NO. 2128300
SHEET 0
OF 3

DIAGNOSTIC TEST

TITLE 1620 DATA PROCESSING SYSTEM INDEX AND CONSOLE CHECK-OUT
MACH.TYPE 1620 BY J.H.M. APPR. G.I.A. DATE 4-11-62

ENGINEERING CHANGE HISTORY

E/C NO.	DATE	SHEETS AFFECTED
404530	8-15-60	1, 2
404568	12-15-60	1, 2, 3
404618	5-15-61	1
404675	4-11-62	1, 2, 3
404890-G	9-17-63	1,2,3,4
404980	5-7-64	1,2,3
412514	6-28-64	1

E/C NO.	404530	404568	404618	404675	404890-G	404980	412514
DATE	8-15-60	12-15-60	5-15-61	4-11-62	9-17-63	5-7-64	6-28-64

1620 DATA PROCESSING SYSTEM DIAGNOSTICS

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CU03	Indirect Addressing Feature	1620	2125574	2125573	2125688
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CU05	Special Instructions Feature	1620	2125637	2125638	2125639
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I003	Card I/O Reliability Test	1622	2125682	-	2125683
DT20	Write Addresses	1311-3	2161816	2161817	2161818
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1620 CONSOLE CHECK OUT

Loading a routine requires proper console and computer unit operation. A quick check of the console operations prior to running the diagnostic tests can be made and is desirable. A suggested procedure for the check out of the console will be given later. The proper execution of these instructions will indicate that valid information can be stored into memory and then read out, that portions of MARS are functioning, and that the console is operating correctly.

To load information into the memory from an input device, it is necessary to execute a read operation (36 or 37). For 1621 input, this operation must be written into memory from the typewriter keyboard. For 1622 I/O, this operation is accomplished by pressing the 1622 load key. The input device must then be placed in a ready condition and the read operation executed. Thus the necessity to check the console.

The console operations to be checked are: Reset, Insert, Release, Read Numeric from Typewriter, Read Alpha from Typewriter, Save, Write Numeric with Typewriter, Write Alpha with Typewriter, Display MARS.

The console check out will consist of keying in a set of instructions, one of which will cause the keyed in information to be typed out. (This will be a check of the read and write numeric information.) A branch operation will then be executed. The instruction branched to will be a halt command. Depression of the Save key will then cause the contents of IR-1 to be stored in PR-1 without replacing the information in IR-1. (IR-1 is now blank.)

The operation of Display MAR can now be checked by setting the indicator switch to the desired register and depressing the Display MAR switch. To continue, insert the instruction branch to 11112. Release and Start. The machine will stop, calling for a Read Alpha from the keyboard. Key in the alphabet, followed by a record mark. Then Release and Start. The alphabet will then be typed out, the branch branch back instruction executed and the machine will halt with 11123 in MAR.

SUGGESTED CONSOLE CHECK PROCEDURE

1. Reset (Do not reset again during this check procedure)

2. Insert

3. Key in
   38 00000 00100
   31 11100 00036
   49 11100 00000
   48 04444 02222
   37 05555 00100
   39 05555 00100
   42 00084 00000 ≠ (MAR should read 00084)

4. Release and Carriage return

5. Start. The data keyed in should be typed out. (All but record mark). The instructions ~~BR~~, ~~48~~, H~~4~~WA, BB should be transferred to memory positions 11100 and up. The program should HALT, and the MANUAL light turned on. The following readings should be noted: MAR-11111, MBR-22, MDR-2, DR-22, OP-48, and Sense and Branch CC on machines prior to E suffix; MAR-11111, MBR-22, MDR-2, OP-48, and Digit and Branch-22 on E suffix and later machines.

6. SAVE. MAR should read 11112.

7. Check display MARS (CE SW 9 Must be on, see note)
IR-1 blank MARS check light will come on when this register is displayed.
OR-1 C2222
OR-2 C4444
OR-3 C4444
PR-1 11112

8. Insert

9. Key In 49 11112 00000

10. Release

11. Start. The machine will stop; call for a Read Alpha from the keyboard.

12. Key in the alphabet followed by a Record Mark.

13. Release

14. Start. The alphabet will be typed out, the program will Branch Back to 11112, and stop with a call for Read Alpha from the keyboard. The save light should have been turned off. MAR will read 11123.

The machine having performed these operations properly, the check-out of the 1620 can be continued with CU01 and CU02 with a degree of confidence that data can be written into and read out of memory.

Note: 1. With CE SW 9 on, the CE remote Start key must be used.
2. On A suffix machines there is no CE SW 9; set MAR Check SW to "PROGRAM".