



DIAGNOSTIC FUNCTION TEST

INTRODUCTION

REPRODUCTION

PACKED DECK FORMAT

ALL DECKS PRESENTLY USE PACKED (MORE THAN ONE INSTRUCTION PER CARD), CHAINING AND TITLE PRINT CARDS AS WELL AS PACKED TRAILER CARDS. NEW AND REVISED DECKS FOR FUTURE RELEASES USE PACKED INSTRUCTION CARDS TO REDUCE THE CARD VOLUME. ALL OF THE PROGRAM IS PACKED. ONLY THE TITLE CARD AND THE TRAILER CARD REMAIN SEPARATE.

IN ORDER TO MAKE THE TRANSITION FROM THE TITLE CARD TO THE PACKED DECK AND BACK AGAIN FROM THE PACKED DECK TO THE TRAILER CARD, TWO TRANSITION CARDS ARE USED.

1. ONE, A SET WM CARD, IS PLACED BETWEEN THE TITLE CARD AND THE PACKED DECK.
2. ANOTHER, A CLEAR WM CARD, IS PLACED BETWEEN THE PACKED DECK AND THE TRAILER CARD.

DETAIL CARDS REMAIN UNCHANGED.

EXAMPLES OF SET WM, PACKED, AND CLEAR WM CARDS ARE GIVEN LATER.

THE NEW TEST DESCRIPTIONS HAVE THREE CHANGES IN FORMAT.

1. AN INSTRUCTION LISTING GIVES EACH INSTRUCTION WITH APPROPRIATE COMMENTS. THIS INCLUDES

INSTR	OP	I/A	B	ANY	
ADDRESS	CODE	ADDRESS	ADDRESS	COMMENTS	

 THIS IS SIMILAR TO THE OLD ONE INSTRUCTION PER CARD LISTING
2. AN 80 COLUMN LISTING OF THE CARD DECK WHICH INCLUDES.
 - A. TITLE CARD
 - B. SET WM CARD
 - C. PACKED CARDS
 - D. CLEAR WM CARD
 - E. TRAILER CARD
 - F. DETAIL CARDS. IF ANY.
3. A TABLE OF UNPRINTABLE CHARACTERS WHICH PRECEDES THE LISTING OF THE PACKED CARDS ABOVE.

ANY UNPRINTABLE CHARACTERS IN THE 80 COLUMN LISTING WILL PRINT AN IDENTIFYING SYMBOL OF TWO CHARACTERS. THE FIRST CHARACTER WILL BE ON THE LISTING LINE. THE SECOND CHARACTER WILL BE UNDERNEATH THE FIRST ON THE FOLLOWING LINE.

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		

EXAMPLE. .019027,031.038042B031T98GB400L046352BW048S88

M

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REPRODUCTION

PACKED CARD

THE PACKED CARDS ARE LAYED OUT AS SHOWN IN THE FOLLOWING EXAMPLE

COLUMNS

0 1 2 3 4 5 6 7 8
 1234567890123456789012345678901234567890123456789012345678901234567890

L072121,001001,001001,001001001INITIAL ERROR LATCHES FAILED OR CARRIAGEXXXXXX 03
 L067156122122,141148,1531571001 DID NOT GO TO FOURM1402998157EB#01 XXXXX 04
 L036160,161161,161161,1611611001.#07 XXXXX 05
 L067367,340344,348349,3573611001,008012,00110011B361080AB421/340080 XXXXX 06

- COLS. 1- 7 LOAD INSTRUCTION FOR CARD COLUMNS 33 THROUGH 72
- COLS. 8-14 SET WM INSTRUCTION OR CLEAR WM INSTRUCTION
- COLS. 15-21 SET WM INSTRUCTION
- COLS. 22-28 SET WM INSTRUCTION
- COLS. 29-32 CARD FEED INSTRUCTION WHEN LOADING FROM CARDS
- COLS. 33-72 INSTRUCTIONS OR PRINT OUT COMMENTS OR CONSTANTS FOR PROGRAM
- COLS. 73-76 BLOCK NUMBER
- COLS. 77 BLOCK NUMBER SUFFIX
- COLS. 78-80 CONSECUTIVE CARD DECK NUMBER

THE PACKED CARD CONTAINS A MAXIMUM 7 INSTRUCTIONS OR 40 CHARACTERS, WHICHEVER OCCURS FIRST. IF THE LAST WM WAS ENCOUNTERED MORE THAN 9 COLUMNS BEFORE COLUMN 72 OF THE CARD AND IF 7 INSTRUCTIONS HAD NOT BEEN ENTERED, THE INFORMATION IS TAKEN AS A COMMENT. THE 40 COLUMNS ARE PACKED. THE NEXT CARD CLEARS THE WM SET BY ITS LOAD INSTRUCTION, AND THE MAXIMUM NUMBER OF INSTRUCTIONS THAT CAN BE PACKED IN THIS NEXT CARD IS REDUCED TO FOUR.

