

COMPARE AND BRANCH UNEQUAL

REPRODUCTION

A. PURPOSE OF TEST

TO TEST THE COMPARE 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 2-3), B FIELD (COLUMNS 22-23), AND RESULT SHOULD BE FIELD (COLUMNS 41-60) ARE LOADED INTO THE PRINT AREA FOR PRINTING PURPOSES. THE B FIELD IS THEN COMPARED WITH THE A FIELD.

IF THE CONDITION IS EQUAL, A TEST IS MADE TO CHECK FOR "BLANK" IN COLUMN 41. IF BLANK, THE EQUAL-COMPARE OPERATION WAS EXECUTED CORRECTLY; IF NOT BLANK, AN ERROR IS INDICATED.

IF THE CONDITION IS UNEQUAL, A TEST IS MADE TO CHECK FOR THE LETTER "U" IN COLUMN 41. IF "U" IS PRESENT, THE UNEQUAL-COMPARE OPERATION WAS EXECUTED CORRECTLY; IF "U" IS NOT PRESENT, AN ERROR IS INDICATED.

NOTE: IN A COMPARE OPERATION AN UNEQUAL-COMPARE RESULTS WHEN THE B FIELD IS LONGER THAN THE A FIELD. THIS CIRCUIT IS TESTED BY THE LAST DETAIL CARD WHICH IS PUNCHED RW IN BOTH THE A FIELD AND THE B FIELD. NORMALLY THIS WOULD RESULT IN AN EQUAL COMPARISON IF BOTH FIELDS WERE OF EQUAL SIZE. HOWEVER, FOR THIS PARTICULAR CARD WHICH HAS AN "L" IN COLUMN 46, THE WORD MARK IS SET ONE POSITION FURTHER TO THE LEFT THAN FOR ALL OTHER CARDS, THUS ENLARGING THE B FIELD, AND FORCING AN UNEQUAL-COMPARE RESULT.

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REPRODUCTION

E. STOPS

920 IN STORAGE ADDRESS REGISTER: ERROR WITH SENSE E ON.

F. PRINTOUTS

1. CORRECT

A FIELD	B FIELD	RESULT SHOULD BE	RESULT IS
6	6	EQUAL	EQUAL
6		UNEQUAL	UNEQUAL
8	8	EQUAL	EQUAL
8		UNEQUAL	UNEQUAL
RW	RW	UNEQUAL LARGER B FIELD	UNEQUAL LARGER B FIELD

2. ERROR

A FIELD	B FIELD	RESULT SHOULD BE	RESULT IS
6	6	EQUAL	ERROR
6		UNEQUAL	ERROR
8	8	EQUAL	ERROR
8		UNEQUAL	ERROR
RW	RW	UNEQUAL LARGER B FIELD	ERROR

