

9D01A

DRUM DIAGNOSTIC AND RELIABILITY TEST
ALSO DRUM SPEED TEST

A. UNIT TEST

1. PURPOSE OF TEST

- A. TO COMPLETELY TEST AND DIAGNOSE ALL DRUM FAILURES. THE TEST WILL OPERATE CORRECTLY TO TEST UP TO 16 LOGICAL DRUMS, ---4 DRUM FRAMES.

B. METHOD OF TEST

PART I INITIALIZATION 0030 - 0415

1. THE KEYS ARE USED FOR SELECTING THE DESIRED DRUM OR DRUMS TO BE TESTED.

KEY 1, DRUM 1-KEY 2, DRUM 2-KEY 3, DRUM 3-----KEY 16, DRUM 16.

2. SENSE LIGHTS ARE USED TO INDICATE WHICH DRUM IS BEING TESTED. SENSE LIGHT 4 IS USED THROUGHOUT THE PROGRAM FOR CONTROL, SEE SENSE LIGHT SECTION

3. SINCE THE LOAD DRUM TEST WORKS ONLY ON DRUM 1 AND SINCE IT IS ONLY NECESSARY TO ENTER THIS TEST ONCE, IT IS BYPASSED ON EVERY TEST EXCEPT THE INITIAL TEST WHEN DRUM ONE IS BEING TESTED. LOAD DRUM TEST MAY BE ENTERED ONLY ON INITIAL PASS, HOWEVER, A MANUAL TRA TO 0032 WILL RELOAD THIS COUNT, OR A HIGHER COUNT MAY BE STORED IN CT4 AT LOCATION 0032.

4. WHEN THE CORRECT DRUM TO BE TESTED HAS BEEN SELECTED, THIS DRUM ADDRESS IS STORED IN ALL RDS AND WRS INSTRUCTIONS. TEST INSTRUCTIONS, RDR, AND LDA, ARE ALSO ADJUSTED FOR PRINT OUT WITH 9DEPRA, DIAGNOSTIC ENGINEERING PRINT SUBROUTINE.

PART II TEST LOAD DRUM 0416 - 0436

1. WRITE TWO TRANSFER INSTRUCTIONS ON DRUM 301 AT LOCATIONS ZERO AND ONE. THEN PROGRAM STOPS TO ALLOW PUSHING LOAD DRUM BUTTON. CORRECT TRANSFER INSTRUCTION WILL THEN PLACED IN ZERO AND TRANSFER TO LOAD 1 AFTER DRUM DISCONNECTS. LOCATION 1 IS ALSO CHECKED TO SEE IF CORRECT WORD WAS PLACED THERE.

PART III A ALL ZEROS TEST 0443 - 0513

1. LOAD ENTIRE DRUM WITH ZERO WORDS.
2. READ ENTIRE DRUM INTO COMMON STORAGE TO INSURE THAT READING DOES NOT AFFECT STORED INFORMATION.
3. READ ENTIRE DRUM INTO RESERVEED MEMORY AREA AND COMPARE EACH WORD WITH TEST WORD OF ALL ZEROS.
4. OUR NEW DIAGNOSTIC ENGINEERING PRINT SUBROUTINE IS IN COMPLETE CONTROL OF THE ENTIRE PROGRAM AND EXIT IS MADE, AFTER EACH TEST. TO 9DEPRA, WHETHER ON ERROR OR OK. SEE PRINT ROUTINE SECTION.

PART III B ALL ONES TEST 0443 - 0513

1. THIS TEST REPEATS INSTUCTIONS FOR PART III A EXACTLY EXCEPT THE TEST WORD IS ALL ONES INSTEAD OF ZEROS.

PART IV SLIVER ANA CPY, TIMING TEST 0514 - 0533

1. A COPY LOOP IS SET UP WITH AN ANA INSTRUCTION INSERTED BETWEEN COPIES, THIS COPY ANA COPY SEQUENCE IS TO CHECK FOR A CLOSE TIMING CONDITION.
2. A 2 CYCLE INSTRUCTION, NOP, MAY BE MANUALLY INSERTED IN PLACE OF THE 3 CYCLE ANA. IF YOU DESIRE TO FIND THE MAXIMUM TIME BETWEEN COPIES, A SHIFT INSTRUCTION MAY BE USED, THE SHIFT BEING INCREASED UNTIL I/O CHECK OCCURS.

PART V SHORT LDA TEST 0534 - 0576

1. THIS TEST IS NOT TO BE CONFUSED WITH THE REGULAR SHORT LDA TEST. THIS SMALL LDA TEST IS WRITTEN PRIMARILY TO BE IDENTICAL WITH THE LDA PATTERN USED IN THE TEST TO FOLLOW, THE WORST PATTERN TEST. SO THAT WHEN RUNNING THE WORST PATTERN TEST THE POSSIBILIYT OF GETTING AN LDA ERROR OR CONFUSING A WORST PATTERN ERROR WITH AN LDA ERROR WILL BE ALMOST ENTIRELY ELIMINATED.

