEVE allows you to recreate SUPERFONT compositions that have been saved as text files.

Before I discuss the SUPERFONT listing, I must mention one vital piece of information about making SUPERFONT and/or RETRIEVE work: *Before you can use either program you must do the following POKEs:*

```
POKE 104,96: POKE 24576,0
```

It doesn't matter if the POKEs are in the Hello program that runs when the disk boots (after which RUN SU

Listing 1 continued.

```
1004 Z = 0: FOR Q = 1 TO 5: DRAW A AT X + Z,Y - Z:Z = Z + 1: NEXT : RETURN
1005  DRAW A AT X,Y: DRAW A AT X + 2,Y - 2: DRAW A AT X + 4,Y - 4: RETURN
1010 TX = X:TY = Y:X = 0:Y = 0: FOR X = TX TO TX + (S + 1): FOR Y = TY TO
     TY - (S + 1) STEP  - 1: DRAW A AT X,Y: NEXT : NEXT :X = TX:Y = TY: RETURN
1015  DRAW A AT X,Y: DRAW A AT X + 1,Y: DRAW A AT X + 2,Y: RETURN
1020  DRAW A AT X,Y: DRAW A AT X + 1,Y - 1: DRAW A AT X + 2,Y - 2: RETURN
1500  POKE 103,1: POKE 104,8: POKE 2048,0
1510  HIMEM: 38400
1520  PRINT  CHR$ (4);"RUNMAILING LABEL & FILING SYSTEM"
2000 ST = S: SCALE= 1: XDRAW 51 AT OX,OY:S = ST: SCALE= S
2010  GOTO 46
3000  CLEAR :S = 1: SCALE= S:HH = 3: HCOLOR= HH: ROT= 64:X = 1:Y = 20:CR =
     1: DIM A(127),B(127),SC(127),CL(127),SH(127),F(127):SV = 1: CALL 6245
     0: GOTO 46
4000 SV = 0: GOSUB 10016: RETURN
5000 D$ =  CHR$ (4)
5010  PRINT D$"RUNRETRIEVE"
9000  HOME : TEXT : VTAB 1: PRINT "NOW TYPE THE CTRL CHARACTERS (OR WHAT-
     EVER) THAT DUMP THE HI-RES SCREEN ONTO  YOUR PRINTER. IF YOUR PRINTE
     R DOESN'T DOTHIS THEN DON'T HIT CTRL P IN THIS PROG.": PRINT
9010  PRINT "MAKE SURE YOU HIT RETURN ONCE YOU'RE    DONE TYPING ALL THE C
     TRL CHARACTERS:": PRINT :A9 = 0
9015  PRINT "IF YOU'VE NO PRINTER WITH HI-RES CAPACI-TY HIT RETURN NOW.": PRINT
9020 A9 = A9 + 1: GET CR$(A9): IF  ASC (CR$(A9)) <  > 13 THEN 9020
9030  PRINT  CHR$ (13): POKE  - 16304,0: POKE  - 16297,0: RETURN
10000  IF SV = 1 AND (PK < 219 AND PK > 160) THEN N = N + 1: GOTO 10010
10001  GOTO 800
10010 A(N) = X:B(N) = Y:SC(N) = S:CL(N) = HH:SH(N) = A:F(N) = F
10015  IF N = 126 THEN N = 0:NB = 126: GOTO 10025
10016  IF SV = 0 THEN NB = N: POKE  - 16303,0: POKE  - 16298,0: GOTO 10025
10020  GOTO 800
10025  POKE  - 16303,0: POKE  - 16298,0
10030  HOME : VTAB 1: INPUT "WHICH DO YOU WANT?(A-Y):";AN$
10031  IF  ASC (AN$) < 65 OR  ASC (AN$) > 89 THEN 10030
10032 NN =  ASC (AN$) - 64
10034  IF SS = 0 THEN  DIM TF$(26): FOR WW = 1 TO 25:TF$(WW) =  CHR$ (64 +
     WW): NEXT :SS = 1
10038 D$ =  CHR$ (4): CALL 1002: FLASH : HOME : TEXT : VTAB 1: PRINT "PLEA
     SE SWITCH NOW TO YOUR OWN INITIAL-  IZED DISK TO STORE YOUR CREATION
     ON": NORMAL : GOSUB 63000
10039  IF NN < 1 OR NN > 25 THEN 800
10040  PRINT D$"OPEN";TF$(NN)
10043  PRINT D$"DELETE";TF$(NN)
10046  PRINT D$"OPEN";TF$(NN)
10050  PRINT D$"WRITE";TF$(NN)
10055  PRINT NB
10060  FOR QW = 1 TO NB
10070  PRINT A(QW): PRINT B(QW): PRINT SC(QW): PRINT CL(QW): PRINT SH(QW):
      PRINT F(QW): NEXT
10080  PRINT D$"CLOSE"
10082  HOME
10083  VTAB 10: FLASH : PRINT "PLEASE SWITCH BACK TO THE PROGRAM DISK  NOW
     ": NORMAL : GOSUB 63000
10085  POKE  - 16304,0: POKE  - 16297,0
10088  FLASH : VTAB 1: PRINT "PLEASE SWITCH BACK TO THE PROGRAM DISK  NOW"
     : NORMAL : GOSUB 63000
10090  GOTO 805
11000  HOME : POKE  - 16303,0: POKE  - 16298,0
11010  PRINT "WHICH STYLE DO YOU WANT?": PRINT
11020  PRINT "(1-7):"
```