IN COLUMNS 8 THROUGH 28 OF THE PACKED CARD, THE SET WM INSTRUCTIONS GIVE WM LOCATIONS IN STORAGE. IN ADDITION, THE LEFT END OF THE LOAD ADDRESS SETS A WM WHOSE STORAGE ADDRESS IS B - A PLUS 33, WHERE A AND B REPRESENT THE FIELDS OF THE LOAD ADDRESS IN COLUMNS 1 THROUGH 7 OF THE PACKED INSTRUCTION CARD. TO FIND THE CARD IN WHICH AN INSTRUCTION IS LOCATED, FIND THE WM LOCATION OF THE INSTRUCTION IN THE PACKED CARDS. THEN CHECK THE B FIELD OF THE LOAD ADDRESS OF THIS CARD AND OF THE FOLLOWING CARD TO FIND WHICH ONE CONTAINS THE INSTRUCTION. FINALLY, LOCATE THE INSTRUCTION BETWEEN COLUMNS 32 AND 73.

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REPRODUCTION

FORMAT OF TEST DESCRIPTIONS

- A. PURPOSE OF TEST.
- B. LOADING PROCEDURES.
- C. PROGRAM CONTROL.
- D. TEST PROCEDURE.
- E. STOPS.
- F. PRINTOUTS.
- G. COMMENTS.

THE WRITE-UP INCLUDES A FLOW CHART, A LIST OF PROGRAM INSTRUCTIONS, AND A LISTING OF ALL CARDS. TEST DECKS ARE PROVIDED FOR CARD SYSTEMS. A TEST TAPE IS PROVIDED FOR MODEL D SYSTEMS.

SENSE SWITCHES

- B ON LOOPS PORTION OF PROGRAM FOR SCOPING.
- C ON CAUSES CORRECT OPERATION TO PRINT OUT.
- D ON LOOPS ENTIRE PROGRAM
- E ON CAUSES PROGRAM TO HALT ON ERROR.
- F THE USE OF THESE TWO SENSE, SWITCHES
- G VARY WITH DIFFERENT DFT'S.

THE PURPOSE OF A FLOW CHART IS TO DISPLAY IN A GENERAL WAY THE SEQUENTIAL STEPS THAT ARE NECESSARY TO EXECUTE A PROGRAM OF INSTRUCTIONS FOR A GIVEN TEST. ALTHOUGH THE FLOW CHARTS PROVIDED WITH EACH TEST DIFFER IN THE MAIN BODY OF THE PROGRAM, THE PRELIMINARY STEPS PRECEDING THE MAIN BODY AND THOSE THAT FOLLOW ARE ESSENTIALLY ALIKE.

THE GENERAL FLOW CHART DEPICTED HERE IS DESIGNED TO SHOW THOSE STEPS THAT ARE COMMON TO A MAJORITY OF THE FLOW CHARTS, PARTICULARLY THOSE THAT EMPLOY THE TITLE AND HEADING PRINT ROUTINE.

NOTICE THAT AFTER THE MAIN BODY OF THE PROGRAM, STEPS INCLUDE REFERENCE TO SENSE SWITCHES B, C, D, AND E. IF SENSE SWITCHES ARE NOT ON YOUR MACHINE, DISREGARD SEQUENCE FLOWS INDICATED BY THE ON SIDE OF THE SWITCHES.

