

DIAGNOSTIC FUNCTION TEST

REPRODUCTION

LOAD MOVE DIGIT ZONE

A. PURPOSE

- 1. TO TEST A LOAD OP THAT USES FOUR CHARACTER CHAINING.
- 2. TO TEST THE MOVE DIGIT CIRCUITRY.
- 3. TO TEST A MOVE OP THAT USES FOUR CHARACTER CHAINING.
- 4. TO TEST THE MOVE ZONE CIRCUITRY.

B. LOADING PROCEDURES

- 1. PLACE TEST IN 1402 READ HOPPER AND DEPRESS LOAD KEY.
- 2. NO SELECTION DIGIT IS REQUIRED WHEN TEST IS RUN FROM TAPE.

C. PROGRAM CONTROL

1. SENSE SWITCHES

- B. ON TO REPEAT FOR SCOPING  
OFF TO CONTINUE
- C. ON TO PRINT CORRECT RESULTS  
OFF TO CONTINUE
- D. ON TO REPEAT SAME DETAIL CARD  
OFF TO CONTINUE
- E. ON TO STOP ON ERROR  
OFF TO PRINT ERROR

2. COUNTER

A COUNTER (LOCATION 967-970) IS USED TO ALLOW THE PROGRAM TO REPEAT 90 TIMES FOR EACH DETAIL CARD. WHEN SENSE SWITCH C IS ON, ONLY ONE CORRECT PRINTOUT OCCURS PER DETAIL CARD. AN ERROR TEST IS MADE EACH TIME THE PROGRAM IS REPEATED. AN ERROR PRINTOUT OCCURS FOR EACH FAILURE.

D. TEST PROCEDURE

A FIELD (COLUMNS 1-5), B FIELD (COLUMNS 21-25), AND RESULT SHOULD BE FIELD (COLUMNS 41-45) ARE LOADED INTO THE PRINT AREA FOR PRINTING PURPOSES. COLUMN 72 IS USED TO SPECIFY EITHER THE LOAD OR MOVE TESTING WITHIN THE PROGRAM.

- 1. A 'D' IN COLUMN 72 CAUSES A BRANCH TO 515 WHERE A CHAINED LOAD OPERATION (4-CHARACTER INSTRUCTIONS) LOADS A SINGLE CHARACTER INTO SPECIFIC STORAGE LOCATIONS. (THEREBY SETTING UP A MOVE DIGIT PROGRAM)

DATE	2-2-61	5-15-62	3-17-63	10.5.63			
ENG. CHG. NO.	110378	115283	116745	JA-1844			

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PART NO. 451407  
 SHEET 2 OF 7  
 BLOCK NO. 0210C

2. A "Z" IN COLUMN 72 CAUSES A BRANCH TO 545 WHERE A CHAINED MOVE OPERATION (4-CHARACTER INSTRUCTIONS) MOVES ANOTHER SINGLE CHARACTER INTO SPECIFIC STORAGE LOCATIONS (THEREBY SETTING UP A MOVE ZONE PROGRAM)
3. THE MOVE DIGIT PORTION OF THE PROGRAM IS EXECUTED BY MOVING THE DIGITS OF THE A FIELD INTO THE B FIELD. THE RESULT IS THEN COMPARED WITH THE RESULT SHOULD BE FIELD.
4. THE MOVE ZONE PORTION OF THE PROGRAM IS EXECUTED BY MOVING THE ZONES OF THE A FIELD INTO THE B FIELD. THE RESULT IS THEN COMPARED WITH THE RESULT SHOULD BE FIELD.

CARDS HAVING A "D" IN COLUMN 72 CHECK TWO OPERATIONS: (1) LOAD, AND (2) MOVE DIGIT  
 CARDS HAVING A "Z" IN COLUMN 72 CHECK TWO OPERATIONS: (3) MOVE, AND (4) MOVE ZONE.

