Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge, Massachusetts

SUBJECT: MTC TESTS ON MAGNETIC MEMORY - LOAD AND CHECK PROGRAM FOR ALL ONES OR ZEROES

To: MTC Engineers

From: R. J. Pfaff

Date: May 5, 1953

A program designated MP-1 is attached to this Memorandum. Its purpose is to load every register in magnetic memory with the number stored in Register 37. It then proceeds to cycle through the memory, checking each register against Register 37. Once loading is complete no new information is read into the memory. When a failure occurs, a "one" in the Accumulator will designate the digit that failed and the Memory Address Register will contain the address of the faulty register. This check is exclusive of parity check.

It should be noted that putting the same number in each register will result in each plane containing all "one's" or all "zeroes".

Signed Robert J. Pfaff

Approved Kenneth H. Olsen

RJP:jrt

Attached: Memory Test Programs MP-1 and MP-2 SA-54940

PROGRAM TITLE Memory Test Programs MP-1 and MP-2 WORK SHEET #

SH-547-40

Block [ ] Machine Address

Description: Each core in a plane holds the same information; all 1's or all 0's. Consequently each register holds the same number.

Octal

MP-1

	entry	#	op.	address		Notes
		0				
		1				0.00001
LOADING PROGRAM		2	ca		36	Preset LR
		3	st		5	
		4	ca		37	
	LR	5	st		x	Get next address
		6	ca		5	and see if 1024
		7	ad		1	registers have been
		10	st		5	filled.
		11	su		34	
		12	tn		4	
		13	ca		35	Preset
		14	st		16	LR
CYCLIC CHK PROGRAM		15	ca		37	
	LR	16	id		x	Check
		17	tr		21	Reg. X
		20	ha			
		21	ca		16	Get next address
		22	ad		1	and see if 1024
		23	st		16	registers have been
		24	su		33	checked
		25	tn		15	
		26	tr		13	
		27				
		30				
		31				
		32				
		33	~~id 4000~~			st 0 (=id 4000)
		34	st	40	00	
		35	id	20	00	
		36	st	20	00	
		37	xx	xx	xx	Number to be stored and tested

Note: To check one register, "A", over and over again, make 16 an ordinary register (not LR) and put in "id A".

Block [ ] Machine Address

Description: Loads memory with worst pattern and halts. Change 3 registers and it checks the pattern. DOES NOT CHECK PATTERN IN WORSE MANNER, HOWEVER

Octal

MP-2

entry	#	op.	address		Notes
	0				~~0.00000~~ XXXXX
	1				0.00001
	2	ca		37	Preset
	3	st		23	LR
	4	ca		23	
	5	cr		22	Sense
	6	tn		10	digit 14
	7	ad		34	
	10	cr		4	Sense
	11	tn		13	digit 10
	12	ad		35	
	13	cr		1	Sense
	14	tn		16	digit 9
	15	ad		36	
	16	cr		32	Sense
	17	tn		22	Sum
	20	cs		0	Ca "0" or "1"
	21	tp		23	depending
	22	ca		0	on sum.
LR	23	st		x	[id x]
	24	ca		23	
	25	ad		1	Get next
	26	st		23	address
	27	su		33	and check
	30	tn		4	it.
	31	ha			[tr 2]
	32				
	33	st	40	00	[id 4000]
	34				0.40000
	35				0.02000
	36				0.01000
	37	st	20	00	[id 2000]

Note: To change to checking program, change registers 31, 33, and 37 as indicated in parenthesis.

Reg. 0 is arbitrary except do not use +0 or -0.

SH-547-40

DL-505

PROGRAMMER'S NAME R. Pfaff