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10 0000 ;*****
20 0000 ;
30 0000 ;      PET FILE SYSTEM
40 0000 ;      LOW LEVEL DISK DRIVERS
50 0000 ;      TWO SIDED SUPPORT
60 0000 ;
70 0000 ;      VERSION 23.4
80 0000 ;
90 0000 ;*****
100 0000 ;      COPYRIGHT H.J. SAAL AND L.J. SHUSTEK, 1978, 1979
110 0000 ;
120 0000 ;      INPUT PARAMETERS:
130 0000 ;      DADR    STARTING BYTE POSITION
140 0000 ;      DSIZ    LENGTH IN BYTES
150 0000 ;      DBLK    RELATIVE BLOCK NUMBER (0...)
160 0000 ;      DDRV    DRIVE # (1 OR 2)
170 0000 ;      DSID    0 OR 1 FOR SINGLE, DBLD SIDED OPTION
180 0000 ;
190 0000 ;      RETURNS:
200 0000 ;      A-REG   IF NOT ZERO, UNSUCCESSFUL
210 0000 ;          (Z/NZ IS SET)
220 0000 ;      SPECIAL RETURN CODES:
230 0000 ;          3 = VERIFY FAILURE
240 0000 ;          5 = DISK CHANGE NOT RESET
250 0000 ;          7 = FORMAT ERROR: SECTOR SIZE NOT 256
260 0000 ;          9 = MEMORY NOT PRESENT ERROR ON READ
270 0000 ;          11 = BAD DRIVE #
280 0000 ;      OTHERWISE, RETURNS HW DISK CONTROLLER BYTE
290 0000 ;      DRETRY  RETRY COUNT THIS OPERATION
300 0000 ;      CUROP   CODE FOR OPERATION IN PROG.
310 0000 ;          $00...  DOING READ
320 0000 ;          $40    VERIFY
330 0000 ;          $80    WRITE
340 0000 ;          $C0    READING AND FLUSHING
350 0000 ;      INPUTS  PRESERVED
360 0000 ;
370 0000 ;
380 0000 ;      RDCMD=255-$9C      MULT READ, IBM, HEAD IN
390 0000 ;      SEEKCI=255-$18      6 MS. SEEK, LOAD, NO VERIF.
400 0000 ;      WRCMD=255-$BC      MULT WRITE, IBM, HEAD IN
410 0000 ;      STOPIT=255-$D0      HALT CURRENT OPERATION, NO INTERRUPT
420 0000 ;
430 0000 ;      TIMOUT=30  (1/2 SECOND DESELECT TIMEOUT)
440 0000 ;      ; MAX TIMOUT=128, OR 2 SECONDS
450 0000 ;      TIMINF=$FF ...THIS WILL NEVER TIMOUT
460 0000 ;      BSINTH=$E685      BASIC INT. HANDLER
470 0000 ;      OLDPIA=$0209      KB PIA LAST JIFFY
480 0000 ;      KEYCNT=$020D      COUNT OF KEYS
490 0000 ;      KEYBUF=$020F      KEYBD BUFFER
500 0000 ;      CURFLS=$0224      0=CURSOR FLASHING
510 0000 ;      KBPIA=$E812      KB PIA (IN)
520 0000 ;
530 9033      *=DREAD
540 9033 4C4698  JMP READ
550 9036      *=DWRITE
560 9036 4C4A98  JMP WRITE
570 9039      *=DVERIFY
580 9039 4C4298  JMP VERIFY
590 903C      *=D2STST
600 903C 4C599A  JMP T2TST