PART VI WORST PATTERN TEST 0577 - 0674

1. DRUM TO BE TESTED IS REWRITTEN WITH ALL ZEROS.
2. FORTY ONE TEST WORDS. A WORD OF ALL ZEROS EXCEPT FOR A ONE IN ONE OF ITS 36 POSITIONS, ARE WRITTEN ON DRUM BEGINNING AT DRUM ADDRESS ZERO AND AT EVERY SIXTY TWO OCTAL ADDRESSES THAT FOLLOW. THE TEST WORD BEGINS WITH A ONE IN POSITION 35 AND IS ROTATED LEFT ONE POSITION FOR EACH NEW ADDRESS.
3. THESE 41 TEST WORDS ARE READ BACK ONE AT A TIME AND CHECKED FOR ERROR.
4. THE DRUM IS REWRITTEN WITH ALL ONES AND THE TEST WORDS ARE CHANGED

SIMILARILY TO ALL ONES EXCEPT FOR ONE POSITION IN THE WORD WHICH IS A ZERO. THE TEST IS REPEATED.

PART VII TIMING PULSE TEST 0675 - 1001

1. THE ENTIRE DRUM IS LOADED BEGINNING AT SOME DRUM ADDRESS OTHER THEN ZERO, AT DRUM ADDRESS 3472 IN PART 1 OF THIS TEST. AT DRUM ADDRESS 3472 ALL ONES ARE WRITTEN WHILE THE REMAINDER OF THE DRUM IS LOADED WITH ZEROS.
2. DRUM ADDRESSES 3472, 3777, AND ZERO ARE CHECKED FOR ERRORS.
3. THE DRUM IS RELOADED BEGINNING AT ADDRESS 307. ALL ONES ARE WRITTEN AT 307, THE REMAINDER OF THE DRUM IS LOADED WITH ZEROS, AND A 25 PATTERN IS WRITTEN OVER ADDRESS 307.
4. DRUM ADDRESS 307 IS CHECKED FOR ERROR.

PART VIII LOCATE DRUM ADDRESS TEST 1002 - 1210

1. SEQUENTIAL TEST
 - A. LOAD ENTIRE DRUM WITH GENERATED NUMBERS CORRESPONDING TO EACH LOCATION OF DRUM ADDRESS, ---ADDRESSES AT ADDRESSES.
 - B. READ ENTIRE DRUM INTO STORAGE, IN SEQUENTIAL MANNER. THA IS

0001, 0401, 1001, , 3401,
0002, 0402, 1002, , 3402,
. . .
. . .
. . .
. . .
0007, 0407, 1007, , 3407,
0000, 0400, 1000, , 3400,
 - C. COMPARE WORD READ TO CORRESPONDING GENERATED WORD TO BE SURE CORRECT INFORMATION WAS WRITTEN ON DRUM.
 - D. A CHECK SUM IS KEPT OF GENERATED WORDS FOR A MORE THOROUGH CHECK.
 - E. LOCATE ALL DRUM ADDRESSES FOLLOWING SEQUENCE PATTERN IN-2-ABOVE. BY GENERATING THE CORRECT DRUM ADDRESS. COMPATE ADDRESS LOCATION TO WORD STORED AT THIS LOCATION TO BE SURE CORRECT ADDRESS WAS FOUND.
2. NON-SEQUENTIAL TEST
 - A SAME AS SEQUENTIAL TEST EXCEPT INSTEAD OF TESTING LDA SEQUENTIALLY EVERY TWENTIETH OCTAL ADDRESS IS TESTED. THIS MAKES THE TEST MUCH SHORTER. WHERE IN THE SEQUENTIAL TEST ONLY ONE DRUM ADDRESS MAY BE TESTED, PER DRUM REVOLUTION. IN THIS MANNER

15 DRUM ADDRESS MAY BE TESTED PER DRUM REVOLUTION. THIS TEST ALSO SHOWS UP TIMING TROUBLES.

PART IX LDA RIPPLE-SWITCHING PHYSICAL DRUMS 1212 - 1451

1. ALL DRUM IN THE FRAME SELECTED ARE LOADED WITH A 25 PATTERN.
2. ONE WORD IS WRITTEN ON EACH DRUM IN ASCENDING LDA ADDRESSES.
3. EACH LDA WORD IS READ BACK AND CHECK.
4. IF AN ERROR OCCURS ONLY IN THIS SECTION, THE TROUBLE IS PROBABLY IN MF3 J06 TUBES 7 AND 8. SYSTEMS PAGE 7.01.