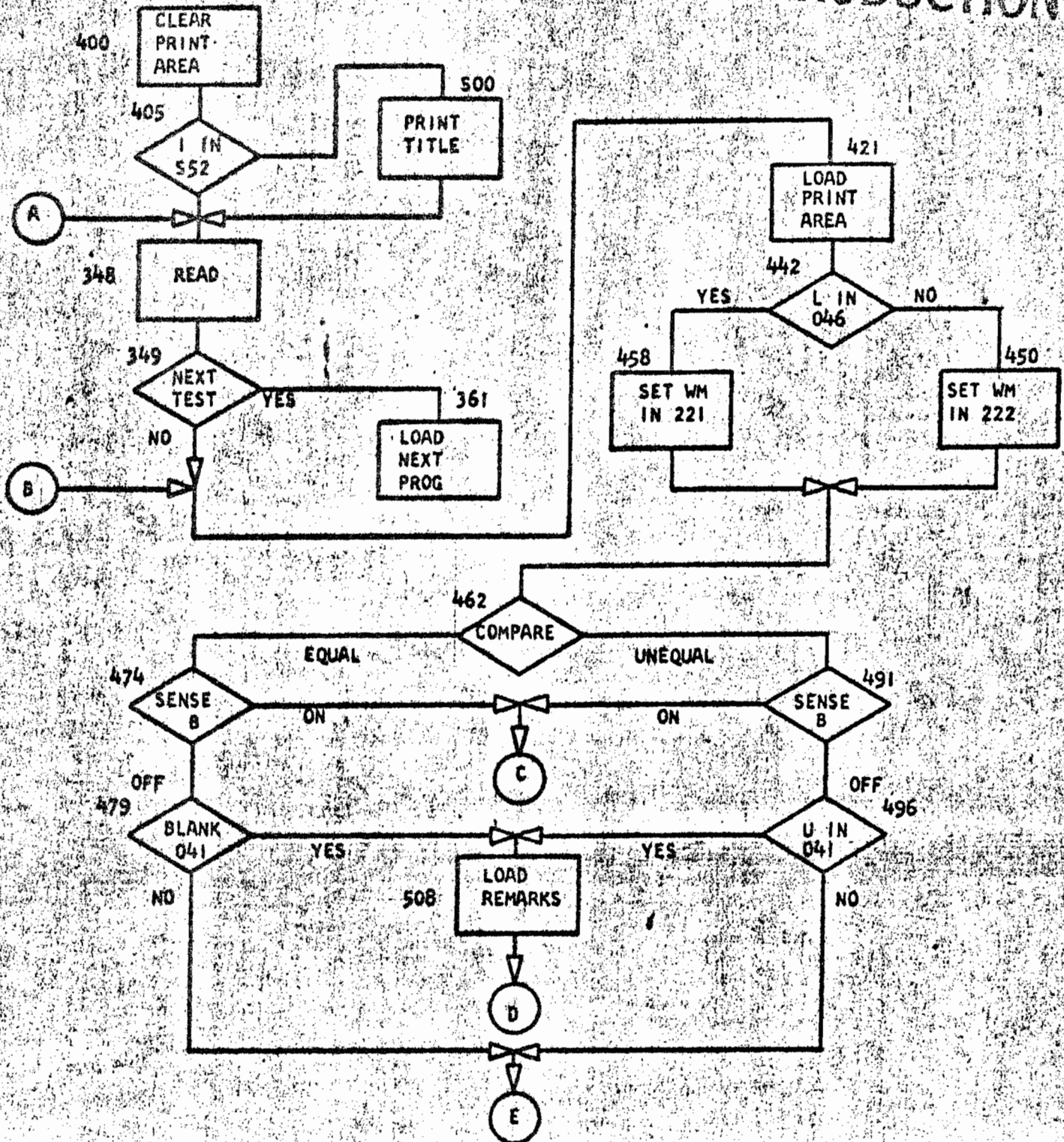
G. COMMENTS

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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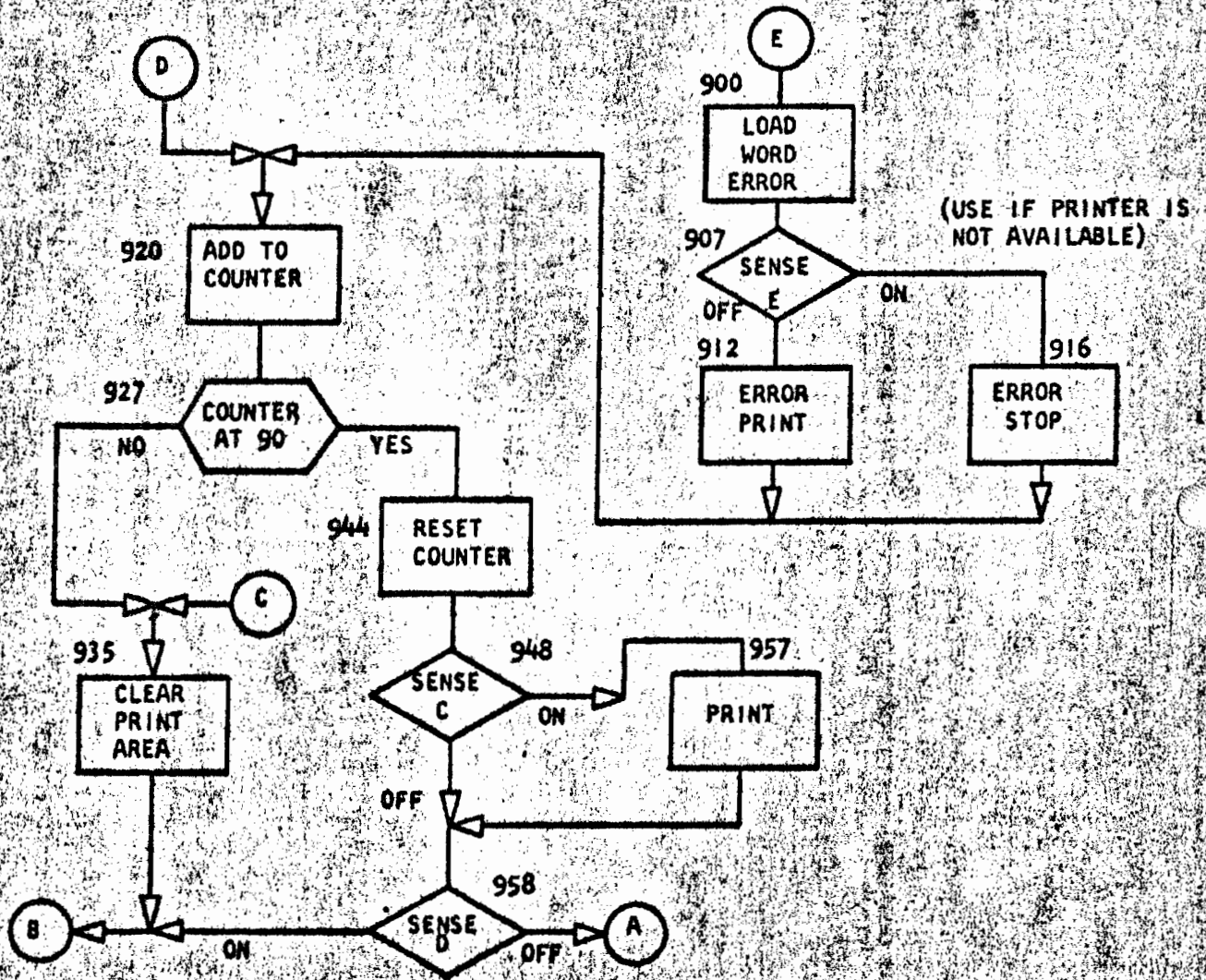
COMPARE AND BRANCH UNEQUAL
 FLOW CHART

REPRODUCTION



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1401 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

PROGRAM LISTING FOR USE WITH FLOW CHART REPRODUCTION

COMPARE BR UNEQUAL 0100B

INSTRUCTION ADDRESS	OP	A	B	REMARKS
377	377	B	389	USE WHEN TESTS ARE RUN FROM TAPE
385	385	B	588	..
389	389	N	000	..
393	393	M	360 392	..
400	400	/	332	START TEST
404	404	/		..
405	405	B	S00 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	.	002 078	LOAD PRINT AREA
428	428	L	080 299	..
435	435	L	072 272	..
442	442	B	458 046L	USE TEST FOR LARGER B FIELD
450	450	.	222	DEFINE B FIELD
454	454	B	462	GO COMPARE
458	458	.	221	DEFINE LARGE B FIELD
