

WRITE TEST TAPE ROUTINE

A. PURPOSE OF ROUTINE:

TO TRANSFER READ AND COPY TEST TAPE ROUTINES AND TEST PROGRAMS FROM CARDS TO TAPE DRIVE 1.

B. LOADING PROCEDURES:

TO RUN THIS ROUTINE:

1. READY TAPE DRIVE 1.
2. PLACE CARDS IN THE FILE FEED IN THE FOLLOWING ORDER.
 - A. WRITE TEST TAPE ROUTINE (BLOCK NUMBER 5300).
 - B. READ TEST TAPE ROUTINE (BLOCK NUMBER 5310).
 - C. COPY TEST TAPE ROUTINE (BLOCK NUMBER 5320).
 - D. ALL TESTS THAT ARE TO BE WRITTEN ON TAPE.
3. TURN ON SENSE SWITCH A.
4. IF SELECTION DIGITS ARE NOT TO BE WRITTEN ON TAPE, START OPERATION BY DEPRESSING LOAD KEY ON THE CARD READER.
5. IF IT IS DESIRED TO WRITE SELECTION DIGITS ON TAPE, USE THE FOLLOWING PROCEDURE:
 - A. SET 1300 IN ADDRESS STOP SWITCHES.
 - B. SET 1401 TO ADDRESS STOP MODE.
 - C. PRESS 1402 LOAD KEY.
 - D. MACHINE WILL STOP AFTER WRITE TEST TAPE DECK HAS LOADED. PRESS START KEY.
 - E. MACHINE WILL STOP WHEN SECOND CARD OF BLOCK 5310 IS LOADED. MANUALLY ENTER DESIRED SELECTION DIGITS.
 - F. SET 1401 TO RUN MODE AND DEPRESS THE START KEY.

C. PROGRAM CONTROL:

SENSE SWITCH A - MUST BE TURNED ON BEFORE THE LAST CARD IS RUN OUT OF THE HOPPER TO WRITE A TAPE MARK AND CAUSE THE TAPE DRIVE TO REWIND.

D. TEST ROUTINE OPERATION:

THE WRITE TEST TAPE INSTRUCTIONS ARE LOADED INTO LOCATIONS V00-X68 (1500-1768). THESE LOCATIONS ARE CHOSEN BECAUSE WHILE TEST PROGRAMS (INCLUDING PROGRAM CHAINING AND TITLE AND HEADINGS PRINT ROUTINES) REQUIRE 1249 POSITIONS, THE READ TEST TAPE ROUTINE (BLOCK NO. 5310) WHICH FOLLOWS, GOES UP TO 1397 EXHAUSTING THE CAPACITY OF A 1.4K PROCESSING UNIT. HENCE, THE NEED FOR A PROCESSING UNIT OF AT

DATE	2-2-61	4-27-61	5-15-62	4-25-63	6-29-63	17. 10. 63		
ENG. CHG. NO.	110378	110378C	115283	116745A	117628	TA 1976		



DIAGNOSTIC FUNCTION TEST

PART NO. 451458
 SHEET 2 OF 8
 BLOCK NO. 5300E

REPRODUCTION

D. (CONTINUED)

LEAST 2K STORAGE CAPACITY TO STORE THE WRITE TEST TAPE ROUTINE. AFTER LOADING THIS ROUTINE, THE TRAILER CARD BRANCHES TO X14 (1714) TO START EXECUTING THE PROGRAM. THIS ROUTINE IS NOT WRITTEN ON TAPE.

THE FIRST INSTRUCTION EXECUTED IS TO REWIND TAPE DRIVE I. THE NEXT INSTRUCTION STARTS THE LOADING OF THE READ TEST TAPE ROUTINE, WHICH IMMEDIATELY FOLLOWS, INTO LOCATIONS 001 THROUGH 1397. THE LAST INSTRUCTION OF THE READ TEST TAPE ROUTINE THEN BRANCHES BACK TO V09 (1509) AND THE EXECUTION OF THE WRITE TEST TAPE ROUTINE BEGINS. THE INSTRUCTION IN V09 MOVES "T65" INTO LOCATIONS 002-004. B T65 WILL THEN BECOME THE FIRST INSTRUCTION OF THE READ TEST TAPE ROUTINE DESCRIBED IN BLOCK NUMBER 5310.