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610 903F *=DCHTST
620 903F 4C469A JMP TDSKCH
630 9057 *=DINTRH
640 9057 4CA59A JMP INTRPT
650 9840 *=DSKRDN
660 9840 DA9A .WORD END
670 9842 ;-----
680 9842 ;
690 9842 ; RAM LOCAL VARIABLES USED:
700 9842 ; CUROP DSKERC MAXY
710 9842 ERRCOD=MAXY ***ALTERNATE USE OF RAM VARIABLE
720 9842 ;
730 9842 ;
740 9842 A040 VERIF LDY #$40 (WARNING: HDISK RTNS KNOW THESE CODES)
750 9844 D006 BNE INIT
760 9846 A000 READ LDY #0
770 9848 F002 BEQ INIT
780 984A A080 WRITE LDY #$80
790 984C A200 INIT LDX #0 RETRY COUNT
800 984E 8E38AF STX DRETRY THIS OPERATION
810 9851 206D9A JSR TSTHRD
820 9854 D003 BNE FLOPPY NOT A HARD DISK
830 9856 4C5D90 JMP HDSKOP OTHERS ARE HARD
840 9859 A53F FLOPPY LDA DDRV
850 985B D003 BNE FLOPOK ZERO IS ILLEGAL
860 985D A90B LDA #11
870 985F 60 RTS
880 9860 20769A FLOPOK JSR SELDRD SELECT FROM DDRV
890 9863 2920 AND #$20 IS DISK CHANGE ON?
900 9865 D011 BNE REINIT NO
910 9867 ADFCBF LDA DDCMD CHECK IF READY
920 986A 1006 BPL FLOX NO, SHOW IT
930 986C 20969A JSR DESELDD YES, DESELECT
940 986F A905 LDA #5 AND RETURN ERROR CODE
950 9871 60 RTS
960 9872 20969A FLOX JSR DESELDD DESELECT
970 9875 A980 LDA #$80 NOT READY
980 9877 60 RTS
990 9878 98 REINIT TYA SAVE CUROP
1000 9879 48 PHA
1010 987A 8D39AF WVERIF STA CUROP REENTER HERE FOR VERIFY AFTER WRITE
1020 987D A542 LDA DBLK SAVE DBLK
1030 987F 48 PHA
1040 9880 A543 LDA DBLK+1 SAVE MORE DBLK
1050 9882 48 PHA
1060 9883 A544 LDA DSIZ
1070 9885 48 PHA
1080 9886 A545 LDA DSIZ+1
1090 9888 48 PHA
1100 9889 ; MOVE DADR TO PAGE0 POINTER - PNTL,H
1110 9889 A546 LDA DADR
1120 988B 8549 STA PNTL
1130 988D A547 LDA DADR+1
1140 988F 854A STA PNTH
1150 9891 A900 LDA #0
1160 9893 8D3AAF STA MAXY
1170 9896 ADFCBF WNBSY LDA DDCMD
1180 9899 2901 AND #1
1190 989B F0F9 BEQ WNBSY
1200 989D A544 SEEKB LDA DSIZ SHORT CUT
1210 989F 0545 ORA DSIZ+1
1220 98A1 D003 BNE S0 KEEP GOING
1230 98A3 4C7B99 JMP DONET DONT SEEK IF JUST FINISHED
1240 98A6 20209A S0 JSR GETTRK COMPUTE THE TRACK NUMBER
1250 98A9 CDFDBF CMP DDTRK ARE WE THERE?
1260 98AC F013 BEQ S2 YES, SKIP SEEK

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1270 98AE 48 PHA SAVE TRACK #

 1280 98AF 8DFFBF STA DDATA

 1290 98B2 A9E7 LDA #SEEKCL LOAD THE HEAD NOW

 1300 98B4 8DFCBF STA DDGMD

 1310 98B7 58 CLI LET INTERRUPTS IN

 1320 98B8 2CFBBF S1 BIT DDSEL IDLE HERE

 1330 98BB 50FB BVC S1 TILL SEEK DONE

 1340 98BD ; WE ARE READY TO READ OR WRITE

 1350 98BD ; SET THE TRACK AND SECTOR IN THE CONTROLLER

 1360 98BD ; NOTE: YOU CAN'T COUNT ON THE TRACK REGISTER

 1370 98BD ; AFTER A SEEK, SINCE IT IS SET TO ZERO

 1380 98BD ; IF THE HW DETECTS TRACK Ø!!!