PART X WORST SWITCHING CONDITIONS TEST 1452 - 1710

1. ALL DRUMS IN THE FRAME FO THE DRUM SELECTED TO BE TESTED ARE LOADED TWICE WITH THE LOAD PATTERN. INCLUDING THE DRUM TO BE TESTED. THIS TENDS TO GIVE A MAXIMUM SIGNAL LEVEL SPILL.
2. THE DRUM TO BE TESTED IS THEN LOADED ONCE WITH THE TEST PATTERN, THE TEST PATTEN BEING THE ALTERNATE OF THE LOAD PATTERN. THIS GIVES A MINIMUM SIGNAL LEVEL AND SPILL.
3. READ TEST DRUM INTO STORAGE.
4. COMPARE WORD READ TO TEST WORD.
5. THE LOAD AND TEST WORDS ARE REVERSED AND THE TEST IS REPEATED.
6. TWO TEST WORDS, 252525252525 AND 525252525252, ARE USED FOR LOAD PATTERN, TEST PATTERN, AND TEST WORDS. THE DRUMS ARE LOADED IN SUCH A WAY AS TO HAVE THESE WORDS ALTERNATING THROUGHOUT THE ENTIRE DRUM FROM 0-3777 THEN THE DRUM TO BE TESTED IS LOADED IN THE SAME MANNER BUT WITH THE TEST WORDS BEGIN REVERSED. THE TEST WORDS ARE STORED AT LOCATIONS 2351 AND 2352 RESPECTIVELY.
7. AN ADDITIONAL TEST IS PREFORMED, USING 707070007070 AND 070707770707 AS TEST WORDS. THESE WORDS ARE FOUND AT LOCATIONS 2353 AND 2354.

PART X RANDOM NUMBER TEST 1451 - 1665

1. RANDOM NUMBER LDA TEST
 - A. THE SELECTED DRUM TO BE TESTED IS FULLY LOADED WITH ALL ZEROS.
 - B. GENERATE 100 OCTAL RANDOM NUMBERS AND WRITE ON DRUM BEGINNING AT A GENERATED RANDOM ADDRESS. FINISH LOADING DRUM WITH ALL ZEROS.
 - C. READ ENTIRE DRUM INTO STORAGE AND CHECK RANDOM NUMBER WRITTEN AT FIRST RANDOM ADDRESS, THE LAST-ONE HUNDRETH OCTAL-RANDOM NUMBER, AND

RANDOM NUMBER WRITTEN AT ZERO ON DRUM IF ANY. A RANDOM NUMBER WILL BE WRITTEN AT ZERO ON DRUM ONLY WHEN RANDOM ADDRESS IS GREATER THEN ADDRESS 3700.

- D. CHECK SUMS ARE GENERATED AND CHECKED TO LESSEN CHANCE OF ERROR
- E. CAD IS USED IN THIS AREA TO READ + WRITE. THE READ CHECK SUM IS COMPARED AGAINST THE CAD SUM. THE WRITE CHECK SUM IS COMPARED AGAINST THE CAD WRITE. THEY ARE ALSO COMPARED AGAINST EACH OTHER. AS TEST WORDS. THESE WORDS ARE FOUND AT LOCATIONS 2353 AND 2354.

2. RANDOM NUMBER TEST-FULL DRUM 2126 - 2210

- A. GENERATE 4000 OCTAL RANDOM NUMBERS AND WRITE DRUM THREE TIMES.

THIS SECTION TAKES ADVANTAGE OF THE INDEX GAP TO WRITE THE DRUM THREE TIMES WITHOUT RESELECTING. THE TIME USED IN THE GAP IS 72 US. IF THE I/O CHECK COMES ON, THE INDEX GAP IS MUCH TOO SHORT AND THE DRUM TIMMING TRACKS SHOULD BE RE-WRITTEN.

GENERATE 4000 OCTAL RANDOM NUMBERS AND WRITE DRUM ONES.

- B. READ FULL DRUM BACK INTO STORAGE AND CHECK FOR ERROR.

PART XII 552 U-SEC DELAY 2211 - 2226
BETWEEN RDS AND LDA

- 1. AN RDS IS GIVEN AND A 552 U-SEC DELAY SET UP BEFORE THE LDA IS GIVEN. ONLY ONE CPY IS GIVEN AND ONLY ONE PASS PROGRAMMED.

PART XIII 2227 - 2406

LDA-INDIRECTLY ADDRESSED, LDA-INDEXED, LDA-INDEXED AND INDIRECTLY ADDRESSES, AND A TEST FOR NO HANG UP CONDITION AFTER EXCEEDING TIME BETWEEN COPIES.

PART XIV DRUM SPEED TEST 7022 - 7114

THE DRUM INDEX PULSE IS USED TO TURN ON SENSE LITE 1. VEE COMMENTS FOR MORE INFORMATION ON SPEED TEST.

AREA OF MACHINE REQUIRED

- 1. MF, CF, CR, DF, PR

- 2. STORAGE LOCATIONS PROGRAM 0030-2720
DRUM STORAGE 2721-6721, 6722-7022
DRUM SPEED TEST 7022-7114
PRINT ROUTINE 7115-10203

PROGRAM CONTROL

1. DECK 000 9LD01 LOW END LOADER
 001 - 099 9D01 DRUM PROGRAM
 100 TRA CARD TO 0030
 101 - 102 2 BLANK CARDS

2. SENSE SWITCH CONTROL

SSW 1 UP TEST SW 4
SSW 1 DN REPEAT TEST LOOP
SSW 2 UP INDICATE ERRORS TEST SW 3
SSW 2 DN BY-PASS ERROR INDICATION
SSW 3 UP PRINT ON ERROR IF SW 2 IS UP THEN TEST SW 1
SSW 3 DN STOP ON ERROR IF SW 2 IS UP THEN TEST SW 1
SSW 4 UP PROCEED TO NEXT TEST
SSW 4 DN REPEAT SECTION 50 TIMES
SSW 5 UP PERFORM NON-SEQUENTIAL SHORT LDA TEST
SSW 5 DN ENTER LOAD DRUM TEST PERFORM SEQUENTIAL LONG
 LDA TEST
SSW 6 UP CALL IN NEXT PROGRAM
SSW 6 DN REPEAT ENTIRE PROGRAM

