

UNIVERSITY OF ILLINOIS  
DIGITAL COMPUTER

LIBRARY ROUTINE X 16 - 284

**TITLE:** "Current Floating Relativizer" SADOI Modification to be placed on program tape.

**TYPE:** Special - Fast interlude to modify SADOI while it is in Williams Memory.

**STORAGE:** Temporarily uses 14 words in WM locations 563 - 576 during operation of the fast interlude to modify SADOI. However, this in no way affects the use of Williams Memory 002 - 998 by the programmer.

**DESCRIPTION:** It is frequently desirable to have a local address reference in a program. Entries to subroutines, and references to locations a few orders in front or in back of the present location are frequently made. Symbolic addresses are frequently used for this purpose.

Use of this routine, however, creates a new termination symbol SO which means "location of this order". This termination may be used in the same manner as normal S - parameters, in that the address nSO means "Williams Memory location of this order plus n", (n is mod 1024).

**EXAMPLE A:** Instead of frequent subroutine entries of the type:

(A)		- -
		<u>50 (A)</u>
		26 (Subroutine)

It is now possible to omit the symbolic address and simply use

		- -
		<u>50 SO</u>
		26 (subroutine)

This will often appreciably shorten the symbolic address list, and thereby shorten the read-in time of the program.

EXAMPLE B:

In order to refer to orders a few locations back or forward, formerly the following method was frequently used:

Forward Reference		Backward Reference	
	- -	(A)	L5 563F
	- -		40 F
	F5 (A)		- -
	40 (A)		- -
	- -		- -
	- -		- -
(A)	L5 563F		F5 (A)
	40 F		40 (A)

Using the SO termination, these would become

	- -		L5 563F	
	- -		40 F	(1021SO)
	F5 2SO		- -	
	40 2SO	(SO)	- -	(1022SO)
	- -		- -	
	- -	(1SO)	- -	(1023SO)
	L5 563F		F5 1021SO	
	40 F	(2SO)	40 1021SO	(1024SO)

HOW TO USE:

This fast interlude will normally be placed at the beginning of a program tape, in order to modify SADOI before input of the regular program begins. It should come after any "drum clear" (N) or "reperforate heading" (J), characters, at the point where the first directive to SADOI normally appears. If the program contains either regular or special interludes, then this fast interlude must be placed on the program tape to modify SADOI each time it is reloaded into the WM (unless, of course, the programmer does not use any SO terminations in the next part of his program). Fast interludes to modify SADOI

should be checked for possible conflicts with the present modifications. The order pairs of this interlude will not appear either in the WM with the user's program, or anywhere in the storage space on the drum used by SADOI.

**WARNING!**

An attempt to use the SO termination without modifying SADOI will result in a hangup on a zero right shift, and input stops immediately.

DATE	January 12, 1960
PROGRAMMED BY	John Ehrman
APPROVED BY	<i>J. Snyder</i>

ns

LOCATION	ORDER	NOTES	PAGE 1	X 16
	00 999K			
563	40 259F 26 113F	Blocking order in S - termination section; jumps to test for S0		
564	50 31F 11 F	Change method of putting bit in Q		
565	49 21F 27 52F	Block search for ( and jump to other ( search loop		
566	F0 367F 36 247F	Test for S - parameter 0, jump back if not		
567	L5 84F 42 17F	get WM address of this order, store temporarily		
568	22 172F 41 21F	jump to complete construction of order		
569	L5 563F 40 246F	make modifications in SADOI		
570	L5 564F 40 247F	" " " "		
571	L5 565F 40 112F	" " " "		
572	L5 566F 40 113F	" " " "		
573	L5 567F 40 114F	" " " "		
574	L5 568F 40 115F	" " " "		
575	L5 368F 42 86F	reset 86 so as not to record interlude on drum		
576	26 93F 00 F 26 1475N	resume input		