Listing 1 continued.

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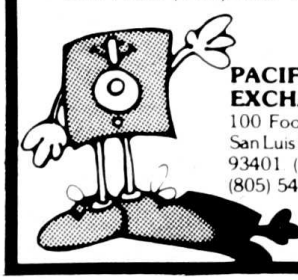

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Listing 1 continued.

```
11030 F =  PEEK ( - 16384): IF F > 176 AND F < 184 THEN F = F - 176: POKE
    - 16368,0: GOTO 11100
11040  GOTO 11030
11100  POKE  - 16304,0: POKE  - 16297,0
11200  RETURN
12000 ST = S: SCALE= 1: XDRAW 51 AT OX,OY:S = ST: SCALE= S
12002  GOSUB 12: CALL 2048
12072 EE = 0
12073  IF EF = 1 AND CR <  > 1 THEN EF = 0:ST = S: SCALE= 1: XDRAW 51 AT O
    X,OY:S = ST: SCALE= S:X = 1: GOSUB 39000: GOTO 46
12074 X = 1: GOSUB 39000: IF Y > 180 THEN Y = 180
12075  GOTO 46
13000  POKE  - 16303,0: POKE  - 16298,0
13010  HOME : VTAB 1: PRINT "HERE ARE THE COMMANDS:": PRINT
13020  PRINT "CTRL O MOVES YOU DOWN                    CTRL T MOVES YOU UP
    (TOWARDS TOP)       CTRL X ERASES & RESTARTS YOU          CTRL Y SC
    ROLLS SCREEN BY 3 LINES       CTRL S STARTS SAVING YOUR CREATION  "
13030  PRINT "(AUTOMATIC SAVE IF YOU FILL SCREEN)     CTRL F SAVES YOUR CR
    EATION (FINISHED)   CTRL R RETRIEVES A SAVED CREATION": FLASH : PRINT
    "CTRL O LETS YOU SEE THE COMMAND OPTIONS": NORMAL
13040  PRINT "(--) AND (-- AND 'SPACE' WORK AS ON A     TYPEWRITER, & SO D
    OES 'RETURN' ---      WHICH IS CARRIAGE RETURN)"
13050  PRINT "ESC LETS YOU CHANGE COLOR OR SCALE      REPT LETS YOU REPEAT
                    SHIFT M GIVES STYLE #1 LETTERS          SHIFT N L
    ETS YOU CHOOSE LETTER STYLE"
13051  PRINT "2ND HIT OF SHIFT M OR N MEANS BACK TO     REGULAR LETTERS AG
    AIN"
13052  PRINT "CTRL P MEANS PRINT OUT HI-RES SCREEN ON    A PRINTER"
13055  PRINT
13060 PW =  PEEK ( - 16384): IF PW > 127 AND PW <  > 155 THEN  POKE  - 163
    68,0: GOTO 13999
13065  IF PW = 155 THEN 13075
13070  GOTO 13060
13075  POKE 103,1: POKE 104,8: POKE 2048,0
13080  HIMEM: 38400
13082  CALL 1002
13085  PRINT  CHR$ (4);"RUNHELLO"
13999  POKE  - 16304,0: POKE  - 16297,0: HOME : IF BE = 1 THEN  RETURN
14000  GOTO 2000
24000 D$ =  CHR$ (4)
24002  POKE  - 16303,0: POKE  - 16298,0
24005  GOSUB 9000: IF  ASC (CR$(1)) = 13 THEN 2000
24010  PRINT D$"PR#1"
24020  FOR W9 = 1 TO A9: PRINT CR$(W9);: NEXT
24025  PRINT D$"PR#0"
24030  GOTO 2000
39000  IF Y < (S * 20) THEN Y = S * 20: RETURN
39002  ON S GOTO 39010,39020
39005  RETURN
39010 Y = OY - 40: GOTO 39050
39020 Y = OY - 20
39050  IF Y < (S * 20) THEN Y = S * 20
39060  RETURN
63000  PRINT : PRINT "(HIT ANY KEY TO CONTINUE):": PRINT
63010 PP =  PEEK ( - 16384): IF PP > 127 THEN  POKE  - 16368,0: RETURN
63020  GOTO 63010
63995 OP =  PEEK (222): POKE 216,0
63999 G$ =  CHR$ (7): PRINT G$: PRINT G$: GOTO 2000
```