E. NORMAL STOPS

0034 STOP TO ENTER KEYS WITH DRUM, OR DRUMS TO BE SELECTED
0422 PROGRAM STOPS HERE WHEN DRUM 301 IS BEING TESTED. THIS IS A TEST
LOAD DRUM STOP. PUSH LOAD DRUM BUTTON AND PROGRAM CONTINUES.
IF REPEAT TESTS ARE PERFORMED ON DRUM 301, THE PROGRAM BYPASSES
THIS TEST.

NOTE IF DRUM 301 HAS AN ERROR ON IT, AND INCORRECT TRANSFER MAY BE
MADE. IN THIS CASE YOU MAY MANUALLY TRANSFER AROUND LOAD DRUM
TEST.

F. ERROR STOPS

7134 ERROR IS IN MAIN PROGRAM WITH SENSE SWITCH 3 DOWN. INDEX REGISTER
OR C CONTAINS THE TWO S COMPLEMENT OF THE ADDRESS WHERE THE ERROR WAS
7162 DETECTED. TO CONTINUE PROGRAM PUSH START.

G. SENSE LIGHTS

SL 1 ON DRUM 301 OR 311 IS SELECTED
SL 2 ON DRUM 302 OR 312 IS SELECTED
SL 1 + 2 ON DRUM 303 OR 313 IS SELECTED
SL 3 ON DRUM 304 OR 314 IS SELECTED
SL 1 + 3 ON DRUM 305 OR 315 IS SELECTED
SL 2 + 3 ON DRUM 306 OR 316 IS SELECTED
SL 1,2, + 3 ON DRUM 307 OR 317 IS SELECTED
SL 1,2, + 3 OFF DRUM 310 OR 320 IS SELECTED
SL 4 USED FOR PROGRAM CONTROL

H. PRINT ROUTINE

1. A SHORTEND VERSION OF 9DEPR IS USED IN 9D01, AND WAS ASSEMBLED WITH THE MAIN PROGRAM TO CONSERVE STORAGE. THE DIFFERENCE IN 9DEPR BEING THE REMOVAL OF THE CHECK FOR REDUNDANCY ON TAPE.

I. COMMENTS

1. A RESTART IS FURNISHED BY PLACING A TRA 34 AT LOCATION 0.
2. 9D01 DEPENDS UPON THE RELIABILITY OF STORAGE. THEREFORE, STORAGE MUST BE USED AS A BUFFER AND ANY STORAGE FAILURE WOULD BE INTERPRETED AS A DRUM FAILURE.
3. THE SPEED OF THE PROGRAM IS APPROXIMATELY 5 MINUTES PER PASS FOR ALL 4 DRUMS WHEN RUNNING THE LONG LDA TEST AND APPROXIMATELY 2 MINUTES WHEN RUNNING SHORT LDA TEST.
4. THE PROGRAM IS WRITTEN SUCH THAT ON ERROR PRINT OUT THE WORD NUMBER WILL BE THE SAME AS THE LOCATION ON DRUM WHERE ERROR OCCURED. IF AN ERROR OCCURS ON A CHECK SUM TEST, THE RECNO AND WDNO SHOULD BE IGNORED.
5. THE RECORD NUMBER IN THE ERROR PRINT OUT WILL ALWAYS BE 1.
6. IF THE CUSTOMER ENGINEER WISHES TO TRACE PULSES IN A CERTAIN DRUM FRAME, HE MAY MANUALLY TRANSFER TO 447 AND STO MANUALLY DESIRED PATTERN IN T1, LOCATION 2627. THE DIFFERENT PATTERNS USED IN THE TEST ARE-

TEST 1 IS LOCATION 2615 AND CONTAINS ALL ZEROS.
TEST 2 IS LOCATION 2616 AND CONTAINS ALL ONES.
TEST 3 IS LOCATION 2617 AND CONTAINS 252525252525.
TEST 4 IS LOCATION 2620 AND CONTAINS 525252525252.
TEST 5 IS LOCATION 2621 AND CONTAINS 707070007070.
TEST 6 IS LOCATION 2622 AND CONTAINS 070707770707.

ANY OTHER PATTERN THE CUSTOMER ENGINEER WISHES MAY BE USED.

A CONTINUOUS WRITE LOOP WILL BE WHEN TRANSFER IS MADE TO 447 AND SSW 1 SET DOWN.

A CONTINUOUS READ LOPP MAY BE PERFORMED WHEN TRANSFER IS MADE TO 456 AND SSW 1 SET DOWN.

A CONTINUOUS READ AND COMPARE LOOP MAY BE PERFORMED BY TRANSFERING TO 465 AND SETTING SSW 1 DOWN.