A COMMAND IS THEN GIVEN TO WRITE THE READ TEST TAPE ROUTINE AS THE FIRST TAPE RECORD. THIS RECORD, AS WELL AS ALL OTHER RECORDS WRITTEN ON TAPE, IS TESTED FOR ERRORS IN TRANSMISSION AND RE-WRITTEN, IF NECESSARY. WORD MARKS IN STORAGE ARE WRITTEN AS WORD SEPARATOR CHARACTERS ON TAPE. IF NO ERRORS OCCUR, A TEST IS MADE FOR END-OF-REEL. SINCE AT THIS POINT THE ANSWER IS NO, THE READ AREA IS CLEARED, AND THE TITLE CARD OF THE COPY TEST TAPE ROUTINE IS READ INTO LOCATIONS 001-080. POSITION 080 IS THEN TESTED FOR THE LETTER A WHICH ALWAYS INDICATES A TITLE CARD. IF A IN 080, THE INFORMATION IN THE TITLE CARD IS WRITTEN AS THE SECOND TAPE RECORD.

THE NEXT CARDS TO FOLLOW ARE THE PROGRAM INSTRUCTION CARDS FOR THE COPY TEST TAPE ROUTINE. THESE INSTRUCTIONS ARE LOADED INTO VARIOUS SECTIONS OF STORAGE FROM 001 TO 403 AND WRITTEN ON TAPE AS A 1249-CHARACTER RECORD. THIS ROUTINE BECOMES THE THIRD TAPE RECORD.

FOLLOWING THIS, EACH TEST BLOCK TO BE WRITTEN ON TAPE FOLLOWS A SIMILAR PATTERN, I.E.,

- TITLE CARD - 80-CHARACTER RECORD
- PROGRAM - 1249-CHARACTER RECORD
- DETAIL CARDS (IF ANY) - 80-CHARACTER RECORD

THIS PROCEDURE CONTINUES UNTIL EITHER AN END-OF-REEL OR LAST CARD CONDITION IS RECOGNIZED. THE FIRST CONDITION (EOR) IS SIGNALLED BY A STOP IN W45. THE SECOND CONDITION IS RECOGNIZED WITH SENSE SWITCH A ON AND NO CARDS LEFT IN THE HOPPER. THIS GIVES A COMMAND TO WRITE A TAPE MARK, RE-WIND TAPE DRIVE I, AND STOP THE MACHINE AT LOCATION W61 (1661) BECAUSE OF THE STOP IN W60.