E. STOPS

515 IN STORAGE ADDRESS REGISTER: WRONG DETAIL CARDS OR A FAILURE IN TEST CHARACTER AND BRANCH CIRCUITRY  
 920 IN STORAGE ADDRESS REGISTER: ERROR WITH SENSE E ON

F. PRINTOUTS

1. CORRECT

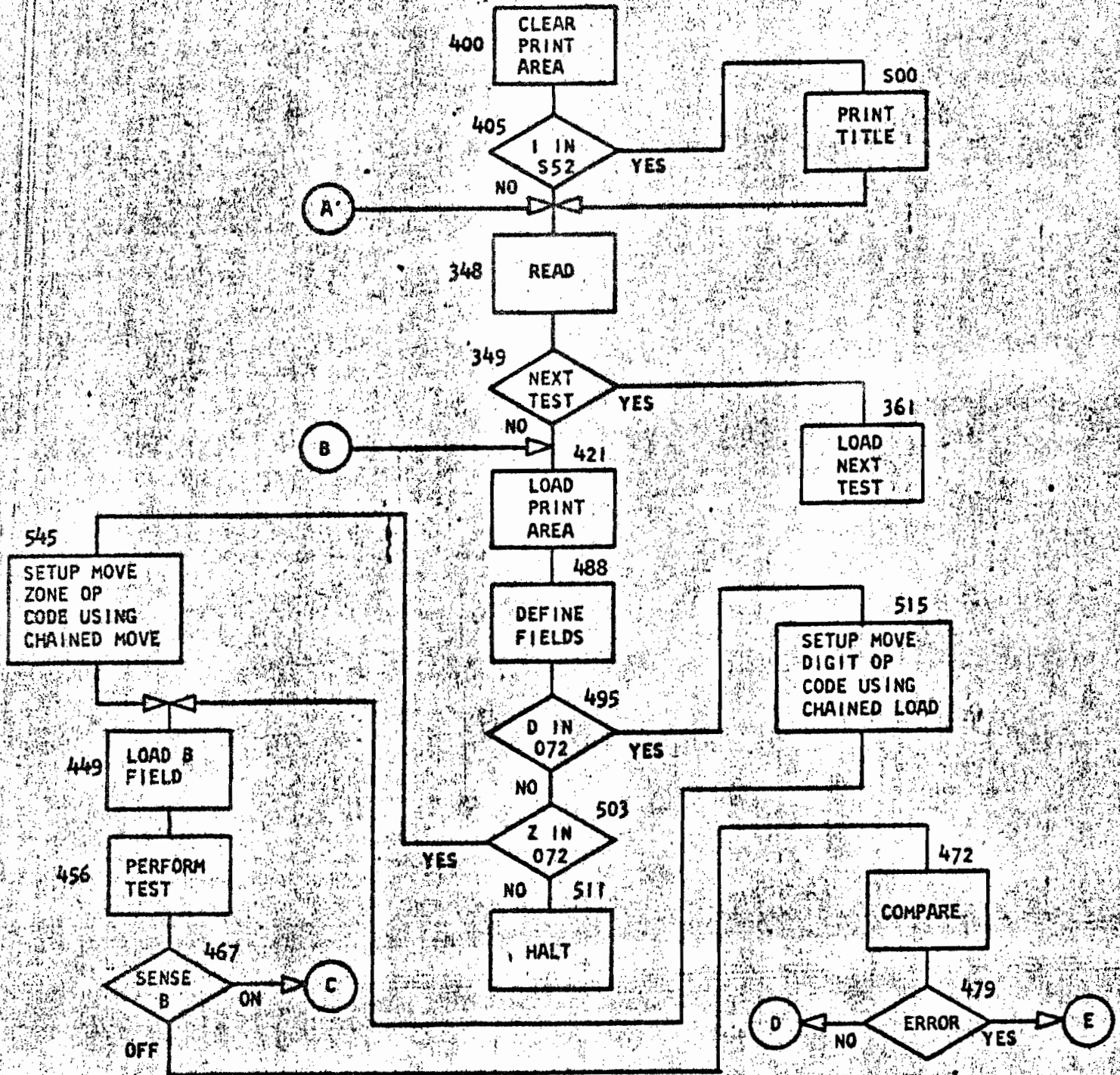
A FIELD	B FIELD	RESULT SHOULD BE	RESULT IS
12345	67890	12345	12345 D
88888	-----	-----	----- D
5678	AKT4	E0X8	E0X8 D
1234	E0X8	AKT4	AKT4 D
12345	67890	67890	67890 Z
88888	-----	88888	88888 Z
AKT4	5678	E0X8	E0X8 Z
5678	AKT4	1234	1234 Z