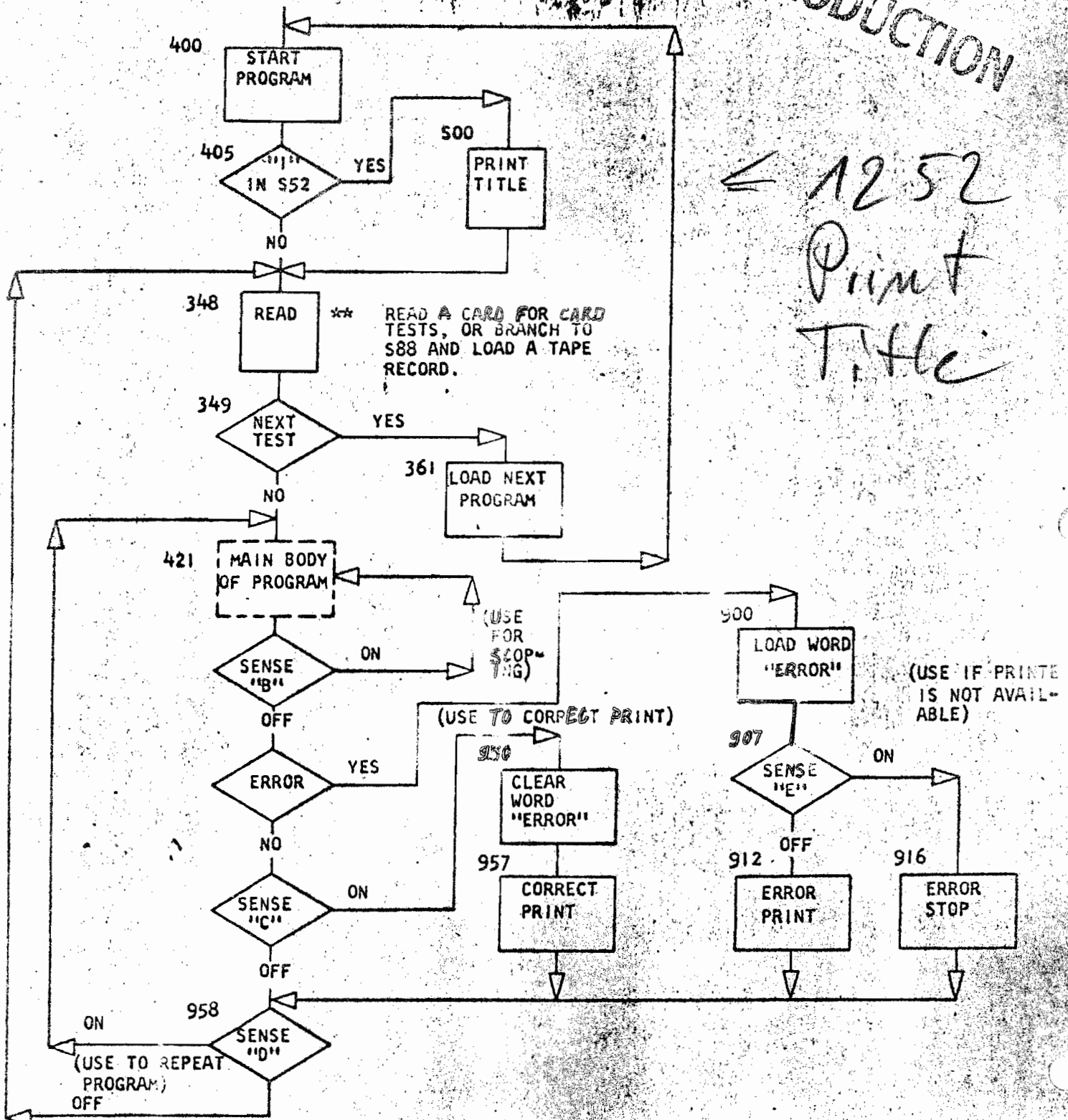
WHEN SENSE SWITCHES ARE USED IN THE PROGRAM AND ARE NOT AVAILABLE IN THE 1401, THESE INSTRUCTIONS MUST BE CHANGED TO UNCONDITIONAL BRANCHES OR ELSE BYPASSED USING A NO-OP.

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GENERAL FLOW CHART

REPRODUCTION

1252
 Print
 Title



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REPRODUCTION

TROUBLE ANALYSIS PROCEDURE

PROGRAM EXECUTION MAY BE STOPPED AT ANY POINT BY USING THE ADDRESS STOP FEATURE.
 NOTE -- INPUT OUTPUT OPERATIONS CANNOT BE STOPPED DURING THE EXECUTE PORTION.

SINGLE CYCLE PROCESS MAY BE USED IN THESE PROGRAMS.

I/E MODE MAY BE USED DURING THE OPERATION OF THESE PROGRAMS.

SCOPING PROCEDURE

TWO METHODS ARE PROVIDED IN THE MAJORITY OF TESTS FOR INDICATING ERRORS. BOTH METHODS ARE UNDER THE CONTROL OF SENSE SWITCH E.

1. WHEN THIS SWITCH IS ON, THE MACHINE STOPS FOR ANY DETAIL CARD PROCESSED IN ERROR.
2. WHEN THIS SWITCH IS OFF, THE MACHINE PRINTS THE ERROR RESULT AND CONTINUES WITH OUT INTERRUPTION.

IN THE FIRST CASE, THE CARD PROCESSED IN ERROR MAY BE RE-PROCESSED INDEFINITELY BY SETTING SENSE SWITCHES B AND D TO THE ON POSITION AND PRESSING THE START KEY.

