Joel Gluck asked me how to use interrupts from an ACTION program. Here are two programs which, respectively, deal with the DLI and VBLD interrupts.

Notice that, since Action is not re-entrant, you can't call subroutines, or do anything else which might mess up a memory location that the main program is depending upon. For example, multiply and divide are both done by subroutines, so you can't use them within a VBLANK routine. It is, however, safe to add, subtract, index an array, and store. (But be sure to clear the decimal flag if your main program might be calling the floating point ROMs!)

```plaintext
; ; Example of use of display list
; interrupt from Action
;
BYTE    VCOUNT = $D40B,
WSYNC = $D40A,
NMIEN = $D40E,
CH = $2FC,
COLPF2 = $D018

CARD    VDSLST = $200,
SDLST = $230,
OLDVEC

DEFINE PHA = "$48",
PLA = "$68",
TAX = "$AA",
TAY = "$A8",
TXA = "$8A",
TYA = "$98",
RTI = "$40"

;
; During a DLI you can't call any
; other functions, nor multiply,
; nor divide
;
PROC DLI()
[PHA TYA PHA TXA PHA]
WSYNC = VCOUNT
COLPF2 = VCOUNT
[PLA TAX PLA TAY PLA RTI]

PROC MAIN()
BYTE I
BYTE POINTER TEMP
PRINTE("Setting up DLI")

NMIEN = $40 ;DISABLE DLI

OLDVEC = VDSLST
VDSLST = DLI

TEMP = SDLST+3
TEMP^ = $C2

FOR I = 1 TO 23
DO
```
TEMP = SDLST + I + 5
TEMP^ = $82
OD

NMIEN = $C0 ; ENABLE DLI

WHILE CH = $FF DO
    PRINTE("Press any key to quit")
OD

CH = $FF ; Swallow key press

PrintE("Restoring DLI")

NMIEN = $40 ; DISABLE DLI
TEMP = SDLST+3
TEMP^ = $42

FOR I = 1 TO 23
DO
    TEMP = SDLST + I + 5
    TEMP^ = $02
OD

VDSLST = OLDVEC
PRINTE("Returning")
RETURN

VBL.ACT

; Example of using the vertical blank
; deferred interrupt from Action
;
BYTE    RTCLOCK = 20,
        CH = $2FC,
        COLOR2 = $2C6

CARD    VVBLKD = $224,
        SDLST = $230,
        OLDVEC

DEFINE JMPI = "$6C"

; Within a VBI you can't call any
; subroutines, nor can you multiply
; or divide . . . .

PROC VBLANKD()
    COLOR2 = RTCLOCK
    [JMPI OLDVEC]

; Simulate the OS call SETVBV

PROC SETVBV(BYTE WHICH
            CARD ADDR)
    CARD POINTER TEMP
BYTE V
TEMP = $216 + (WHICH LSH 1)
V = RTCLOCK+ 1
WHILE V <> RTCLOCK DO OD
TEMP^ = ADDR
RETURN

PROC MAIN()
BYTE OLDC2

OLDC2 = COLOR2
PRINTE("Setting up Vblank")

OLDVEC = VVBLKD
SETVBV(7, VBLANKD)

WHILE CH = $FF DO
   PRINTE("Press any key to quit")
OD
CH = $FF ;Swallow key press

PRINTE("Restoring Vblank")

Setvbv(7, OLDVEC)
COLOR2 = OLDC2
PRINTE("Returning")
RETURN