E. STOPS:

STORAGE ADDR REG	TYPE OF HALT
1646	END OF REEL
1661	END OF WRITE -- TAPE HAS BEEN WRITTEN

F. PRINTOUTS:

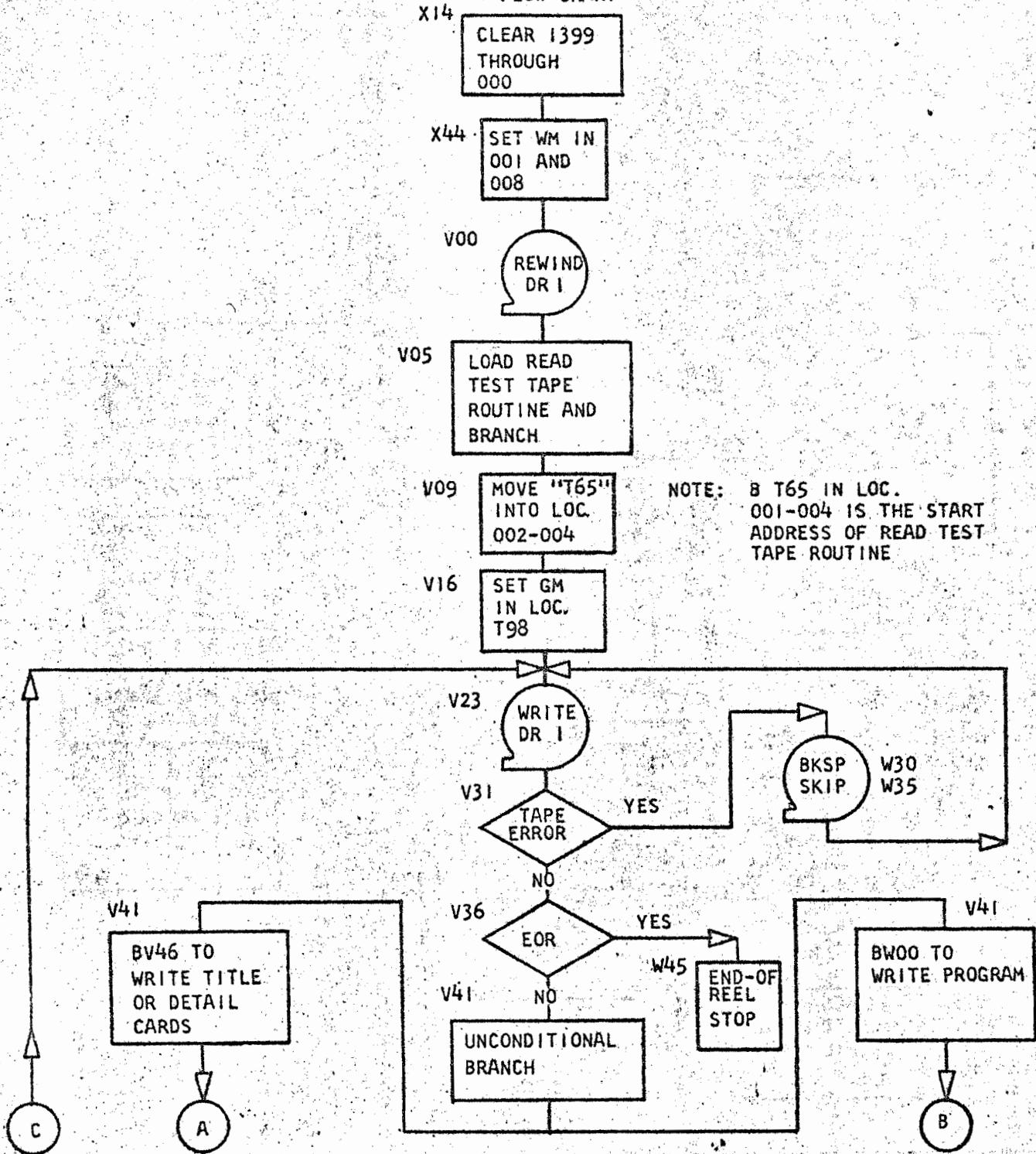
NONE

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REPRODUCTION

WRITE TEST TAPE ROUTINE