7. BY STORING A TRANSFER TO 0443 AT LOCATION 0507 THE ONES AND ZEROS TEST WILL BE RUN CONTINUALLY ON ANY DESIRED DRUM. ANY OTHER TEST MAY BE SET UP SIMILARLY.
8. TO RUN THE SWITCHING TEST REQUIRES THAT ALL DRUM IN FRAME SELECTED BE

IN WORKING CONDITION. THAT IS THEY MUST BE IN CONDITION TO BE SELECTED, WRITTEN ON, AND READ FROM. OTHERWISE A TRA MUST BE MADE MANUALLY. STO A TRA TO 2421 AT LOCATION 1212 TO BYPASS THIS SECTION. SIMILARLY ANY PART OF 9D01 MAY BE BYPASSED. ALSO ANY ONE TEST CAN BE SINGLED OUT FOR INDIVIDUAL RUNNING.

9. IF WHILE RUNNING THE PROGRAM. WITH ALL DRUMS FOR YOUR INSTALLATION BEING SELECTED, AND YOU WANT TO MOVE THE PROGRAM TO A PARTICULAR DRUM THEN MANUALLY TRA TO 72 AND START. THIS WILL CARRY YOU TO THE NEXT DRUM. SO CONTINUE THIS MANUAL TRA TO 72, AND START UNTIL THE SENSE LIGHTS TELL YOU THAT YOU HAVE THE DRUM YOU WANT. ALSO, IF YOU WANT TO TEST THE DRUM OVER AND OVER YOU MAY STORE A TRA ATO AA LOC 443 AT FINIS-1 -LOC 2421. YOU MAY AT ANY TIME STORE THE DRUM ADDRESS OF DRUM YOU WANT TO TEST AT LOC 2446 AND A ZERO AT 2447, OR YOU MAY RESTART AND ENTER ONLY 1 DRUM INTO KEYS.
10. IT SHOULD BE NOTED THAT AN ERROR FOUND IN ONE TEST MAY SHOW UP IN A FOLLOWING TEST AS A DIFFERENT TYPE ERROR. THAT IS, A READ OR WRITE ERROR MAY SHOW UP FURTHER DOWN AS AN LDA ERROR. IN A CASE LIKE THIS. THE FIRST LOCATION OF ERROR SHOULD BE GIVEN PRIORITY AND EXAMINED FIRST.
11. DRUM SPEED TEST

A. SENSE SWITCH CONTROL

1. SWITCH #1 UP SELECTS PHYSICAL DRUM A
2. SWITCH #1 DN SELECTS PHYSICAL DRUM B
3. SWITCH #2 NOT USED
4. SWITCH #3 NOT USED
5. SWITCH #4 NOT USED
6. SWITCH #5 UP SELECTS DRUM FRAME ONE.
7. SWITCH #5 DN SELECTS DRUM FRAME TWO.
8. SWITCH #6 UP CALL IN NEXT PROGRAM
9. SWITCH #6 DN REPEAT TEST

B. SENSE LIGHTS

LITE #1 IS USED TO DEFINE DRUM SPEED
LITES #2,3,4 NOT USED

C. PROGRAM STOPS

7074 PROGRAM STOPS HERE TO ENABLE OPERATOR TO DISPLAY DRUM SPEED
IN ACCUMULATOR IN BINARY CODED DECIMAL.

EXAMPLE

| | |
|--|---------|
| POSITION IN SQP 1 | 35 |
| ACCUMULATOR 000 00 000 000 000 000 010 000 100 000 010 001 001 | |
| RPM | 2 4 2 9 |

PUSHING START CAUSES PROGRAM TO TEST SWITCH #6.