PERFONT occurs immediately), or if you do them in immediate mode before running SUPERFONT, also in immediate mode. But if you try to install the POKEs in SUPERFONT, *it won't work.*

SUPERFONT

In a nutshell, SUPERFONT displays typed-in text on the screen in a large hi-res format. Many sizes, styles and colors are possible. You can save your compositions and, if RETRIEVE is on the disk, you can summon them back as well. The instructions for using SUPERFONT are right in the program and appear as soon as it starts running. Any time you forget the commands, use control-O to view them again.

Control-P directs your printer to turn out hi-res pictures. Here's how: If you have an Axiom or Silentype, or any other printer that requires only a couple of control characters to produce hi-res pictures, then, after typing control-P, enter the appropriate printer-activating codes. If non-inputtable characters are needed, stick them into line 24020 of SUPERFONT. When using a slot other than

Listing 2 continued.

```
9128- 24 24 24 24 24 3F 36 36
9130- 36 36 36 3E 3E 3F 3F 3F
9138- 27 27 24 24 24 24 24 3F
9140- 36 36 36 36 36 36 35 35
9148- 00 49 49 2D 24 25 2C 24
9150- 25 2C 24 25 2C 24 3F 3E
9158- 36 37 3E 36 37 3E 27 3C
9160- 24 27 3C 24 27 3F 36 35
9168- 2E 36 35 2E 36 35 2E 36
9170- 00 2D 2C 2C 2C 2C 2C 35
9178- 35 35 35 35 2D 24 24 24
9180- 24 24 24 24 3F 36 36 36
9188- 36 36 27 27 27 27 3F 3E
9190- 3E 3E 3E 24 24 24 24 24
9198- 3F 36 36 36 36 36 36 36
91A0- 00 2D 2C 2C 2C 2C 2C 35
91A8- 35 35 35 35 2D 24 27 27
91B0- 27 27 27 2C 2C 2C 2C 2C
91B8- 24 3F 3E 3E 3E 3E 3E 27
91C0- 27 27 27 27 3F 36 35 35
91C8- 35 35 35 3E 3E 3E 3E 3E
91D0- 36 00 49 49 2D 24 24 24
91D8- 24 25 25 25 25 25 25 3F
91E0- 37 37 37 37 3F 3C 3C 3C
91E8- 3C 3F 2E 2E 2E 2E 2E 2E
91F0- 36 36 36 36 00 24 25 25
91F8- 25 25 25 25 25 25 25 25
9200- 3F 3F 3F 3F 3F 24 2D 2D
9208- 2D 2D 2D 2D 2D 36 37 37
9210- 37 37 37 37 37 37 37 37
9218- 2D 2D 2D 2D 2D 36 3F 3F
9220- 3F 3F 3F 3F 3F 00 49 49
9228- 2D 24 3F 36 00 49 49 2E
9230- 2C 24 3F 36 00 49 49 2D
9238- 24 3F F6 40 18 08 2D 24
9240- 24 24 24 24 3F 36 36 36
9248- 36 36 00 49 49 2D 24 3F