G. COMMENTS

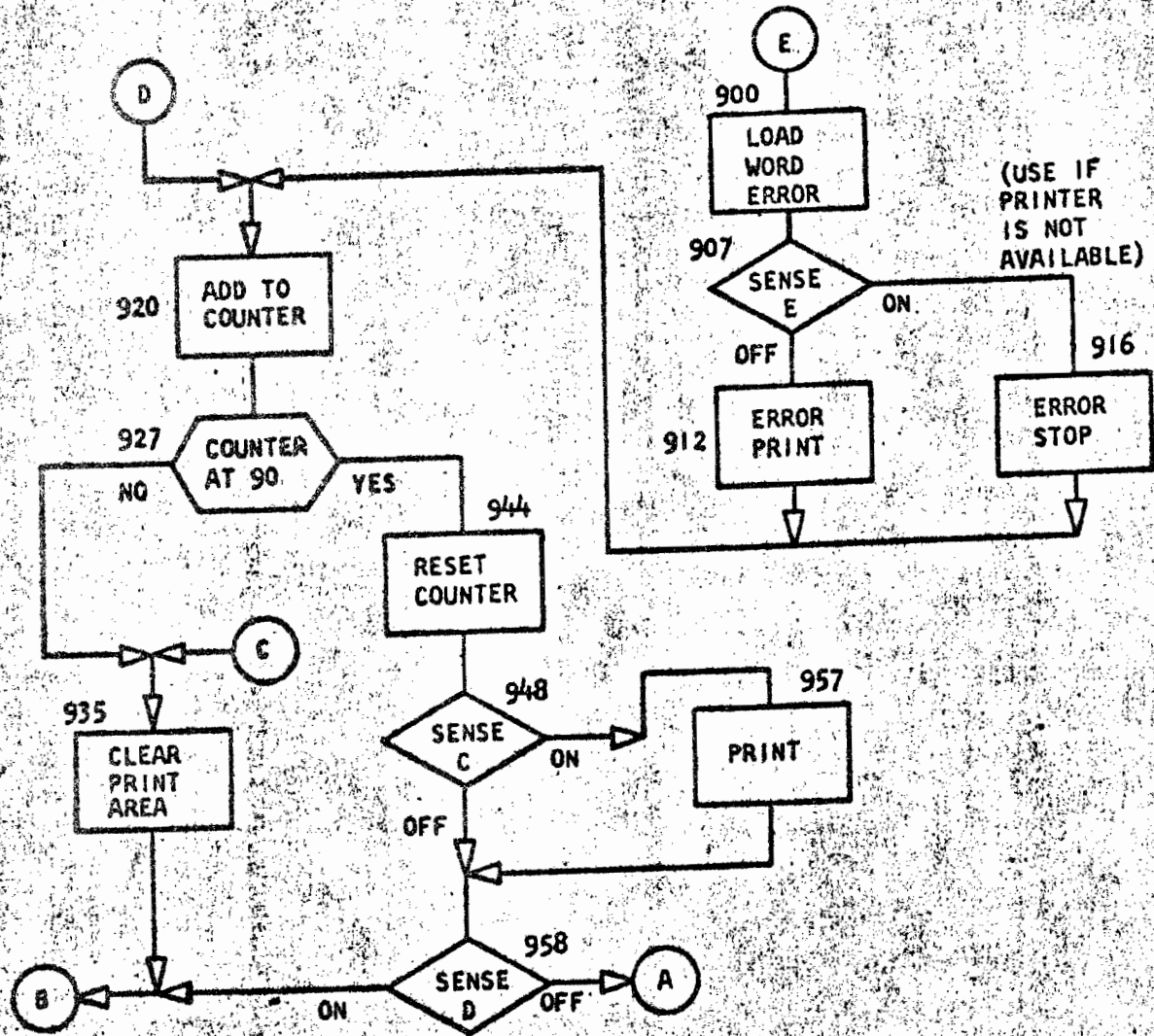
THE BRANCH INSTRUCTION AT LOCATION 927 CAN BE CHANGED MANUALLY TO CAUSE THE PROGRAM TO LOOP AS FEW AS 1 OR AS MANY AS 9,000 TIMES PER DETAIL CARD. THE PROGRAM CALLS FOR 90 LOOPS PER CARD.

