A SYMBOLIC UTILITY PROGRAM FOR TX-0

FLIT - FLEXOWRITER INTERROGATION TAPE

INTRODUCTION

A new utility program, FLIT, has been prepared for the TX-0 which allows the user to test a program in terms of symbolic addresses. FLIT is designed to replace UT-3 and has taken advantage of the recent increase in memory size to provide the user with many new features as well as improved versions of the old ones. The largest single advantage is that the operator may now type in and out of memory using, whenever he desires, any of the three letter tags in his symbol table, as well as any additional ones he may wish to define.

FLIT was originally designed for use with the Lincoln type face (see M-5001-11). Ultimately this will come about, but in the meantime a standard type face version is available.

USING FLIT

FLIT occupies the end of memory from approximately register 13300 to register 17777 including the standard end of memory input routine. Obviously, the program to be tested by FLIT must not occupy or use any of these registers.

To use FLIT, turn on the flexowriter with the punch switch on and depress the start read button. Place FLIT in the PETR and press read in. Turn on the type in switch. When FLIT has finished reading in, the user may type immediately; it is not necessary to press restart. The entry point for FLIT is at register 14000.

To inform FLIT of the meaning of your three letter symbols, place your binary symbol tape, which was prepared by MACRO SYMBOL PUNCH, in the PETR and type

table 2

FLIT will then read in your symbol tape 100 registers at a time. After this FLIT is ready for use and will be able to interpret constants and instructions typed either symbolically or numerically or both.

RESUMÉ OF PSUEDOINSTRUCTIONS AND CHARACTER MEANINGS

A. Psuedoinstructions:

*	instructions	type as instructions
	constants	type as constants
	constants a,b	type as instructions except between a and b
*	absolute	type addresses as numbers
	symbolic	type addresses symbolically
	symbolic a,b	type addresses as numbers except between a and b
*	octal	interpret constants as octal
	decimal	interpret constants as decimal
*	unsigned	interpret constants as unsigned
	signed	interpret constants as signed
	clear	clear available memory
	clear a,b	clear from a to b
	clear a,b,w	insert w from a to b
	print a,b	print registers a to b horizontally
	word w	search for w
	word w,a,b	search for w from a to b
	word w,a,b,m	search for w from a to b masked by m
	address l	search for address l
	address l,a,b	search for address l from a to b
	address l,a,b,m	search for address l from a to b, masked by m
	surprise	compare tape with memory
	surprise a,b	compare tape from a to b
	feed	feed six inches blank tape
	input	punch input routine
	punch a,b	punch memory from a to b
	start l	punch start block
	start add l	punch automatic start block
	table	read symbol table tape
	table a,b	read symbols if between a and b
	reset	reset symbol table
	read	read program

read a,b	read program between a and b
begin	start program
begin 1	start program at 1
begin 1, ac	start program at 1 with ACC = ac
begin 1,ac,lr	start at 1 with C(AC) = ac and C(LR) = lr
break bp1,bp2,bp3,bp4	stop when breakpoint is reached
proceed	proceed from last breakpoint
break	erase all breakpoints

* condition of FLIT when read in.

B. Characters:

→|	make modification if register is open
↲	close register, and make modification
←	close register, open next
=	equals as a constant
I	equals as an instruction
D	equals in signed decimal
O	equals in signed octal
o	equals in unsigned decimal
e	equals in unsigned octal
/	register referred to contains the instruction
(	register referred to contains the constant
⊞	plus
+	plus
-	minus
U	unite (logical sum; inclusive or)
A	instersect (logical product; and)
S	distinguish (partial add; exclusive or)
X	times (integer multiply)

F	address of last free register
W	last word typed
L	last register opened
:	is now defined as
"	interpret as decimal
)	interpret as octal
|	open register specified; or allow comment
P	punch register now open upon closure
delete	delete all typing possible
,	separate psuedoinstruction arguments; or define three letter symbol as present register address.