 1390 98BD 68 PLA RESTORE TRACK #

 1400 98BE 8DFDBF STA DDTRK

 1410 98C1 20169A S2 JSR GETSEC COMPUTE SECTOR #

 1420 98C4 8DFEBF STA DDSEC

 1430 98C7 ; NOW LOAD APPROP. COMMAND

 1440 98C7 AD39AF LDA CUROP

 1450 98CA C980 CMP #\$80 WRITE?

 1460 98CC F004 BEQ LDWRT

 1470 98CE A963 LDA #RDCMD NO

 1480 98D0 D002 BNE LD1

 1490 98D2 A943 LDWRT LDA #WRCMD

 1500 98D4 78 LD1 SEI

 1510 98D5 8DFCBF STA DDCMD

 1520 98D8 A000 LDY #0 INDEX INTO CURRENT SECTOR

 1530 98DA B8 BOSECT CLV RESET FOR ERROR TESTS LATER

 1540 98DB A545 LDA DSIZ+1 AT LEAST A PAGE TO GO?

 1550 98DD D010 BNE BOSX BR IF YES

 1560 98DF A544 LDA DSIZ

 1570 98E1 D003 BNE BOSY

 1580 98E3 4C7699 JMP DONE

 1590 98E6 8D3AAAF BOSY STA MAXY REMAINING BYTES IN SECTOR

 1600 98E9 A900 LDA #0

 1610 98EB 8544 STA DSIZ SO WE ARE DONE NEXT TIME

 1620 98ED F002 BEQ DOSECT

 1630 98EF C645 BOSX DEC DSIZ+1 DO ONE PAGE

 1640 98F1 AE39AF DOSECT LDX CUROP WRITE?

 1650 98F4 304C BMI DOWR

 1660 98F6 D025 BNE DOCOMP

 1670 98F8 ; READING: CHECK ONE BYTE PRESENT

 1680 98F8 B149 LDA (PNTL),Y OLD VALUE

 1690 98FA 49FF EOR #\$FF CHANGE ALL BITS

 1700 98FC 9149 STA (PNTL),Y SAVE IT BACK

 1710 98FE D149 CMP (PNTL),Y AND IT BETTER BE THERE

 1720 9900 F003 BEQ TRYRD OKAY, GO ON

 1730 9902 4CA599 JMP MEMERR BAD NEWS SIGNAL

 1740 9905 7014 TRYRD BVS TRYCM ERROR ON READ..GOTO RETRYX

 1750 9907 2CFBBF DOREAD BIT DDSEL

 1760 990A 10F9 BPL TRYRD

 1770 990C ADFFBF LDA DDATA

 1780 990F 9149 STA (PNTL),Y

 1790 9911 C8 INY

 1800 9912 F03D BEQ EOSECT

 1810 9914 CC3AAAF CPY MAXY

 1820 9917 D0EE BNE DOREAD

 1830 9919 F016 BEQ DOFL

 1840 991B ;