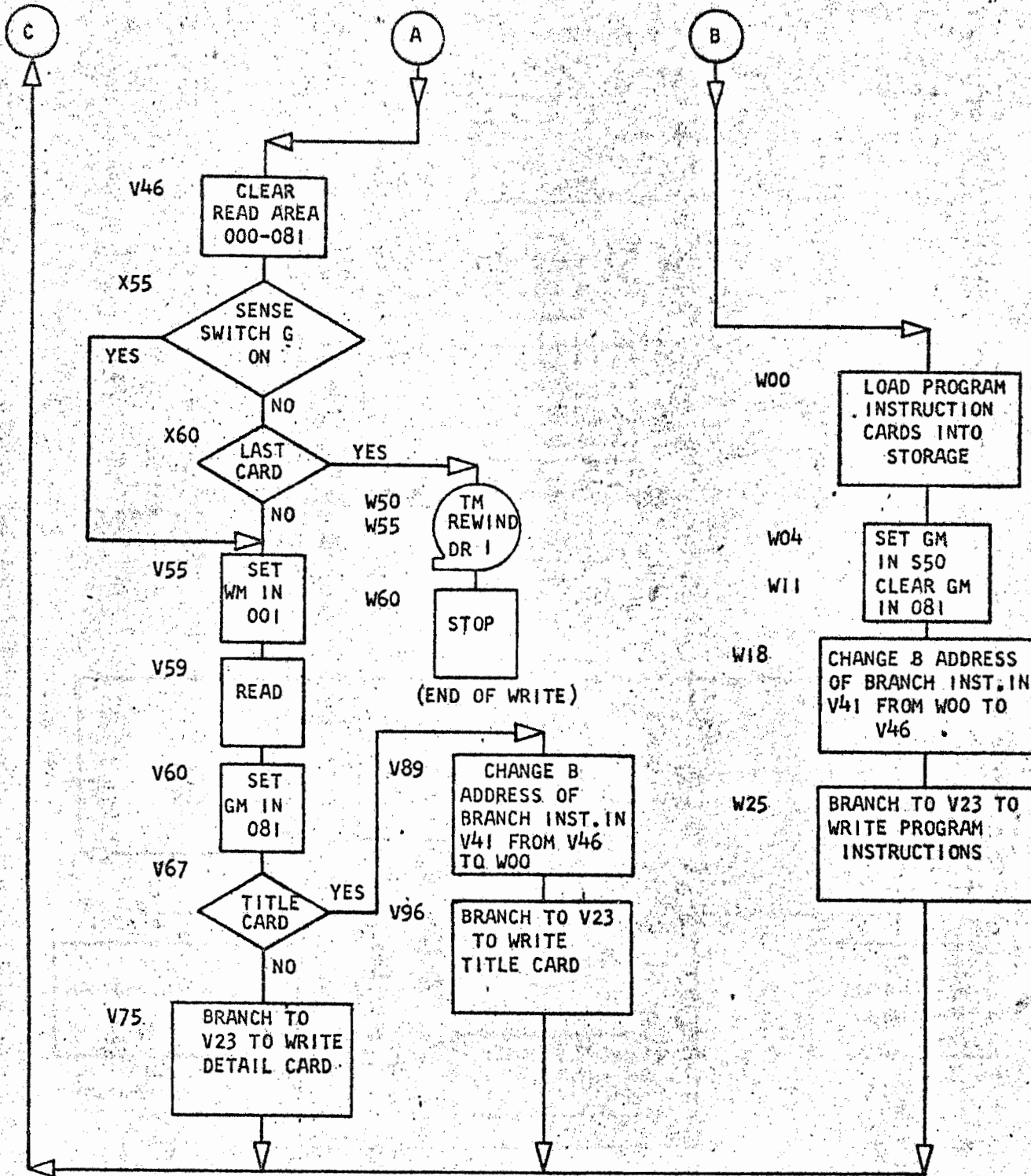
FLOW CHART



NOTE: 8 T65 IN LOC. 001-004 IS THE START ADDRESS OF READ TEST TAPE ROUTINE

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1401 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