462	462	C	203 223	COMPARE
469	469	B	491 /	GO TO UNEQUAL ROUTINE
474	474	B	935 B	LOOP ON SW B SS
479	479	B	508 041	BRANCH IF CORRECT
487	487	B	900	GO TO ERROR ROUTINE
491	491	B	935 B	LOOP ON SW B SS
496	496	B	508 041U	BRANCH IF CORRECT
504	504	B	900	GO TO ERROR ROUTINE
508	508	.	241	DEFINE REMARK FIELD
512	512	B	971	GO TO CORRECT ROUTINE
900	900	L	714 285	BEGIN ERROR PRINT ROUTINE
907	907	B	916 E	E ON TO ERROR STOP SS
912	912	2	920	ERROR PRINT
916	916	.	920	ERROR STOP
920	920	A	920 970	ADD ONE TO OPERATION COUNTER
927	927	B	944 9699	BRANCH AFTER 90 OPERATIONS C FOR TA
935	935	/	332	CLEAR PRINT AREA
939	939	/		..
940	940	B	421	BRANCH TO REPEAT
944	944	S	970	RESET OPERATION COUNTER
948	948	B	957 C	C ON FOR CORRECT PRINT SS
953	953	B	958	BRANCH TO SENSE D
957	957	2		PRINT CORRECT RESULTS
958	958	B	421 D	D ON TO REPEAT SS
963	963	B	348	BRANCH TO PROG. CHAINING ROUTINE
967	967	0	00+	OPERATION COUNTER