D. PRINT OUTS -- NONE

E. COMMENTS

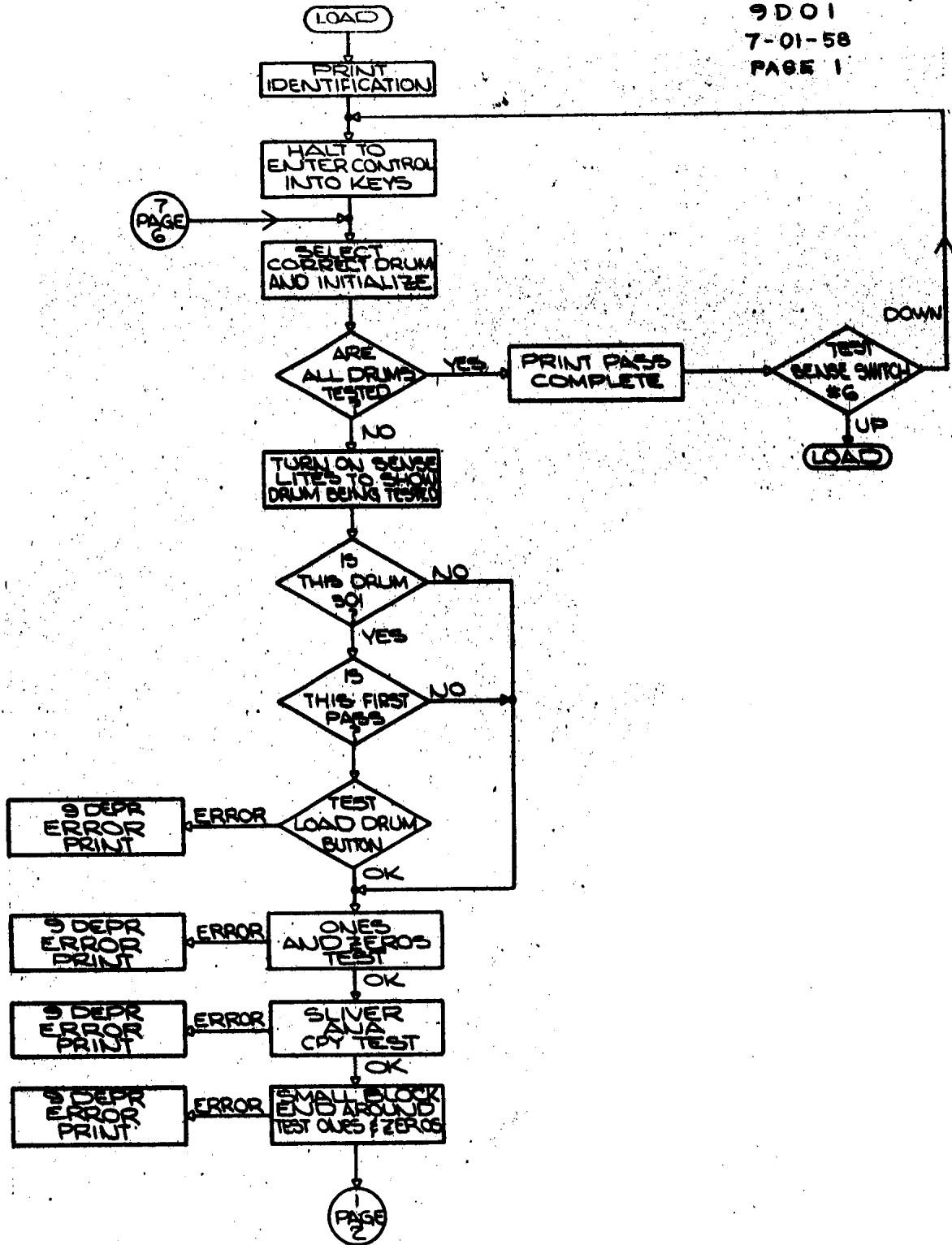
1. IN ORDER TO USE THIS PROGRAM IT IS NECESSARY TO CONNECT MF3 R06-1, SYSTEMS PAGE 7.03 TO MF4 F02-3, SYSTEMS PAGE 5.05.03, BY MEANS OF A JUMPER WIRE.
2. BECUASE OF THE COMPLETE ASYNCHRONISM OF THE DRUM AND PROGRAM, IS IT POSSIBLE FOR A COMPLETELY ERRONEOUS ANSWER TO RESULT. THIS WILL. HOWEVER, BE SO FANTASTIC THAT THE ERROR IS OBVIOUS. IT IS ADVISABLE TO CHECK EACH DRUM SEVERAL TIMES.
3. THE TIME REQUIRED FOR EACH PASS IS ABOUT 24 MILLISECONDS.
4. THIS TEST MUST BE TRANSFERRED INTO MANUALLY.

