Apple II Technical Notes

Developer Technical Support

Apple IIGS
#65: Control-^ is Harder Than It Looks

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September 1989

This Technical Note describes a problem using Control-^ to change the text cursor with programs that use GETLN.

On the Apple IIGS, typing Control-^ changes the cursor to the next character typed. This feature works properly from the keyboard, but there is a problem when programs print the control sequence. Try entering the following from AppleSoft to demonstrate this problem:

```
NEW
PRINT CHR$(30);"_"
```

It changes the cursor into a blinking underscore, as expected. But now enter the following:

```
12345 HOME
LIST
```

You should see `2345 HOME`, which demonstrates that the first character is ignored. This is a problem with GETLN, which AppleSoft uses to read each line of input. Even if your program does not use this routine, you should be aware of this problem since it will occur the next time another program uses GETLN.

Since changing the cursor works fine when done from the keyboard, the way to work around this problem is to have your program simulate the appropriate keypresses for GETLN.

```
301: CLD            ; required by BASIC.SYSTEM
302: STA ($28),Y    ; remove cursor if present
304: LDY $0300      ; get index into simulated-keys list
307: LDA $310,Y     ; get a simulated keypress
30A: INC $0300      ; point to the next key for next time
30B: RTS            ; return the key to GETLN

310: 9E DF 8D       ; Ctrl-^, underscore, return

100 POKE 768,0 : PRINT CHR$(4);"IN#A$301" : REM Start getting simulated keys
110 INPUT "";A$
120 PRINT CHR$(4);"IN#0" : REM Get real keys again
```

From an assembly-language program, the equivalent of `IN#A$301` is storing $01 and $03 in locations $38 and $39, while the equivalent of `INPUT` is `JSR $FD6A` (`GETLN`). (Store a harmless prompt character, like $80, into location $33 first.)

Further Reference

- *Apple IIGS Firmware Reference*, p. 77