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DIAGNOSTIC FUNCTION TEST

REPRODUCTION

971	971	L 260 280	LOAD COMMENT
978	978	B 920	GO TO CORRECT ROUTINE
1110	/10	E RRO R	CONSTANTS
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	..

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1401 DATA PROCESSING SYSTEM
 DIAGNOSTIC FUNCTION TEST
 REPRODUCTIBLE

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	COMPARE + BR UNEQUAL	0100800A
,008015,022029,033033N	1001	SET WORDMARK CARD	01008 02
L067367,340344,348349,3573611001,008012,001100118361080A8421/340080			01008 03
L069404,377385,389393,4004041001	B389	BS88N000M360392/332/	01008 04
L069441,413417,421428,435442100185005521/0808348,002078L080299L072272			01008 05
L069478,450454,458462,46947410018458046L,222B462,221C203223B491/B935B			01008 06
L072518,487491,496504,50851210018508041 8900893588508041UB900,2418971			01008 07
L071938,907912,916920,9279351001L/14285B916E2920.920A920970B9449699/332			01008 08
L056962,940944,948953,9579581001/8421S970B957C89582B421D			01008 09
L051981,967971,978982,9829821001B348000PL260280B920			01008 10
Z			
L065/39□/07/07,/10/15,/20/401001	ERROR	A FIELD	01008 11
L072/79,/60/80,/80/80,/80/801001B	FIELD	RESULT SHOULD BE	01008 12
L070517,500501,505512,5135171001	RESULT IS	2,049L0772772/2772	01008 13
L059544,525529,536537,5415451001□/40/60□/80L/892702/2702413			01008 14
/333080N		CLEAR WORDMARK CARD	01008 15
,019027,031,0380428031T9868400L046352BW048588		COMPARE + BR UNEQUAL	01008 16

DETAIL CARDS

1	1	EQUAL	01008 17
1	1	UNEQUAL	01008 18
1	1	EQUAL	01008 19
2	2	UNEQUAL	01008 20
2	2	EQUAL	01008 21
3	3	UNEQUAL	01008 22
2	3	EQUAL	01008 23
4	4	UNEQUAL	01008 24
4	4	EQUAL	01008 25
5	5	UNEQUAL	01008 26
4	5	EQUAL	01008 27
6	6	UNEQUAL	01008 28
6	6	EQUAL	01008 29
7	7	UNEQUAL	01008 30
8	7	EQUAL	01008 31
8	8	UNEQUAL	01008 32
8	8	EQUAL	01008 33
9	9	UNEQUAL	01008 34
9	9	EQUAL	01008 35
9	9	UNEQUAL	01008 36
9	9	EQUAL	01008 37
9	9	UNEQUAL	01008 38

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DIAGNOSTIC FUNCTION TEST REPRODUCTION

-	-	EQUAL	01008	39
-	-	UNEQUAL	01008	40
H7	H7	EQUAL	01008	41
H7	HH	UNEQUAL	01008	42
RW	RW	EQUAL	01008	43
RW	RW	UNEQ LARGER B FIELD	01008	44

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