1. SENSE SWITCH D BRANCHES TO THE MAIN BODY OF THE PROGRAM.
2. SENSE SWITCH B EXECUTES THE MAIN OPERATION TESTED IN THE PROGRAM IN A TIGHT LOOP REPEATEDLY.

IN THE SECOND CASE, BECAUSE THE MACHINE CONTINUES WITHOUT INTERRUPTION AFTER AN ERROR IS DETECTED, THE FOLLOWING PROCEDURE IS RECOMMENDED.

1. STOP THE MACHINE MANUALLY.
2. SET SENSE SWITCHES B AND D TO THE ON POSITION.
3. REMOVE CARDS FROM THE HOPPER AND PERFORM A NON-PROCESS RUN-OUT TO CLEAR THE FEED.
4. REMOVE CARDS FOR THE BLOCK BEING TESTED FROM THE STACKER.
5. IF THE PROGRAM FOR THE ERROR CARD IS STILL IN STORAGE, REPLACE THE ERROR CARD IN THE HOPPER. PRESS THE START KEY.
6. IF THE PROGRAM FOR THE ERROR CARD IS NOT IN THE MACHINE, PLACE INSTRUCTION CARDS IN FRONT OF THE ERROR CARD, AND RE-RUN BY PRESSING THE LOAD KEY. IT MAY BE NECESSARY TO TURN THE PROCESS CHECK STOP SWITCH OFF IN ORDER TO KEEP THE PROGRAM RUNNING FOR SCOPING.

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CARD READ ADDER

THE TESTS CANNOT BE RUN FROM CARDS IF THE ADDER CIRCUITRY IS NOT OPERATING PROPERLY. IF TROUBLE IS EXPERIENCED IN READING CARDS, TEST THE ADDER MANUALLY.

- BY USE OF THE CONSOLE, SET UP THE FOLLOWING CONSTANTS IN THE LOCATIONS INDICATED

LOCATIONS CONSTANTS	219	220	221	222	332	333
C-BIT		X	X	X	X	X
B-BIT						
A-BIT					X	
8-BIT	X	X		X	X	X
4-BIT						
2-BIT		X		X	X	X
1-BIT	X		X			
WORD MARK	X		X		X	

- MANUALLY SET UP THE FOLLOWING INSTRUCTIONS

INST.	INSTRUCTION	ADDR.	OP	A	B	REMARKS	RESULTS IN LOCATIONS																
							110								111								
							C	B	A	8	4	2	1	M	C	B	A	8	4	2	1	M	
400	L	220	111	LOAD 90 INTO	90					X				X	X	X		X				X	
407	S	222	111	SUBTRACT 10	80	X				X				X	X	X	X	X	X	X	X	X	X
414	S	222	111	SUBTRACT 10	70	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
421	S	222	111	SUBTRACT 10	60					X	X			X	X	X	X	X	X	X	X	X	X
428	S	222	111	SUBTRACT 10	50					X		X		X	X	X	X	X	X	X	X	X	X
435	S	222	111	SUBTRACT 10	40	X				X				X	X	X	X	X	X	X	X	X	X
442	S	222	111	SUBTRACT 10	30						X	X		X	X	X	X	X	X	X	X	X	X
449	S	222	111	SUBTRACT 10	20	X					X			X	X	X	X	X	X	X	X	X	X
456	S	222	111	SUBTRACT 10	10	X						X		X	X	X	X	X	X	X	X	X	X
463	S	222	111	SUBTRACT 10	00					X				X	X	X	X	X	X	X	X	X	X
470	A	333	111	ADD 0 TO	0	X		X	X	X				X	X	X	X	X	X	X	X	X	X
477	A	333	111	ADD 0 TO	0	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X
484	A	333	111	ADD 0 TO	0		X	X	X	X				X	X	X	X	X	X	X	X	X	X
491	.	400		STOP AND BRANCH	0		X	X	X	X				X	X	X	X	X	X	X	X	X	X
495				WORD MARK																			

- EXECUTE THE PROGRAM.
TO CHECK RESULTS IN LOCATIONS 110 AND 111 AFTER EACH INSTRUCTION IS EXECUTED, SET MODE SWITCH TO SINGLE CYCLE PROCESS, OR SET TO I/E, OR SET TO ADDRESS STOP.
- TO SCOPE ROUTINE, MANUALLY ENTER BRANCH OP IN LOCATION 491, SET PROCESS CHECK SWITCH TO OFF, AND LOOP PROGRAM.

