IDENTIFICATION: RANDOM WRITE-READ I

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ACCEPTED: February 23, 1961

PURPOSE: To check the read/write circuitry associated with each line of memory.

SPACE: REQUIRED: 52 words occupying sectors 377 through 062 of line 01, plus F00, F01, and F04.

TIMING: Approximately 80 seconds to check lines 02-07 once each.

USE: The entire routine may be loaded by means of the FILL switch on the computer console. Once loading is completed, the program is started by depressing the ENABLE and BREAKPOINT switches, striking the I key, and then raising the same switches. The program will run continuously until an error is detected, at which point the PARITY light will come on, indicating that the computer has halted. The OPERAND lights will indicate the number of the line in which the error occurred. Clearing parity with the ENABLE and BREAKPOINT switches will cause the program to start from the beginning.

METHOD: Random numbers are generated starting with some initial number, K_0. The numbers are stored in sequential memory locations starting with line 02 and ending with line 07. Once the memory is filled, K_0 is brought back and used to generate the same numbers over again. As each number, K_i, is generated, it is compared with its corresponding number generated on the last time through. Any discrepancy will cause an error halt in the line in which the error occurred.

PB 250 PROGRAM LISTING

PROBLEM ____ RANDOM NUMBER WRITE-READ

PROGRAMMER E. R. BORGERS

CATALOG NUMBER 9000

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DATE 2-20-61

LOCATION	INSTRUCTION	SYMBOLIC OP CODE	REMARKS
37701$	002 00001	HLT	ERROR HALT
000	000 0605;	LDB	GENERATE
001	001 0405;	LDC	K_o
002	032 3200;	MUP	K_i
003	023 1401;	ADD	
004	000 1100;	STA	$K_o \longrightarrow$ F00
005	001 1100;	STA	$K_i \longrightarrow$ F01
006	011 0601;	LDB	"WRITE-PHASE" $\longrightarrow$ B
007	010S0501;	LDA	INITIALIZE
010	+0000004		INDEX
011	200 1137;	STA	02 $\longrightarrow$ I
012	016 3601;	TBN	TEST PHASE
013	014S0501;	LDA	"READ-PHASE"
014	177 56001		PRESTORE
015	020S3701;	TRU	CAM
016	017S0501;	LDA	"WRITE-PHASE"
017	177 11001		PRESTORE
020	027 1101;	STA	STA
021	004 1200;	STB	PHASE CONSTANT $\longrightarrow$ F04
022	023S0401;	LDC	
023	+2304555		
024	001 0600;	LDB	$CK_i \longrightarrow K_i$
025	054 3200;	MUP	
026	001 1200;	STB	
027	+0000000		CAM IF READ; STA IF WRITE
030	004 0600;	LDB	TEST PHASE
031	034 3601;	TBN	
032	034 7501;	TOF	TEST READ ERROR
033	377S3701;	TRU	$\longrightarrow$ ERROR HALT
034	027 0501;	LDA	
035	036S1401;	ADD	INCREMENT SECTOR
036	377 0000;		

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PROGRAMMER E. R. BORGERS DATE 2-20-61

LOCATION	INSTRUCTION	SYMBOLIC OP CODE	REMARKS
037	027 1101;	STA	
040	042 7501;	TOF	TEST LINE COMPLETE
041	021S3701;	TRU	NOT COMPLETE
042	000 0537;	LDA	
043	044 14011	ADD	
044	+0000002		
045	000 1137;	STA	COMPLETE : INCREMENT INDEX
046	047S5601;	CAM	
047	+0004320		
050	052 7501;	TOF	TEST PHASE COMPLETE
051	012 3701;	TRU	NOT COMPLETE
052	057 3601;	TBN	TEST PHASE
053	001 0500;	LDA	
054	000 1100;	STA	READ; $K_i \longrightarrow K_o$
055	011 0601;	LDB	
056	007S3701;	TRU	
057	000 0500;	LDA	
060	001 1100;	STA	WRITE: $K_o \longrightarrow K_i$
061	047 0601;	LDB	"READ-CONSTANT" $\longrightarrow$ B
062	007S3701;	TRU	

