BBC Sprite

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  10 REM **** BBC SPRITES ****
  20 :
  30 REM ** SET UP ZERO PAGE VARIABLES **
  40 TYPE    =&70
  50 OLDXLO =&71:?OLDXLO=0
  60 OLDXHI =&72:?OLDXHI=0
  70 OLDYLO =&73:?OLDYLO=0
  80 OLDYHI =&74:?OLDYHI=0
  90 NEWXLO =&75
 100 NEWXHI =&76
 110 NEWYLO =&77
 120 NEWYHI =&78
 130 XSCALE =&79
 140 YSCALE =&7A
 150 logcol =&7B
 160 ROW    =&7C
 170 YTMPLO =&7D
 180 YTMPHI =&7E
 190 XTMPLO =&7F
 200 XTMPHI =&80
 210 :
 220 HIMEM=HIMEM-150
 230 SPRDAT =HIMEM+1
 240 OSWRCH =&FFEE
 250 DIM MC% &01FF
 260 FOR opt% =0TO 3 STEP 3
 270   P% =MC%
 280   [
 290   OPT opt%
 300   \ **** MOVE TO OLD X,Y ****
 310   \
 320   .SPRITE  LDA #25
 330            JSR OSWRCH
 340            LDA #68
 350            JSR OSWRCH
 360            LDA OLDXLO
 370            STA XTMPLO
 380            JSR OSWRCH
 390            LDA OLDXHI
 400            STA XTMPHI
 410            JSR OSWRCH
 420            LDA OLDYLO
 430            STA YTMPLO
 440            JSR OSWRCH
 450            LDA OLDYHI
 460            STA YTMPHI
 470            JSR OSWRCH
 480   \
 490   \ **** RUBOUT OLD SPRITE ****
 500   \
 510            JSR SPRPLOT
 520   \
 530   \ **** MOVE TO NEW X,Y ****
 540   .NEWMOV   LDA #25
 550            JSR OSWRCH
 560            LDA #68
 570            JSR OSWRCH
 580            LDA NEWXLO
 590            STA XTMPLO
 600            JSR OSWRCH
 610            LDA NEWXHI
 620            STA XTMPHI
 630            JSR OSWRCH
 640            LDA NEWYLO
 650            STA YTMPLO
 660            JSR OSWRCH
 670            LDA NEWYHI
 680            STA YTMPHI
 690            JSR OSWRCH
 700   \
 710   \ **** PLOT NEW SPRITE ****
 720  \
 730            JSR SPRPLOT
 740   \
 750   \ **** TRANSFER NEW X,Y TO OLD X,Y ****
 760            LDA NEWXLO
 770            STA OLDXLO
 780            LDA NEWXHI
 790            STA OLDXHI
 800            LDA NEWYLO
 810            STA OLDYLO
 820            LDA NEWYHI
 830            STA OLDYHI
 840   \
 850   \ **** RETURN TO BASIC ****
 860   \
 870            RTS
 880   \
 890   \ **** SPRITE PLOTTING SUBROUTINE ****
 900   \
 910   \ ** SET EXCLUSIVE OR PLOT **
 920   .SPRPLOT LDA #18
 930            JSR OSWRCH
 940            LDA #3
 950            JSR OSWRCH
 960            LDA logcol
 970            JSR OSWRCH
 980   \
 990   \
1000   \ ** INITIALISE COUNTS **
1010   \ ** X COUNTS BYTES, Y COUNTS BITS**
1020   \ ** ROW COUNTS ROWS OF THREE BYTES **
1030          LDX #&00
1040   .NEWROW LDA #&00
1050          STA ROW
1060   \
1070   .BYTE   LDY #&09
1080   .BIT    LDA #65
1090          STA TYPE
1100          ROL SPRDAT,X
1110          PHP           \STORE CARRY ON STACK
1120          BCS DOPLOT
1130          LDA #64
1140          STA TYPE
1150   \ ** VDU PLOT COMMAND **
1160   .DOPLOT LDA #25
1170          JSR OSWRCH
1180          LDA TYPE