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TITLE CARD

EXAMPLE

COLUMNS	0	1	2	3	4	5	6	7	8
	1	2	3	4	5	6	7	8	9
	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8
	0	1	2	3	4	5	6	7	8
	0	1	2	3	4	5	6	7	8
	0	1	2	3	4	5	6	7	8
	0	1	2	3	4	5	6	7	8

,008015,022029,033033N 1001 DIVIDE 32108 OA

THIS CARD HAS THREE FUNCTIONS

- 1. WHEN THE DECK IS RUN SEPARATELY, IT SETS WORDMARKS SO THAT THE FEED AND BRANCH INSTRUCTION, 1001, IN THIS CARD WILL CAUSE THE NEXT CARD TO FEED AND THE PROGRAM TO GO TO 001.
- 2. WHEN TESTS ARE RUN CONSECUTIVELY -- CHAINED --, THE A IN COLUMN 80 WILL BE RECOGNIZED BY THE CHAINING ROUTINE OF THE PREVIOUS TEST AS SOON AS THAT TEST HAS ENDED AND ITS PROGRAM BRANCHES TO 348. THE A WILL CAUSE A BRANCH IN THE CHAINING ROUTINE SO THAT THE READ-IN AREA IS CLEARED, A WM IS SET IN 001, A CARD IS FED, AND THE PROGRAM BRANCHES TO 001. THE CARD FED WILL BE THE SECOND CARD OF THE DECK -- THE FIRST CHAINING CARD.
- 3. WHEN THE DECK IS READ FROM TAPE, THE A IN LOCATION 080 PREVENTS A BRANCH TO 377 AND CAUSES THE NEXT RECORD TO READ IN. TESTS ON TAPE START IN 377. THUS THE TITLE CARD IS NOT TREATED AS A DETAIL CARD OF THE PREVIOUS TEST. THE NEXT TEST, CORRESPONDING TO THE TITLE CARD, IS READ INTO STORAGE.

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PART NO. 451398
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BLOCK NO.

REPRODUCTION

CHAINING ROUTINE

EXAMPLE

COLUMNS	0	1	2	3	4	5	6	7	8
	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
	L067367	,340344	,348349	,357361	1001,0080	12,00110011	B361080	AB421/340080	32108 03

THE INFORMATION IS PLACED IN STORAGE AS FOLLOWS

STORAGE LOCATION	3	3	3	3	3	3	3	4	4
	3	4	5	6	7	8	9	0	1
	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
	,008012,00110011B361080AB421/340080								

THIS ROUTINE HAS THREE FUNCTIONS:

1. IT CAUSES THE SECOND CARD IN THIS TEST TO FEED.
2. IT CAUSES DETAIL CARDS FOR THIS TEST TO FEED.
3. IT CAUSES THE TITLE CARD FOR THE NEXT TEST TO FEED.

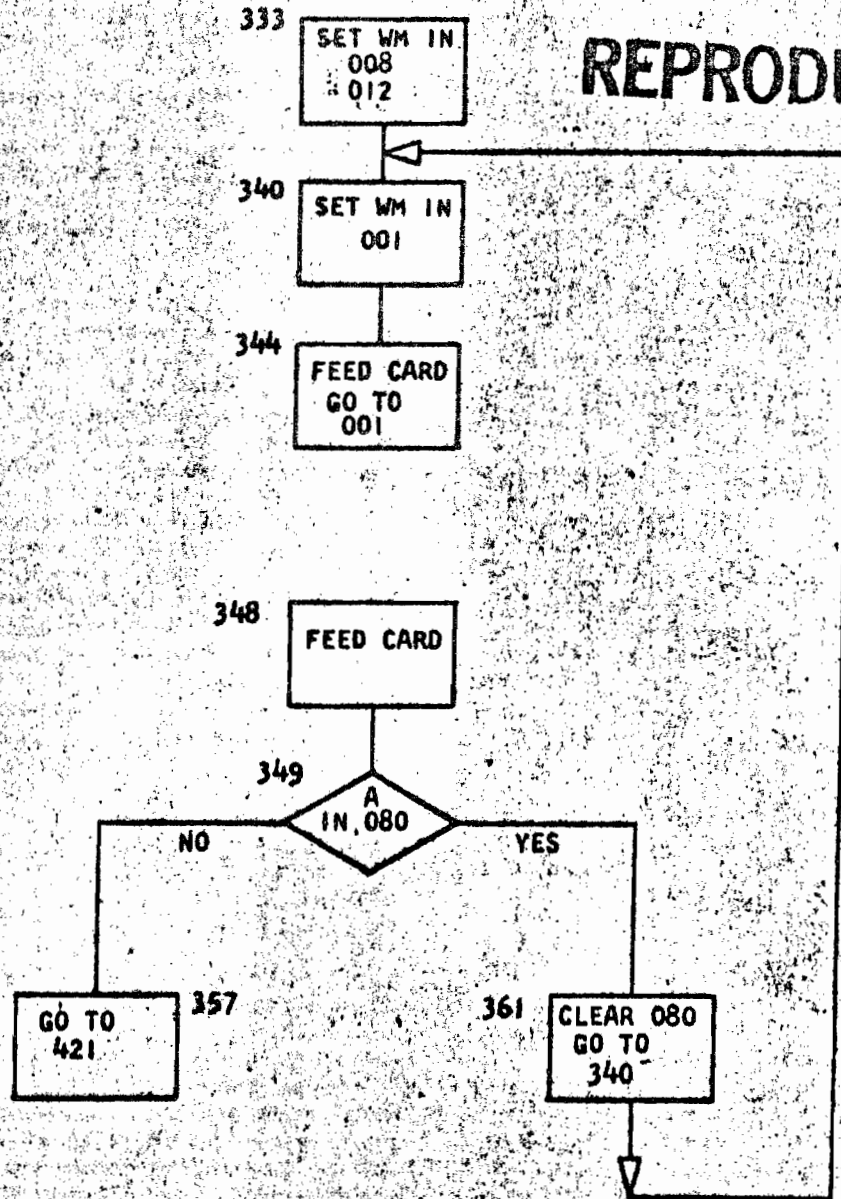
ANY CARD THAT DOES NOT FEED BECAUSE OF THE CHAINING ROUTINE IS FED BECAUSE OF THE FEED AND BRANCH ROUTINE. 1001, THAT IS PUNCHED IN THE CARD JUST AHEAD OF IT IN THE DECK.