FLOW DIAGRAM
RANDOM WRITE-READ I

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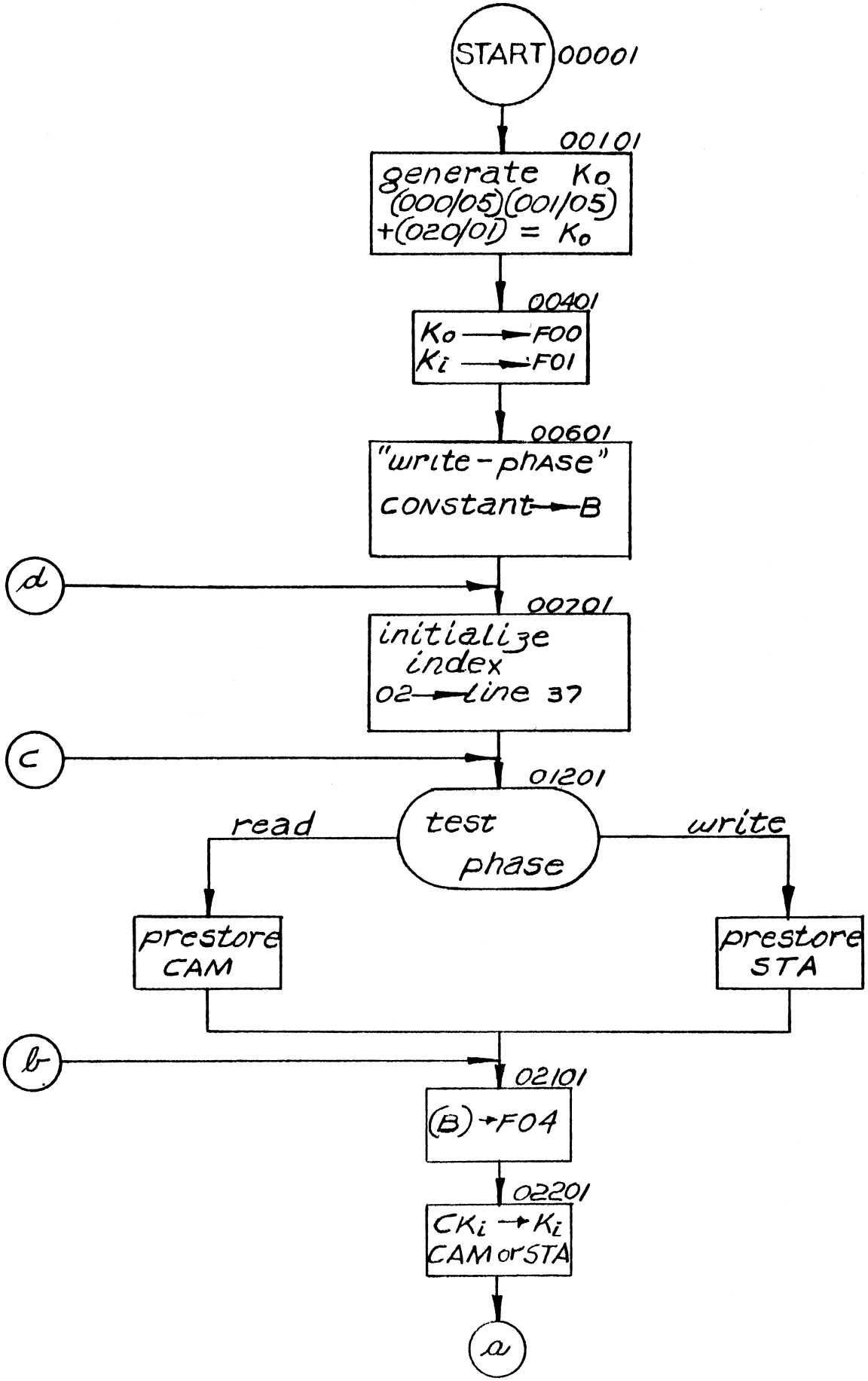

FLOW DIAGRAM
RANDOM WRITE-READ I

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