1190          JSR OSWRCH
1200          LDA XSCALE
1210          JSR OSWRCH
1220          LDA #&00
1230          JSR OSWRCH
1240          JSR OSWRCH
1250          JSR OSWRCH
1260   \ ** END OF PLOT COMMAND **
1270          PLP           \RETRIEVE CARRY
1280          DEY
1290          BNE BIT
1300   \ ** IF BYTE FINISHED **
1310          INX
1320          CPX #63
1330          BEQ FINISH
1340   \ ** CHECK FOR END OF ROW **
1350          INC ROW
1360          LDA ROW
1370          CMP #3
1380          BNE BYTE
1390   \ ** IF END OF ROW SUBTRACT YSCALE FROM Y **
1400   \
1410          LDA YTMPLO
1420          SEC
1430          SBC YSCALE
1440          STA YTMPLO
1450          BCS NOSUB
1460          DEC YTMPHI
1470   \ ** ABSOLUTE MOVE TO START OF NEXT ROW **
1480   \
1490   .NOSUB  LDA #25
1500          JSR OSWRCH
1510          LDA #68
1520          JSR OSWRCH
1530          LDA XTMPLO
1540          JSR OSWRCH
1550          LDA XTMPHI
1560          JSR OSWRCH
1570          LDA YTMPLO
1580          JSR OSWRCH
1590          LDA YTMPHI
1600          JSR OSWRCH
1610   \
1620   \ ** NEXT ROW **
1630          JMP NEWROW
1640   \
1650   \ ** END OF SUBROUTINE **
1660   .FINISH RTS
1670   \
1680 ]
1690 NEXT
1700 :
1710 REM **** BASIC PROGRAM STARTS HERE ****
1720 :
1730 REM ** READ SPRITE DATA **
1740 FOR address = SPRDAT TO SPRDAT+62
1750   READ data:?address = data
1760 NEXT address
1770 :
1780 REM **** SET M/C PARAMETERS ****
1790 :
1800 MODE1
1810 GCOL0,129
1820 CLG
1860 ?XSCALE =4:?YSCALE =4
1870 ?logcol=1
1880 :
1890 X=700:Y=800
1900 PROCCOORDS (X,Y)
1910 CALL SPRITE
1920 :
1930 REM **** WAIT FOR CRSR KEYS ****
1940 FOR S=0 TO 1 STEP 0
1950 PROCKEYS
1960 PROCCOORDS (X,Y)
1970 CALL SPRITE
1980 NEXT S
1990 END
2000 :
2010 DEF PROCCOORDS (X,Y)
2020 XH=X DIV 256:XL=X MOD 256
2030 YH=Y DIV 256:YL=Y MOD 256
2040 ?NEWXLO=XL:?NEWXHI=XH
2050 ?NEWYLO=YL:?NEWYHI=YH
2060 ENDPROC
2070 REM **** SCAN KEYBOARD ****
2080 DEF PROCKEYS
2090 LOCAL LT,ZZ:LT=2
2100 FOR ZZ=0 TO 1 STEP 0
2110 IF INKEY(-58) THEN Y=Y+50:ZZ=LT
2120 IF INKEY(-42) THEN Y=Y-50:ZZ=LT
2130 IF INKEY(-26) THEN X=X-50:ZZ=LT
2140 IF INKEY(-122) THEN X=X+50:ZZ=LT
2150 NEXT ZZ
2160 ENDPROC
2170 REM **** SPRITE DATA ****
2180 DATA 255,0,255,254,0,127,252,0,63
2190 DATA 240,0,15,232,0,23,228,0,39
2200 DATA 194,0,67,129,24,129,0,189,0
2210 DATA 0,102,0
2220 DATA 0,102,0
2230 DATA 0,102,0
2240 DATA 0,189,0,129,24,129,194,0,67
2250 DATA 228,0,39,232,0,23,240,0,15
2260 DATA 252,0,63,254,0,127,255,0,255
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Spritely Does It

The sprite — defined in the 63 bytes of DATA — can be moved around the screen by the arrow keys. Its relative slowness is the consequence of using the OSWRCH ROM routine, but it will work in all modes. When the program is RUN, the assembly listing scrolls the screen first, followed by the graphic display