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DIAGNOSTIC FUNCTION TEST

CHAINING ROUTINE FLOW CHART

REPRODUCTION



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TITLE PRINT ROUTINE

EXAMPLE

REPRODUCTION

COLUMNS	1	2	3	4	5	6	7	8
0	1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
L070517, S00501, S05312, S13517100	RESULTS IS						2, 049L0772772/2772	32108 16
L062547, S25529, S36537, S41545100	/40/60 /80L/892702/2702413							32108 17

THE INFORMATION IS PLACED IN STORAGE AS FOLLOWS

STORAGE LOCATION

/	S	S	S	S	S	S	S	S
9	0	1	2	3	4	5	6	7
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

2, 049L0772772/2772=040/60=80L/892702/2702413
 11 1 11 11 1 1 11 1 1

THIS ROUTINE HAS THREE FUNCTIONS

1. IT CAUSES THE HEADING INFORMATION FROM THE TRAILER CARD TO BE PRINTED.
2. IT CAUSES THE COLUMNS -- RESULTS ARE, RESULTS SHOULD BE -- TO BE PRINTED IF THIS INFORMATION IS INCLUDED IN THE TEST.
3. IT CAUSES A BRANCH INTO THE MAIN PROGRAM AT 413.

THE BRANCH CHARACTER EQUAL INSTRUCTION THAT TESTS FOR TITLE PRINT, 1 IN S52, IS ADDRESSED AT 405 AND OCCUPIES CORE STORAGE LOCATIONS 405 - 412. SEE PROGRAM INSTRUCTION CARDS.

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CARDS NEEDED FOR TAPE OPERATION

EXAMPLE

REPRODUCTION

COLUMNS

0	1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
L069404	,377385	,389393	,400404	1001	B389558	1B588N000M360392/332/	3210B	04

THE INFORMATION IS PLACED IN STORAGE AS FOLLOWS
STORAGE LOCATION

3	3	3	3	4	4	4	4	4
6	7	8	9	0	1	2	3	4
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

B3895581B588N000M360392/332/

WHEN THE TEST IS RUN, IT WILL BE MODIFIED AS FOLLOWS TO PREVENT MORE THAN ONE TITLE PRINT OUT.

STORAGE LOCATION

3	3	3	3	4	4	4	4	4
6	7	8	9	0	1	2	3	4
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

B3895581B588B421M360392

THIS ROUTINE HAS THREE FUNCTIONS WHEN TESTS ARE RUN FROM TAPE

1. IT ALLOWS THE TEST TAPE OPERATION OF THE TESTS TO START IN 377.
2. IF THE TEST IS NOT SELECTED, BY HAVING THE SELECTION DIGIT ENTERED IN STORAGE, THE BRANCH TO S88 CAUSES THE NEXT RECORD TO READ IN. THIS RECORD WILL BE A TITLE CARD, A TAPE MARK, OR A DETAIL CARD. DETAIL CARDS FOR THE TEST ARE BYPASSED BECAUSE OF THE BRANCH TO S88.
3. IF THE TEST IS SELECTED, THE TITLE CARD IS ALLOWED TO PRINT ONCE. THE TITLE PRINT IS BYPASSED FOR DETAIL RECORDS USED IN THE TEST. DETAIL CARDS ARE USUALLY WRITTEN AS DETAIL RECORDS ON TAPE -- 80 CHARACTERS PER RECORD. AFTER EACH DETAIL RECORD IS READ IN, THE READ TEST TAPE ROUTINE BRANCHES TO 377.