 1850 991B 7014 TRYCM BVS DOFL ERROR..GOTO RETRYX

 1860 991D 2CFBBF DOCOMP BIT DDSEL

 1870 9920 10F9 BPL TRYCM

 1880 9922 ADFFBF LDA DDATA

 1890 9925 D149 CMP (PNTL),Y

 1900 9927 D075 BNE BADCMP DATA MISCOMPARE

 1910 9929 C8 INY

 1920 992A F025 BEQ EOSECT

1930 992C CC3AAF CPY MAXY
 1940 992F D0EC BNE DOCOMP
 1950 9931 700D DOFL BVS TRYWR ERROR..GOTO RETRYX
 1960 9933 2CFBBF BIT DDSSEL
 1970 9936 10F9 BPL DOFL
 1980 9938 ADFFBF LDA DDATA
 1990 993E C8 INY
 2000 993C D0F3 BNE DOFL
 2010 993E F011 BEQ EOSECT
 2020 9940 707A TRYWR BVS RETRYX GOTO RETRYX ON ERROR
 2030 9942 2CFBBF DOWR BIT DDSSEL
 2040 9945 10F9 BPL TRYWR
 2050 9947 B149 LDA (PNTL),Y
 2060 9949 8DFFBF STA DDATA
 2070 994C C8 INY
 2080 994D D0F3 BNE DOWR
 2090 994F F000 BEQ EOSECT
 2100 9951 ;
 2110 9951 ADFEBF EOSECT LDA DDSEC CURRENT SECTOR
 2120 9954 AA TAX SAVE IT HERE
 2130 9955 18 CLC
 2140 9956 6542 ADC DBLK ADD TRUE BLK NO TO COMPL. HW VALUE
 2150 9958 18 CLC
 2160 9959 6902 ADC #2 PLUS TWO FOR DIFFERENT ORIGIN
 2170 995B 290F AND #\$F LOW 4 BITS SHOULD
 2180 995D D038 BNE FRMERR BE ZERO NOW
 2190 995F E64A INC PNTN WRITE/READ NEXT PAGE
 2200 9961 E642 INC DBLK UPDATE RELATIVE BLOCK #
 2210 9963 D002 BNE EOS1
 2220 9965 E643 INC DBLK+1 CARRY INTO NEXT BYTE
 2230 9967 E0EF EOS1 CPX #255-16 IS SECTOR REG PAST THE END?
 2240 9969 F003 BEQ EOS2 YES, NEXT TRACK
 2250 996B 4CDA98 JMP BOSECT NO, KEEP GOING
 2260 996E 20AC99 EOS2 JSR KILL STOP DISK SPINNING
 2270 9971 D04C BNE RETRY STATUS IS N.G.
 2280 9973 4C9D98 JMP SEEKB GO TO NEXT TRACK
 2290 9976 ;
 2300 9976 20AC99 DONE JSR KILL
 2310 9979 D044 BNE RETRY
 2320 997B AD39AF DONET LDA CUROP WHAT WERE WE DOING?
 2330 997E C980 CMP #\$80 A WRITE?
 2340 9980 F004 BEQ DOVER YES, GO VERIFY
 2350 9982 A900 LDA #0 ALL DONE, OK
 2360 9984 F039 BEQ RETRY GET OUT..
 2370 9986 ; VERIFY NEEDED
 2380 9986 68 DOVER PLA RESTORE LENGTH
 2390 9987 8545 STA DSIZ+1
 2400 9989 68 PLA
 2410 998A 8544 STA DSIZ
 2420 998C 68 PLA
 2430 998D 8543 STA DBLK+1
 2440 998F 68 PLA
 2450 9990 8542 STA DBLK
 2460 9992 A940 LDA #\$40 SET VERIFY CODE
 2470 9994 4C7A98 JMP WVERIFY AND START VERIFY
 2480 9997 20AC99 FRMERR JSR KILL
 2490 999A A907 LDA #7 7 IS SIGNAL FOR BAD DISK FORMAT
 2500 999C D021 BNE RETRY
 2510 999E ;
 2520 999E ;
 2530 999E 20AC99 BADCMP JSR KILL
 2540 99A1 A903 LDA #3 3 IS SIGNAL FOR VERIFY ERROR
 2550 99A3 D01A BNE RETRY
 2560 99A5 ;
 2570 99A5 20AC99 MEMERR JSR KILL
 2580 99A8 A909 LDA #9 9 IS SIGNAL FOR NO MEMORY PRESENT ON READ