9250- F6 40 18 08 2D 24 2C 2D
9258- 25 25 25 24 3C 3C 3F 3F
9260- 3F 3F 3F 3E 3E 36 2E 25
9268- 2C 2C 2D 2D 2D 35 35 37
9270- 3F 3F 37 36 36 00 40 C0
9278- 40 01 2D 2D 2D 2D 2D 24
9280- 3F 3F 3F 3F 3F 36 00 40
9288- 40 2D 2D 2D 2D 2D 24 3F
9290- 3F 3F 3F 3F F6 40 18 08
9298- 2D 2D 2D 2D 2D 24 3F 3F
92A0- 3F 3F 3F 36 00 49 49 2D
92A8- 24 24 24 2D 2D 2D 24 3F
92B0- 3F 3F 24 24 24 3F 36 36
92B8- 36 3F 3F 3F 36 2D 2D 2D
92C0- 36 36 36 00 2D 2C 2C 2C
92C8- 2C 2C 2C 2C 2C 2C 2C 2C
92D0- 2C 24 3F 3E 3E 3E 3E 3E
92D8- 3E 3E 3E 3E 3E 3E 3E 36
92E0- 00 40 40 40 40 18 08 2D
92E8- 24 24 3F 36 36 4A 09 28
92F0- 25 24 3C 37 36 06 00 49
92F8- 49 2E 2C 24 3F F6 40 C0
9300- 08 2D 24 3F 36 00 49 49
9308- 2D 24 3F F6 40 C0 40 2D
9310- 24 3F 36 00 49 29 25 2D
9318- 2E 25 2D 2C 2C 24 3C 3C
9320- 3C 27 24 35 35 2D 24 27
9328- 27 3F 3C 37 3F 3C 37 3F
9330- 3E 3E 36 2E 2E 2E 35 36
9338- 27 27 3F 36 35 35 2D 46
9340- 40 2D 24 3C 37 76 40 08
9348- 25 25 27 37 F6 C0 40 18
9350- 24 3C 37 36 2D DA C3 24
9358- 3C 3E 2E 2E 00 49 49 29
9360- 2D 24 3F 24 27 3C 24 25
9368- 2C 24 2D 24 3F 37 37 3E
9370- 36 37 36 2E 36 35 2E 06
9378- 00 49 29 2D 2C 24 25 2C
9380- 24 24 27 3C 24 27 3F 37
9388- 2E 35 2E 36 35 3E 36 37
9390- 3E 37 06 00 2D 2D 2D 2D
9398- 2D 2D 2D 24 3F 3F 3F 24
93A0- 24 24 24 24 24 3F 3E 3E
93A8- 3E 3E 3E 3E 36 2D 2C 2C
93B0- 2C 2C 36 36 36 36 3F 3F
93B8- 3F 36 00 2D 2D 2D 2D 2D
93C0- 2D 2D 24 3F 3F 3F 3F 3F
93C8- 27 25 25 25 2D 2D 2D 2C
93D0- 2C 24 24 27 27 3F 3F 3F
93D8- 3F 3F 3E 3E 36 2E 25 2C
93E0- 2C 2D 2D 2D 35 35 3E 3E
93E8- 3F 3F 37 37 37 37 37 37
93F0- 36 00 09 2D 2D 2D 2D 2D
93F8- 2C 2C 24 3C 3C 24 25 25
9400- 24 27 27 3F 3F 3F 3F 3F
9408- 3E 3E 36 2D 2C 2C 2D 2D
9410- 2D 35 35 37 37 3F 3F 3F
9418- 37 2E 2D 2D 2D 2E 2E 3E
9420- 3E 3F 3F 3F 27 27 3F 36
9428- 35 35 00 49 49 49 2D 24
9430- 24 24 2C 2D 24 3F 27 24
9438- 24 3F 36 36 3E 3F 3F 3F
9440- 24 24 3C 37 36 36 36 2D
9448- 2D 2D 2D 35 36 36 36 00
9450- 09 2D 2D 2D 2D 2D 2C 2C
9458- 24 24 3C 3C 3C 3F 3F 3F
9460- 3F 27 24 2D 2D 2D 2D 2D
9468- 2D 24 3F 3F 3F 3F 3F 3F
9470- 3F 36 36 36 2E 2D 2D 2D
9478- 2D 2D 2E 36 3E 3E 3F 3F
```

Listing 2 continued.