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CARDS NEEDED FOR TAPE OPERATION

EXAMPLE

REPRODUCTION

COLUMNS

0	1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
L069404,	377385,	389393,	400404	1001	B389S58	1BS88N000M360392/332/	32108	04

THE INFORMATION IS PLACED IN STORAGE AS FOLLOWS
STORAGE LOCATION

3	3	3	3	4	4	4	4	4
6	7	8	9	0	1	2	3	4
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

B389S581BS88N000M360392/332/
| | | | |

WHEN THE TEST IS RUN, IT WILL BE MODIFIED AS FOLLOWS TO PREVENT MORE THAN ONE
TITLE PRINT OUT.

STORAGE LOCATION

3	3	3	3	4	4	4	4	4
6	7	8	9	0	1	2	3	4
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

B389S581BS88421M360392
| | | | |

THIS ROUTINE HAS THREE FUNCTIONS WHEN TESTS ARE RUN FROM TAPE

1. IT ALLOWS THE TEST TAPE OPERATION OF THE TESTS TO START IN 377.
2. IF THE TEST IS NOT SELECTED, BY HAVING THE SELECTION DIGIT ENTERED IN STORAGE, THE BRANCH TO S88 CAUSES THE NEXT RECORD TO READ IN. THIS RECORD WILL BE A TITLE CARD, A TAPE MARK, OR A DETAIL CARD. DETAIL CARDS FOR THE TEST ARE BYPASSED BECAUSE OF THE BRANCH TO S88.
3. IF THE TEST IS SELECTED, THE TITLE CARD IS ALLOWED TO PRINT ONCE. THE TITLE PRINT IS BYPASSED FOR DETAIL RECORDS USED IN THE TEST. DETAIL CARDS ARE USUALLY WRITTEN AS DETAIL RECORDS ON TAPE -- 80 CHARACTERS PER RECORD. AFTER EACH DETAIL RECORD IS READ IN, THE READ TEST TAPE ROUTINE BRANCHES TO 377.

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SET WORDMARK CARD

THE SET WM CARD HAS THIS FORMAT.

REPRODUCTION

COLUMNS

0 1 2 3 4 5 6 7 8
1234567890123456789012345678901234567890123456789012345678901234567890

.008015.022029.033033N 1001 SET WORDMARK CARD XXXXX 02

THE SET WM CARD IS NECESSARY ONLY WHEN DECKS ARE CHAINED. AFTER THE TITLE CARD IS READ, THE READ AREA IS CLEARED, A WM IS SET IN COLUMN 1, A CARD IS FED, AND THE PROGRAM BRANCHES TO COLUMN ONE. ALL THIS IS THE RESULT OF THE CHAINING ROUTINE. CONSEQUENTLY, WORD MARKS MUST AGAIN BE SET UP FOR THE PACKED CARDS. THE SET WORDMARK CARD DOES THIS.

CLEAR WORDMARK CARD

THE CLEAR WM CARD HAS THIS FORMAT.

COLUMNS

0 1 2 3 4 5 6 7 8
1234567890123456789012345678901234567890123456789012345678901234567890

/333080N CLEAR WORDMARK CARD XXXXX 36

THIS CARD CAUSES THE READ-IN AREA TO BE CLEARED AND CAUSES A BRANCH TO THE CHAINING ROUTINE. THE CHAINING ROUTINE SETS UP WORD MARKS FOR THE TRAILER CARD AND CAUSES THE TRAILER CARD TO FEED.

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DETAIL CARDS

EXAMPLE NUMBER 1

REPRODUCTION

COLUMNS

0	1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
0		1		+01				3210B 20

EXAMPLE NUMBER 2

COLUMNS

0	1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890

R# I- @ +\$%I+.* /2 XJS3-AKT4 BLU5 CMV6 DNW7 EOX8 FPY9 GQZO HR# I-,@+\$%I+.* /2 X

DETAIL CARDS USUALLY HAVE THE BLOCK NUMBER, SUFFIX, AND CARD SEQUENCE PUNCHED IN COLUMNS 73 THROUGH 80. HOWEVER SOME DETAIL CARDS DO NOT HAVE THIS BECAUSE THEY CONTAIN 80 COLUMNS OF INFORMATION.