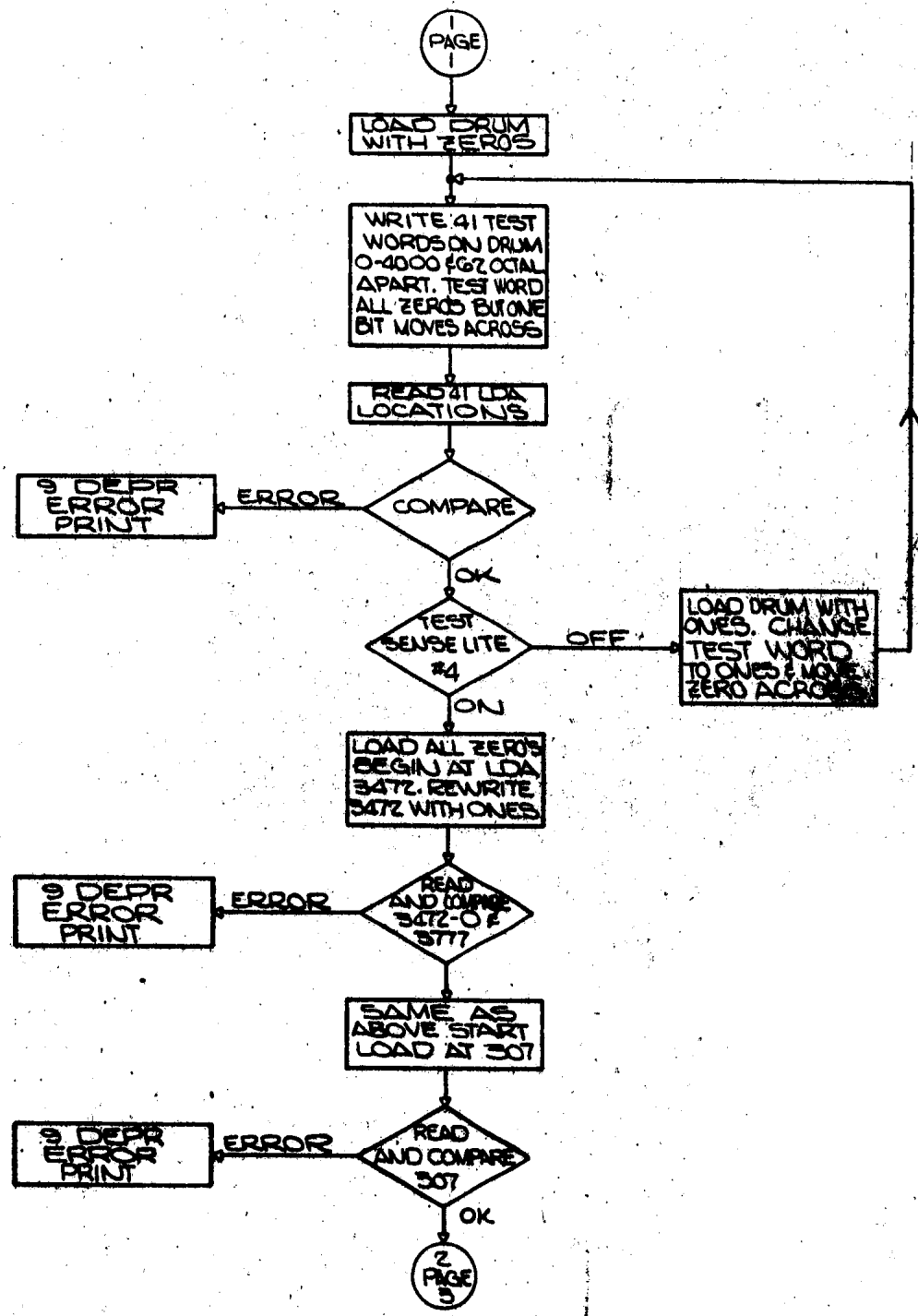
12. THE SPECIAL VERSION OF 9DEPR FOLLOWS THE DRUM SPEED TEST LOC 7115

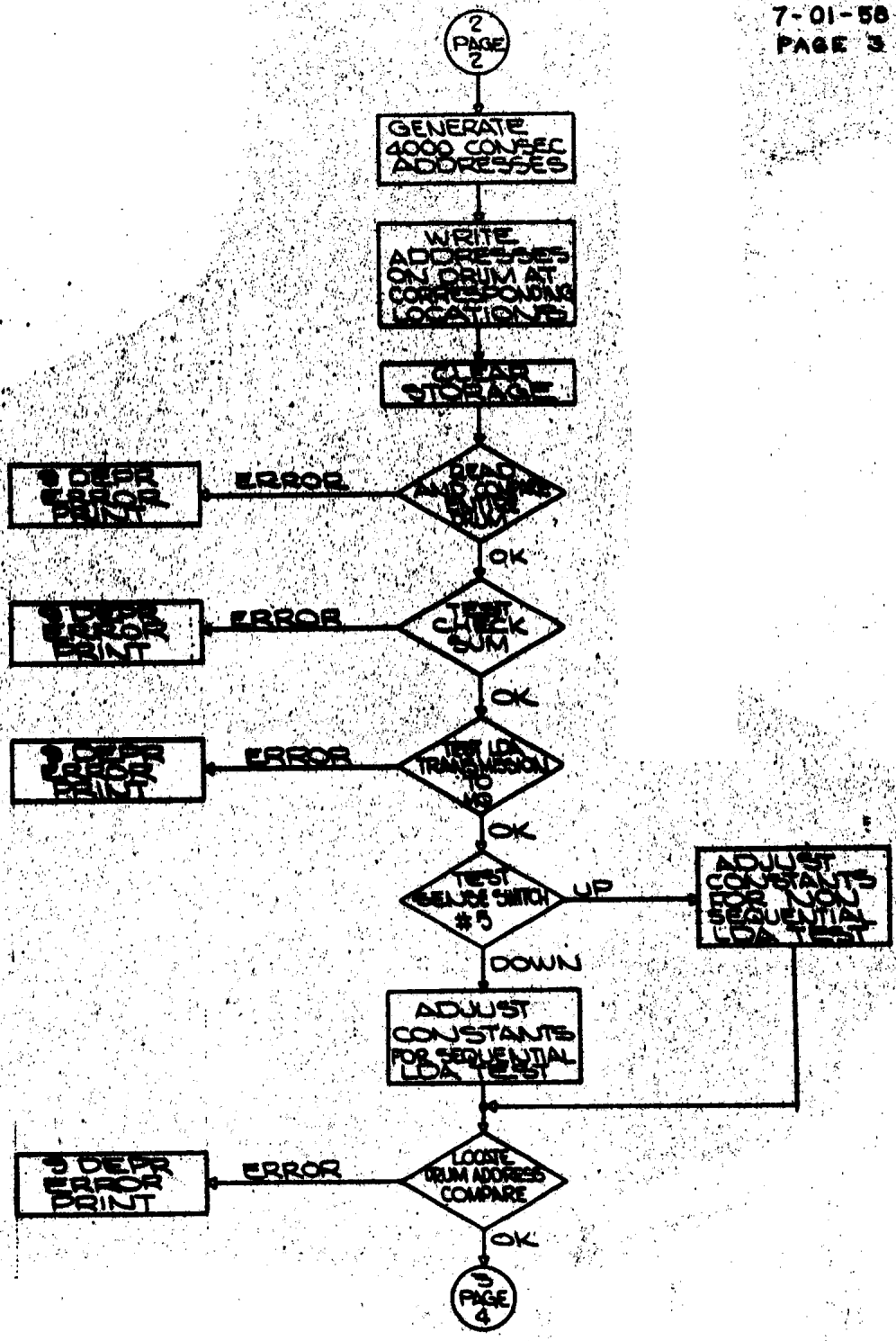
13. SPECIAL NOTE -- IF AN 8 HOUR RELIABILITY RUN, OR SOMTHING COMPARABLE, IS DESIRIED, STORE A TRA TO 70 AT LOCATION, CC-2, 0034.