2590 99AA D013 ; BNE RETRY
 2600 99AC ;
 2610 99AC A92F KILL LDA #STOPIT HALT CURRENT OPERATION AT ONCE
 2620 99AE 8DFCBF STA DDCMD
 2630 99B1 A900 LDA #0 RETURN OK STATUS
 2640 99B3 F005 BEQ KRET
 2650 99B5 ADFCBF TROBLE LDA DDCMD READ STATUS
 2660 99B8 49FF EOR #\$FF RETURN STATUS IN A
 2670 99BA ; CALLERS DEPEND ON Z BIT!!
 2680 99BA 58 KRET CLI RESTORE THEM ALL
 2690 99BB 60 RTS
 2700 99BC 20E599 RETRYX JSR TROBLE GET STATUS
 2710 99BF 8D3AAF RETRY STA ERRCOD SAVE IT FOR NOW
 2720 99C2 68 GETOUT PLA
 2730 99C3 8545 STA DSIZ+1
 2740 99C5 68 PLA
 2750 99C6 8544 STA DSIZ
 2760 99C8 68 PLA RESTORE TRUE BLOCK COUNT
 2770 99C9 8543 STA DBLK+1
 2780 99CB 68 PLA RESTORE TRUE BLOCK COUNT
 2790 99CC 8542 STA DBLK
 2800 99CE 68 PLA GET CUROP
 2810 99CF A8 TAY HOLD IT IN Y
 2820 99D0 AD3AAF LDA ERRCOD WAS THERE AN ERROR?
 2830 99D3 F03A BEQ GOUT NO.
 2840 99D5 AA RECAL TAX SAVE CODE
 2850 99D6 29C0 AND #\$C0 NOT READY OR PROTECTED
 2860 99D8 D035 BNE GOUT GIVE UP
 2870 99DA 8A TXA LOOK AGAIN AT ERROR
 2880 99DB E003 CPX #3
 2890 99DD F004 BEQ DORTY
 2900 99DF 2901 AND #1 SPECIAL CODE?
 2910 99E1 D02C BNE GOUT YES, QUIT
 2920 99E3 A9FF DORTY LDA #DDREST DO A RESTORE
 2930 99E5 8DFCBF STA DDCMD
 2940 99E8 2CFBBF RECALW BIT DDSEL WAIT FOR END OF RESTORE
 2950 99EB 50FB BVC RECALW
 2960 99ED EE37AF INC DSKERC+1 BUMP ERROR COUNT
 2970 99F0 D003 BNE RECAL1
 2980 99F2 EE36AF INC DSKERC
 2990 99F5 98 RECAL1 TYA TEST OPERATION
 3000 99F6 F006 BEQ RECAL2 WAS READ
 3010 99F8 3008 BMI RECAL3 WAS WRITE
 3020 99FA A202 LDX #2 VERIFY, 2 RETRIES
 3030 99FC D006 BNE RECAL4
 3040 99FE A208 RECAL2 LDX #8 READ, 8 RETRIES
 3050 9A00 D002 BNE RECAL4
 3060 9A02 A204 RECAL3 LDX #4 WRITE, 4 RETRIES
 3070 9A04 EC38AF RECAL4 CPX DRETRY AT MAX?
 3080 9A07 F006 BEQ GOUT YES
 3090 9A09 EE38AF INC DRETRY NO, TRY AGAIN
 3100 9A0C 4C7898 JMP REINIT GO TRY AGAIN
 3110 9A0F 20969A GOUT JSR DESEL0 Deselect Current Drive
 3120 9A12 AD3AAF OUT LDA ERRCOD RESTORE ERROR CODE FOR CALLER
 3130 9A15 60 RTS
 3140 9A16 ;
 3150 9A16 ; COMPUTE SECTOR NUMBER
 3160 9A16 ; IN H.W. FORM, FROM DBLK
 3170 9A16 ;
 3180 9A16 A542 GETSEC LDA DBLK
 3190 9A18 290F AND #\$F JUST USE LOW FOUR BITS
 3200 9A1A 18 CLC
 3210 9A1B 6901 ADC #1 MAKE ORIGIN 1
 3220 9A1D 49FF EOR #\$FF COMPLEMENT FOR H.W.
 3230 9A1F 60 RTS
 3240 9A20 ;