Listing 2 continued.

```
9480- 3F 27 27 3F 36 35 35 00
9488- 09 2D 2D 2D 2D 2D 2C 2C
9490- 24 24 27 27 3F 3F 3F 3F
9498- 3E 3E 24 24 2C 2C 2D 2D
94A0- 2D 2D 2E 25 3C 3C 3F 3F
94A8- 3F 3F 3F 3E 3E 36 36 36
94B0- 36 36 35 35 40 2D 2D 2D
94B8- 2D 2C 24 27 3F 3F 3F 3E
94C0- 3E 37 35 00 49 09 2D 2C
94C8- 24 25 2C 24 25 2C 24 25
94D0- 25 3C 3F 3F 3F 3F 3F 3F
94D8- 37 2E 2D 2D 2D 2D 35 3E
94E0- 36 37 3E 36 37 3E 36 00
94E8- 09 2D 2D 2D 2D 2D 2C 2C
94F0- 24 3C 3C 24 25 25 24 27
94F8- 27 3F 3F 3F 3F 3F 3E 3E
9500- 36 2E 2E 36 37 37 36 35
9508- 35 40 2D 2D 2D 2D 2C 3C
9510- 3C 3C 3F 3F 37 37 37 75
9518- 40 C0 18 08 2D 2D 2D 2C
9520- 2C 3C 3C 3F 3F 3F 37 37
9528- 35 35 00 29 2D 2D 2D 2D
9530- 2D 2C 2C 24 24 24 24 24
9538- 27 27 3F 3F 3F 3F 3F 3E
9540- 3E 36 36 2E 2E 2E 2D 2D
9548- 2D 2D 35 3E 3E 3F 3F 3F
9550- 3F 3C 37 2E 06 41 40 C0
9558- 18 08 2D 2D 2D 2D 25 24
9560- 3C 3C 3F 3F 3F 37 37 36
9568- 35 00 2D 2C 2C 2C 2C 2C
9570- 2C 2C 2C 2C 2C 2C 2C 24
9578- 3F 3E 3E 3E 3E 3E 3E 3E
9580- 3E 3E 3E 3E 3E 36 4A 08
9588- 2D 2D 2D 2D 2D 25 25 24
9590- 24 24 24 06 D3 36 36 36
9598- 37 3F 3F 3F 05 D8 C3 24
95A0- 24 24 2C 2C 2D 2D 3D 48
95A8- 08 3F 3F 3F 3F 37 37 37
95B0- 36 36 36 36 04 00 07 00
95B8- 40 40 40 40 40 40 2E 2C
95C0- 24 3F 36 00 00 87 87 87
95C8- 87 87 87 87 87 87 87 87
```

#1, make that change in line 24010. Should you have an Epson printer,

```
*800.880

0800- A9 28 85 3C A9 20 85 3D
0808- A9 FF 85 3E A9 3F 85 3F
0810- A9 00 85 42 A9 40 85 43
0818- 20 00 03 A9 50 8D 02 18
0820- 85 07 A9 40 8D 03 18 85
0828- 08 AD 02 18 C9 D1 AD 03
0830- 18 E9 43 90 26 A0 27 A9
0838- 00 99 D8 5F 88 D0 FA A9
0840- 00 85 3C A9 40 85 3D A9
0848- FF 85 3E A9 5F 85 3F A9
0850- 00 85 42 A9 20 85 43 20
0858- 00 03 60 18 AD 02 18 85
0860- 07 69 01 8D 06 18 AD 03
0868- 18 85 08 69 1C 8D 07 18
0870- A5 07 CD 06 18 A5 08 ED
0878- 07 18 90 03 4C 9A 08 A0
0880- 27 A9 00 91 07 88 D0 FB
0888- 91 07 18 A5 07 69 00 85
0890- 07 A5 08 69 04 85 08 4C
0898- 70 08 18 AD 02 18 69 80
08A0- 8D 02 18 AD 03 18 69 00
08A8- 8D 03 18 4C 29 08 00 00
```

Listing 3. SCROLL!!

or any other requiring special dumping software, then once the screen contains what you want printed, hit control-reset and run your printer dump software. Don't worry about the screen vanishing when you hit reset. It doesn't really vanish, as POKE – 16304,0 and POKE – 16297,0 will quickly prove.

To save a SUPERFONT composition, here is what you do. While in the input part of the program type control-S to start saving what you type. You can't save unless you hit control-S first. Then type until you're done or until you have a normal screenful of 126 characters —whichever comes first. When you're ready to quit, hit control-F to indicate you're finished with your SUPERFONT composition.