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LOAD MOVE DIGIT ZONE  
 FLOW CHART



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1401 DATA PROCESSING SYSTEM  
DIAGNOSTIC FUNCTION TEST

PART NO. 451407  
SHEET 5 OF 7  
BLOCK NO. 0210C

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PROGRAM LISTING FOR USE WITH FLOW CHART

LOAD MOVE DIGIT ZONE 0210C

INSTRUCTION ADDRESS	OP	A	B	REMARKS
377	377	B	389	USE WHEN TESTS ARE RUN FROM TAPE
385	385	B	S88	..
389	389	N	000	..
393	393	M	360 392	..
400	400	/	332	START TEST
404	404	/		..
405	405	B	500 S521	BR TO TITLE PRINT ROUTINE IF 1 IN S52
413	413	/	080	CLEAR READ AREA
417	417	B	348	BRANCH TO PROGRAM CHAINING ROUTINE
421	421	.	001 078	LOAD PRINT AREA
428	428	L	080 299	..
435	435	L	072 272	..
442	442	B	488	GO TO SETUP
449	449	L	225 265	LOAD B FIELD
456	456	D	205 265	EXECUTE MOVE DIGIT OR MOVE ZONE
463	463	N		..
464	464	N		..
465	465	N		..
466	466	N		..
467	467	B	935 B	LOOP ON SW B SS
472	472	C	265 245	COMPARE B FIELD TO CORRECT RESULT
479	479	B	900 /	BRANCH ERROR
484	484	B	920	GO TO CORRECT ROUTINE
488	488	.	221 241	DEFINE B FIELD + COMPARE FIELD
495	495	B	515 0720	SETUP MOVE DIGIT OP CODE
503	503	B	545 0722	SETUP MOVE ZONE OP CODE
511	511	.	511	NEITHER — WRONG DETAIL CARDS
515	515	L	971 466	LOAD OP CODE
522	522	L	971	..
526	526	L	971	..
530	530	L	971	..
534	534	L	971 456	..
541	541	B	449	GO EXECUTE MOVE DIGIT
545	545	M	972 466	MOVE OP CODE
552	552	M	972	..
556	556	M	972	..
560	560	M	972	..
564	564	M	972 456	..
571	571	B	449	GO EXECUTE MOVE ZONE
900	900	L	/14 285	BEGIN ERROR PRINT ROUTINE
907	907	B	916 E	E ON TO ERROR STOP SS
912	912	Z	920	ERROR PRINT

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916 916 . 920  
 920 920 A 920 970  
 927 927 B 944 9699  
 935 935 / 332  
 939 939 /  
 940 940 B 421  
 944 944 S 970  
 948 948 B 957 C  
 953 953 B 958  
 957 957 2  
 958 958 B 421 D  
 963 963 B 348  
 967 967 O 00+  
 971 971 D  
 972 972 Y  
 1110 /10 E RRO R  
 1115 /15  
 1120 /20 A FI ELD  
 1140 /40 B FI ELD  
 1160 /60 R ESU LT SHOULD BE  
 1180 /80 R ESU LT IS