3250 9A20 ; COMPUTE TRACK NUMBER
 3260 9A20 ; IN H.W. FORM, FROM DBLK
 3270 9A20 ; AUTOMATICALLY SELECTS 2ND SIDE
 3280 9A20 ; IF NEEDED, AND OPN IS 2SIDED
 3290 9A20 ;
 3300 9A20 A542 GETTRK LDA DBLK
 3310 9A22 4A LSR A
 3320 9A23 4A LSR A SHIFT 4 TIMES
 3330 9A24 4A LSR A
 3340 9A25 4A LSR A TO GET LW ORDER ADDRESS ALIGNED
 3350 9A26 8D34AF STA TEMP SAVE IT
 3360 9A29 A543 LDA DBLK+1 GET HIGH ORDER BLOCK NUMBER
 3370 9A2B 0A ASL A
 3380 9A2C 0A ASL A SHIFT LEFT 4 TIMES
 3390 9A2D 0A ASL A
 3400 9A2E 0A ASL A
 3410 9A2F 0D34AF ORA TEMP PUT TOGETHER
 3420 9A32 ;
 3430 9A32 ; WE NOW HAVE 8 BITS TOGETHER
 3440 9A32 ; THIS IS AT MOST 7 BITS FOR TRACK
 3450 9A32 ; AND 1 FOR SIDE, IF NEEDED.
 3460 9A32 ; THIS COVERS ALL 77 TRACKS FOR NOW
 3470 9A32 ;
 3480 9A32 A640 LDX DSID OPERATION 1 OR 2 SIDED?
 3490 9A34 F00D BEQ GETTR2 BR IF 1 SIDE
 3500 9A36 4A LSR A MOVE SIDE TO CARRY
 3510 9A37 48 PHA SAVE TRACK NUMBER
 3520 9A38 A53F LDA DDRV GET DRIVE NO.
 3530 9A3A 9002 BCC GETTR1 BR IF SIDE 0
 3540 9A3C 6902 ADC #2 IF SIDE TWO, MAP 0,1,2 TO 3,4,5
 3550 9A3E ; THIS FORCES SECOND SIDE SELECT
 3560 9A3E AA GETTR1 TAX PUT DRIVE IN X
 3570 9A3F 207F9A JSR SELDRX AND PHYSICALLY PICK IT
 3580 9A42 68 PLA RESTORE TRACK
 3590 9A43 49FF GETTR2 EOR #\$FF MAKE H.W. FORMAT
 3600 9A45 60 RTS
 3610 9A46 ;
 3620 9A46 ; MISC ROUTINES
 3630 9A46 ;
 3640 9A46 206D9A TDSKCH JSR TSTHRD HRD DISK?
 3650 9A49 F0F8 BEQ GETTR2 NEVER DISK CHANNGE
 3660 9A4B 20649A JSR STGET SELECT, DESELECT
 3670 9A4E 2920 AND #\$20 TEST CHANGE BIT
 3680 9A50 D006 BNE TDSKX EXIT IF NOT CHANGED
 3690 9A52 8DFBBF STA DDSEL IF CHANGED, MUST RESET SELECT FOR NEXT TRY
 3700 9A55 8D61AF STA DTIMER CANCEL COUNTDOWN
 3710 9A58 60 TDSKX RTS
 3720 9A59 ;
 3730 9A59 206D9A T2TST JSR TSTHRD HRD DISK?
 3740 9A5C F0FA BEQ TDSKX ALWAYS DOUBLE SIDED
 3750 9A5E 20649A JSR STGET SELECT, DESELECT
 3760 9A61 2910 AND #\$10 TEST 2 SIDE BIT
 3770 9A63 60 RTS
 3780 9A64 ;
 3790 9A64 ;
 3800 9A64 20769A STGET JSR SELDRD SELECT CURRENT DRIVE
 3810 9A67 48 PHA SAVE STATUS
 3820 9A68 20969A JSR DESELD Deselect CURRENT DRIVE
 3830 9A6B 68 PLA GET STATUS
 3840 9A6C 60 RTS
 3850 9A6D ;
 3860 9A6D A53F TSTHRD LDA DDRV SEE IF HARD DISK
 3870 9A6F C903 CMP #3
 3880 9A71 3002 BMI TSTHRX NO, FLOPPY
 3890 9A73 A900 LDA #0 HARD DISK
 3900 9A75 60 TSTHRX RTS