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using shift-N, except for style #1, which is designated by shift-M. Escape is used for choosing color or scale.

You can go back and fix an error with the color black and the backspace key.

It's possible to create crude animation as compositions are being reproduced with the RETRIEVE program. Also, you can spell a word, go back and erase it, and then redo it in a new color—or change to a new word. This can make a rather nice display when re-created.

> "It's possible to create crude animation as compositions are being reproduced."

If you want to retrieve a saved creation, control-R for RETRIEVE sends you to the program of the specified name. The file names of saved SUPERFONT creations are set up to be the letters A through Y, so only 25 compositions can be stored on one disk. However, a bit of program adjustment will make more names possible. There are two to nine sectors in each saved SUPERFONT text file.

If you want a binary picture of any of your creations, just hit control-reset while that picture is on the screen, and then type BSAVE (NAME), $2000, L$1FF8. To retrieve the picture BLOAD it, POKE -16304,0 and POKE -16297,0.

Next time we'll look at one of business graphics' neatest tools, the pie chart.

In closing, may I say I hope you will read this issue well. You'll find some news about an upcoming revolution in Apple graphics. I admit to being co-conspirator in this revolution, and I'm very excited about it. ■

```
0  PRINT  CHR$ (4);"BLOADCHAR"
1  HIMEM: 36095
8  ONERR  GOTO 63995
10  GOTO 5000
1000  ON F GOTO 1001,1003,1004,1005,1010,1015,1020
1001 TX = X:TY = Y:X = 0:Y = 0: FOR X = TX TO TX + (S + (S * (S - 1))): FOR
     Y = TY TO TY - (S + (S * (S - 1))) STEP  - 1: DRAW A AT X,Y: NEXT : NEXT
     :X = TX:Y = TY: RETURN
1003  DRAW A AT X,Y: DRAW A AT X + 2,Y - 2: RETURN
1004 Z = 0: FOR Q = 1 TO 5: DRAW A AT X + Z,Y - Z:Z = Z + 1: NEXT : RETURN

1005  DRAW A AT X,Y: DRAW A AT X + 2,Y - 2: DRAW A AT X + 4,Y - 4: RETURN

1010 TX = X:TY = Y:X = 0:Y = 0: FOR X = TX TO TX + (S + 1): FOR Y = TY TO
     TY - (S + 1) STEP  - 1: DRAW A AT X,Y: NEXT : NEXT :X = TX:Y = TY: RETURN

1015  DRAW A AT X,Y: DRAW A AT X + 1,Y: DRAW A AT X + 2,Y: RETURN
1020  DRAW A AT X,Y: DRAW A AT X + 1,Y - 1: DRAW A AT X + 2,Y - 2: RETURN

5000  POKE  - 16303,0: POKE  - 16298,0: HOME
5300  CLEAR :S = 1: SCALE= S:HH = 3: HCOLOR= HH: ROT= 64:X = 1:Y = 20
5325  CALL 62450
5350  HOME : VTAB 1: INPUT "WHICH DO YOU WANT?(A-Y):";AN$
5360  IF  ASC (AN$) < 65 OR  ASC (AN$) > 89 THEN 5350
5375 NN =  ASC (AN$) - 64
5400  IF SS = 0 THEN  DIM TF$(26): FOR HH = 1 TO 25:TF$(HH) =  CHR$ (64 +
     HH): NEXT :SS = 1
5510  IF TY = 0 THEN  DIM A(127),B(127),SC(127),CL(127),SH(127),F(127):TY =
     1
5520 D$ =  CHR$ (4)
5525  FLASH : HOME : TEXT : VTAB 1: PRINT "PLEASE SWITCH NOW TO YOUR OWN I