PART NO. 451458
SHEET 6 OF 8
BLOCK NO. 5300E

REPRODUCTION

PROGRAM LISTING FOR USE WITH FLOW CHART

WRITE TEST TAPE ROUTINE 5300E

INSTRUCTION	ADDRESS	OP	A	B	REMARKS
	1500	V00	U	201 R	REWIND
	1505	V05	I	001	LOAD READ TEST TAPE ROUTINE INTO STORAGE
	1509	V09	M	X03 004	PUT BT65 IN 001 FOR READ TEST TAPE TEST
	1514	V14	L	X00 T98	LOAD GM-WM IN T98
	1523	V23	L	201 001W	WRITE RECORD
	1531	V31	B	W30 L	BRANCH IF TAPE ERROR
	1536	V36	B	W45 K	BRANCH IF END-OF-REEL
	1541	V41	B	V46	*BV46 FOR TITLE OR DETAIL -- BW00 FOR PGM
	1546	V46	V	081	CLEAR READ
	1550	V50	B	X55	GO TEST FOR LAST CARD
	1555	V55	,	001	SET WORD MARK
	1559	V59	I		READ TITLE OR DETAIL CARD
	1560	V60	L	T98 081	LOAD GM-WM FOR TITLE OR DETAIL RECORD
	1567	V67	B	V89 080A	BRANCH IF TITLE CARD
	1575	V75	B	V23	BRANCH TO WRITE DETAIL CARD
	1589	V89	M	X06 V44	SETUP BRANCH BW00 FOR PROGRAM RECORD
	1596	V96	B	V23	GO WRITE TITLE CARD
	1600	W00	I	001	READ TEST INTO STORAGE
	1604	W04	L	T98 S50	TEST PROGRAM LOADED. PUT GM-WM IN S50.
	1611	W11	M	W61 081	CLEAR GM FROM 081
	1618	W18	M	X09 V44	SETUP BRANCH BV46 FOR DETAIL OR TITLE
	1625	W25	B	V23	GO WRITE PROGRAM
	1630	W30	U	201 B	BACKSPACE TAPE IF TAPE ERROR
	1635	W35	U	201 E	ERASE FORWARD IF DEFECTIVE TAPE
	1640	W40	B	V23	BRANCH TO RE-WRITE
	1645	W45	.		END-OF-REEL STOP
	1646	W46	B	W45	
	1650	W50	U	201 M	WRITE TAPE MARK
	1655	W55	U	201 R	REWIND
	1660	W60	.		END WRITE STOP
	1661	W61	B	W60	
	1700	X00			GM-WM IN X00
	1701	X01	T	65	START ADDR FOR READ TEST TAPE ROUTINE
	1704	X04	W	00	B ADDR TO READ TEST RECORD INTO STORAGE
	1707	X07	V	46	B ADDR TO READ TITLE OR DETAIL RECORDS
	1710	X10	I	0	CONSTANT TO MODIFY CLEAR STORAGE ADDR
	1712	X12	T	9	*NEW HUNDREDS AND TENS OF CLEAR STOR ADDR
	1714	X14	M	X13 X23	START -- SETUP NEW CLEAR STORAGE ADDR
	1721	X21	V	T99	*CLEAR STORAGE FROM 1399 DOWN
	1725	X25	A	X11 X13	MODIFY CLEAR STORAGE ADDRESS
	1732	X32	B	X44 X220	STORAGE CLEARED GO WRITE RECORD
	1740	X40	B	X14	GO BACK TO CLEAR STORAGE LOOP

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1401 DATA PROCESSING SYSTEM
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BLOCK NO. 5300E

REPRODUCTION

1744 X44 . 001 008
1751 X51 B V00
1755 X55 B X65 G
1760 X60 B W50 A
1765 X65 B V55
1769 X69

SET WORDMARKS FOR READ TEST TAPE BLOCK
START ROUTINE AT V00.
BYPASS LAST CARD. DO NOT WRITE TM.
BRANCH LAST CARD. WRITE TAPE MARK.
CONTINUE WRITING
*AN ASTERISK MEANS INSTRUCTION CHANGES

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1401 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

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SHEET 8 OF 8
BLOCK NO. 5300E

REPRODUCTION

TABLE OF UNPRINTABLE CHARACTERS

LP-LEFT PARENTHESIS	12 5 8	SE-SEMICOLON	11 6 8	DE-DELTA	12 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		

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,008015#022029,033033N      1001      WRITE TEST TAPE ROUTINE      5300E00A
L068V35,V05V09,V16V23,V31W361001U%UIR1001MX03004LX00T98L%U1001W8W30L      5300E 02
L063V66,V41V46,V5CV65,V59V601001BW45KBV46 /081BX55 ,0011LT98081      5300E 03
L069W03,V75V89,V96W00,W04W041001BV89080ABV23      MX06V448V231001      5300E 04
L068W39,W11W18,W25W30,W35W401001LT98S50MW61081MX09V448V23 U%UIBU%UIE      5300E 05
L072W79,W45W46,W50W55,W60W611001BV23 .8W45U%UIMU%UIR.8W60      5300E 06
L062X09#W80W80,X00X01,X04X071001      GT65W00V46      5300E 07
M
L066X43,X12X14,X21X25,X32X40100110T9MX13X23/T99AX11X13BX44X220BX14      5300E 08
L057X68,X51X55,X60X65,X69X691001,0010088V008X65GBW50ABV55      5300E 09
BX14      WRITE TEST TAPE ROUTINE      5300E 10
    
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