3910 9A76 ;
3920 9A76 ;
3930 9A76 ; SELECT CURRENT DRIVE
3940 9A76 A53F SELDRD LDA DDRV
3950 9A78 ;
3960 9A78 ; FALL INTO...
3970 9A78 ;
3980 9A78 ; SELECT DRIVE FROM A
3990 9A78 ; USE TRACK HISTORY FROM DLSTRK:DLSTRK+2
4000 9A78 ; RETURNS STATUS IN A
4010 9A78 ;
4020 9A78 AA SELDR TAX
4030 9A79 BD46AF LDA DLSTRK,X GET OLD TRACK POSITION
4040 9A7C 8DFDBF STA DDTRK SET INTO REGISTER
4050 9A7F BD909A SELDRX LDA HWSEL,X PICK THE SELECT LINES AND SIDE SELECT
4060 9A82 78 SEI SUSPEND INT'S
4070 9A83 8DFBBF STA DDSEL
4080 9A86 A9FF LDA #TIMINF SELECT FOR EVER, TILL DESELECTED
4090 9A88 8D61AF STA DTIMER
4100 9A8B 58 CLI ALLOW INT'S
4110 9A8C ADFBBF LDA DDSEL RETURN STATUS
4120 9A8F 60 RTS
4130 9A90 ;
4140 9A90 00 HWSEL .BYTE 0,2,4
4140 9A91 02
4140 9A92 04
4150 9A93 00 .BYTE 0,34,36 2ND SIDE
4150 9A94 22
4150 9A95 24
4160 9A96 ;
4170 9A96 ; DESELECT CURRENT DRIVE
4180 9A96 ;
4190 9A96 A53F DESELL LDA DDRV
4200 9A98 ;
4210 9A98 ; FALL INTO...
4220 9A98 ;
4230 9A98 ; DESELECT DRIVE FROM A REG.
4240 9A98 ; SAVE TRACK REGISTER IN DLSTRK:DLSTRK+2
4250 9A98 ;
4260 9A98 AA DESEL TAX
4270 9A99 ADFDBF LDA DDTRK CURRENT POSITION
4280 9A9C 9D46AF STA DLSTRK,X SAVED..
4290 9A9F A91E LDA #TIMOUT START COUNTDOWN
4300 9AA1 8D61AF STA DTIMER NOW...
4310 9AA4 60 RTS DONE
4320 9AA5 ;
4330 9AA5 38 INTRPT SEC COUNT DOWN EACH CLOCK INTERRUPT
4340 9AA6 AD61AF LDA DTIMER
4350 9AA9 E901 SBC #1 LESS ONE
4360 9AAB 3008 BMI STPCHK WAS ALREADY OFF
4370 9AAD 8D61AF STA DTIMER GE ZERO, RESET
4380 9AB0 D003 BNE STPCHK NOT ZERO, EXIT
4390 9AB2 8DFBBF STA DDSEL DESELECT HW
4400 9AB5 AD2402 STPCHK LDA CURFLS CURSOR FLASHING?
4410 9AB8 D01D BNE INTXIT NO, QUIT
4420 9ABA AD12E8 LDA KBPIA SEE IF STOP DOWN
4430 9ABD 2910 AND #16
4440 9ABF D016 BNE INTXIT IT IS UP
4450 9AC1 AD0902 LDA OLDPIA IT IS DOWN
4460 9AC4 2910 AND #16
4470 9AC6 F00F BEQ INTXIT IT WAS DOWN BEFORE TOO
4480 9AC8 A9A0 LDA #\$A0 NEW DOWN!!
4490 9ACA 8D0F02 STA KEYBUF MOVE SHIFT SPACE
4500 9ACD A90D LDA #\$0D AND CR
4510 9ACF 8D1002 STA KEYBUF+1 TO KEYBD BUFFER
4520 9AD2 A902 LDA #2 COUNT OF KEYS

4530 9AD4 8D0D02 STA KEYCNT ..WILL CAUSE EXIT
4540 9AD7 4C85E6 INTXIT JMP BSINTH I AM THE LOWEST LEVEL HANDLER
4550 9ADA ; GO BACK TO BASIC
4560 9ADA ;
4570 9ADA END .END