ERROR STOP  
 ADD ONE TO OPERATION COUNTER  
 BRANCH AFTER 90 OPERATIONS C-FOR TA  
 CLEAR PRINT AREA  
 ..  
 BRANCH TO REPEAT  
 RESET OPERATION COUNTER  
 C ON FOR CORRECT PRINT SS  
 BRANCH TO SENSE D  
 PRINT CORRECT RESULTS  
 D ON TO REPEAT SS  
 BRANCH TO PROG. CHAINING ROUTINE  
 OPERATION COUNTER  
 MOVE DIGIT OP CODE  
 MOVE ZONE OP CODE  
 CONSTANTS  
 ..  
 ..  
 ..  
 ..  
 ..

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TABLE OF UNPRINTABLE CHARACTERS

LP-LEFT PARENTHESIS	12 5 8	SE-SEMICOLON	11 6 8	DE-DELTA	11 7 8
WS-WORD SEPARATOR	0 5 8	LT-LESS THAN	12 6 8	PZ-PLUS ZERO	12 0
TS-TAPE SEGMENT MARK	0 7 8	GT-GREATER THAN	6 8	TM-TAPE MARK	7 8
GM-GROUP MARK	12 7 8	MZ-MINUS ZERO	11 0	CO-COLON	5 8
RP-RIGHT PARENTHESIS	11 5 8	AP-APOSTROPHE	0 6 8		

,008015,022029,033033N	1001	LOAD MOVE DIGIT ZONE	0210C00A
,008015,022029,033033N	1001	SET WORDMARK CARD	0210C 02
L067367,340344,348349,3573611001,008012,001100118361080A8421/340080			0210C 03
L069404,377385,389393,4004041001	B389	BS88N000M360392/332/	0210C 04
L069441,413417,421428,435442100185005521/080B348,001078L080299L072272			0210C 05
L057466,449456,463464,4654661001B488	L225265D205265NNNN		0210C 06
L068502,472479,484488,4954951001B9358C265245B900/8920,221241B515072D			0210C 07
L070540,511515,522526,5305341001B5450722.511L971466L971L971L971L971456			0210C 08
L067575,545552,556560,5645711001B449M972466M972M972M972M9724568449			0210C 09
L071938,907912,916920,9279351001L/142858916E2920.920A920970B9449699/332			0210C 10
L056962,940944,948953,9579581001/B421S9708957C89582B421D			0210C 11
L042972,967971,972972,9729721001B348000PDY			0210C 12
Z			
L065/39□/07/07,/10/15,/20/401001	ERROR	A FIELD	0210C 13
L072/79,/60/80,/80/80,/80/801001B	FIELD	RESULT SHOULD BE	0210C 14
L070S17,S00S01,S05S12,S13S171001	RESULT IS	2,049L0772772/2772	0210C 15
L059S44,S25S29,S36S37,S41S451001□/40/60□/80L/892702/2702413			0210C 16
/333080N		CLEAR WORDMARK CARD	0210C 17
.019027,031,038042B031T98GB400L046352BW04BS88		LOAD MOVE DIGIT ZONE	0210C 18

DETAIL CARDS

12345	67890	12345	00210C 19
67890	12345	67890	00210C 20
+++++	-----	-----	00210C 21
AKT4	5678	+++++	00210C 22
EOX8	1234	1234	00210C 23
9#8□	6789	5678	00210C 24
5678	AKT4	90#3	00210C 25
1234	EOX8	EOX8	00210C 26
12345	67890	AKT4	00210C 27
67890	12345	67890	00210C 28
+++++	-----	12345	00210C 29
AKT4	5678	+++++	00210C 30
EOX8	1234	-----	00210C 31
9#8□	6789	EOX8	00210C 32
5678	AKT4	AKT4	00210C 33
1234	EOX8	6XQI	00210C 34
		1234	00210C 35
		5678	00210C 36

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