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REPRODUCTION

-TEST TAPE PROCEDURE

FOR MAGNETIC TAPE SYSTEMS OTHER THAN MODEL D, CARD DECKS ONLY ARE SUPPLIED, TEST PROGRAMS MAY BE TRANSFERRED TO TAPE BY USE OF WRITE TEST TAPE ROUTINE BLOCK NUMBERS 5300 AND 1T01. HOWEVER, SINCE TRANSFERRING PROGRAMS FROM CARDS TO TAPE, OR COPYING FROM TAPE TO TAPE, REQUIRES AT LEAST A 2K OR 4K PROCESSING UNIT, TAPE SYSTEMS WITH ONLY 1.4K CANNOT PREPARE THEIR OWN TAPE. IN SUCH CASES, PART NUMBER 451270 MAY BE ORDERED FOR NON-OVLP SYSTEMS.

NOTE: 1T01, 1T02, 1T03, 1T05, 1T06 AND 1T07 ARE SUPPLIED WITH ALL CARD SYSTEMS FOR THE CE'S CONVENIENCE.

1. TEST TAPES PREPARED BY THE PLANT FOR NON-OVLP SYSTEMS.

THE TEST TAPE IS WRITTEN IN LOW DENSITY, 200 CHARACTERS PER INCH.

IBM 1401 MODEL D IS A SYSTEM WITHOUT CARD INPUT OR OUTPUT. THEREFORE, CUSTOMER ENGINEERING TESTS FOR MODEL D SYSTEMS MUST BE RUN FROM TAPE. THE TAPE FOR MODEL D SYSTEMS IS SUPPLIED IN LIEU OF CARD DECKS.

THE FIRST RECORD ON THE TAPE IS THE READ TEST TAPE ROUTINE, BLOCK NUMBER 5310. THIS PROGRAM EXECUTES ALL TEST PROGRAMS FROM TAPE USING TAPE DRIVE NUMBER 1. THE TITLE CARD FOR THIS ROUTINE WAS NEVER WRITTEN ON TAPE.

THE SECOND RECORD ON TAPE IS THE TITLE CARD FOR THE COPY TAPE ROUTINE. THE THIRD RECORD IS THE COPY TAPE ROUTINE, BLOCK NUMBER 5320. THIS PROGRAM REQUIRES AT LEAST A 2K PROCESSING UNIT AND IS USED ONLY WHEN IT IS DESIRED TO DUPLICATE THE MASTER TAPE REEL FROM TAPE DRIVE NUMBER 1 TO TAPE DRIVE NUMBER 2. TO EXECUTE THIS PROGRAM, A 1 MUST BE MANUALLY ENTERED IN LOCATION 554, 1254.

THE REST OF THE REEL CONTAINS TITLE CARDS, PROGRAM INSTRUCTIONS, AND DETAIL CARDS FOR ALL TESTS THAT MAY BE RUN ON MAGNETIC TAPE SYSTEMS. THE TITLE AND DETAIL CARDS ARE 80 CHARACTER RECORDS. THE PROGRAM INSTRUCTIONS ARE 1249 CHARACTER RECORDS. FOR THE MOST PART, THE TESTS ARE ON TAPE IN BLOCK NUMBER SEQUENCE. SOME OF THESE TESTS CANNOT BE RUN ON MODEL D SYSTEMS.

ONE TAPE DRIVE IS REQUIRED TO RUN THESE TESTS FROM TAPE.

1. TAPE DRIVE NUMBER 1 TO READ THE MASTER TAPE REEL.
2. TAPE DRIVE NUMBER 4 TO USE AS A WORKING REEL FOR BLOCKS IN THE 5000 SERIES. TWO TAPE DRIVES CAN BE USED TO ADVANTAGE HERE.

TITLE AND HEADING PRINTOUT IS AUTOMATICALLY PROVIDED SINCE A 1 IN 552 WAS INCLUDED IN THE READ TEST TAPE ROUTINE WHEN THE TEST TAPE WAS MADE AT THE PLANT. IF TITLE AND HEADING PRINTOUT IS NOT DESIRED, THE 1 IN 552 MUST BE REMOVED BY USE OF THE ENTER KEY WHEN THE SELECTION DIGITS ARE SETUP.

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REPRODUCTION

- 2. TO WRITE TESTS ON TAPE, REFER TO 5300 OR ITO1 WRITE UP.
- 3. TO RUN TESTS FROM TAPE, REFER TO 5310 OR ITO2 WRITE UP.
- 4. TO COPY TEST TAPES, REFER TO 5320 OR ITO3 WRITE UP.

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