     NITIAL-  IZED DISK UPON WHICH YOUR CREATION IS  STORED": NORMAL : GOSUB
     63000
5530  PRINT D$"OPEN";TF$(NN)
5540  PRINT D$"READ";TF$(NN)
5545  INPUT NB
5550  FOR QW = 1 TO NB
5560  INPUT A(QW),B(QW),SC(QW),CL(QW),SH(QW),F(QW)
5565  NEXT
5570  PRINT D$"CLOSE"
5575  HOME : VTAB 1: PRINT "HIT SPACE BAR WHEN YOU'RE THROUGH       LOOKIN
     G.": FOR QQ = 1 TO 1500: NEXT
5578  POKE  - 16304,0: POKE  - 16297,0
5580  FOR QW = 1 TO NB
5590 X = A(QW):Y = B(QW): SCALE= SC(QW): HCOLOR= CL(QW):A = SH(QW): ROT= 6
     4:F = F(QW)
5591  GOSUB 7000
5592  IF F > 0 THEN  GOSUB 1000: NEXT : GOTO 5600
5595  DRAW A AT X,Y: NEXT
5600 KP =  PEEK ( - 16384): IF KP > 127 THEN  POKE  - 16368,0: GOTO 5700
5650  GOTO 5600
5700  POKE  - 16303,0: POKE  - 16298,0: HOME
5702  HOME : VTAB 1: PRINT "DO YOU WANT A PRINT-OUT OF IT?": INPUT "(Y/N):
     ";P$
5705  IF  ASC (P$) = 89 THEN  GOSUB 24000
5710  HOME : VTAB 1: INPUT "DO YOU WANT TO SEE ANOTHER?(Y/N):";RR$: IF RR$
     = "Y" THEN 5730
5720  FLASH : VTAB 1: PRINT "PLEASE SWITH BACK TO THE PROGRAM DISK   NOW":
     NORMAL : GOSUB 63000: GOTO 5990
5730  GOTO 5300
5990  POKE  - 16304,0: POKE  - 16297,0
5997 NB = 0:F = 0
5998 X = 1:Y = 20:S = 1: SCALE= S: ROT= 64: HCOLOR= 3
5999  CALL 62450:OX = 1:OY = 20:CR = 1:GT46 = 1: CALL 1002
6000 D$ =  CHR$ (4)
6010  PRINT D$"RUNSUPERFONT"
7000  IF B(QW) < B(QW - 1) THEN  CALL 62450
7010  RETURN
9000  HOME : TEXT : VTAB 1: PRINT "NOW TYPE THE CTRL CHARACTERS (OR WHAT-
     EVER) THAT DUMP THE HI-RES SCREEN ONTO  YOUR PRINTER. IF YOUR PRINTE
     R DOESN'T DOTHIS THEN DON'T HIT CTRL P IN THIS PROG.": PRINT
9010  PRINT "MAKE SURE YOU HIT RETURN ONCE YOU'RE    DONE TYPING ALL THE C
     TRL CHARACTERS:": PRINT :A9 = 0
9015  PRINT "IF YOU'VE NO PRINTER WITH HI-RES CAPACI-TY HIT RETURN NOW.": PRINT

9020 A9 = A9 + 1: GET CR$(A9): IF  ASC (CR$(A9)) <  > 13 THEN 9020
9030  PRINT  CHR$ (13): POKE  - 16304,0: POKE  - 16297,0: RETURN
24000 D$ =  CHR$ (4)
24002  POKE  - 16303,0: POKE  - 16298,0
24005  GOSUB 9000: IF  ASC (CR$(1)) = 13 AND P$ = "Y" THEN P$ = "": POKE  -
     16303,0: POKE  - 16298,0: RETURN
24010  PRINT D$"PR#1"
24020  FOR A9 = 1 TO A9: PRINT CR$(A9);: NEXT
24030  PRINT D$"PR#0"
24040  IF P$ = "Y" THEN P$ = "": POKE  - 16303,0: POKE  - 16298,0: RETURN

24999  GOTO 5000
63000  PRINT : PRINT "(HIT ANY KEY TO CONTINUE):": PRINT
63010 PP =  PEEK ( - 16384): IF PP > 127 THEN  POKE  - 16368,0: RETURN
63020  GOTO 63010
63995 QP =  PEEK (222): POKE 216,0
63996  IF QP = 6 OR QP = 5 THEN  PRINT : PRINT "SORRY---NO SUCH FILE! TRY
     AGAIN!": PRINT : FOR WQ = 1 TO 1900: NEXT
63997 CR = 0: POKE 768,104: POKE 769,168: POKE 770,104: POKE 771,166: POKE
     772,223: POKE 773,154: POKE 774,72: POKE 775,152: POKE 776,72: POKE 7
     77,96
63998  ONERR  GOTO 63995: IF QP = 5 OR QP = 6 THEN 5350
63999 G$ =  CHR$ (7): PRINT G$: PRINT G$: GOTO 5000
```

Listing 4. RETRIEVE.