INDEX TO THE SEVERAL TEST OF 9D01

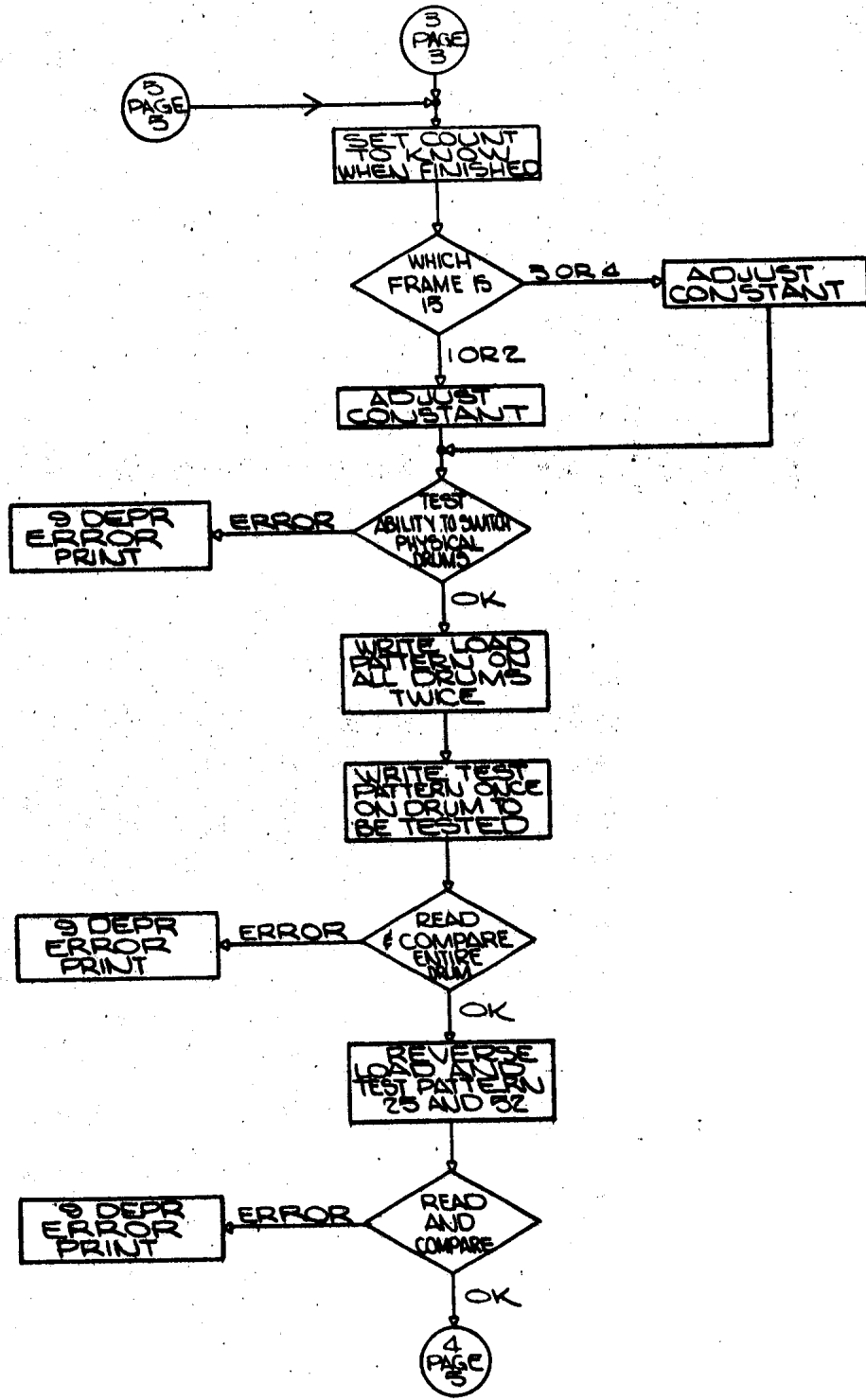
| NAME OF TEST | LOCATION |
|---|----------|
| 1. INITIALIZATION | 0030 |
| 2. LOAD DRUM TEST | 0416 |
| 3. ALL ZEROS AND ALL ONES TEST | 0443 |
| 4. SLIVER CPY ANA CPY CLOSE TIMING TEST | 0514 |
| 5. SHORT LDA DESIGNED FOR WORST PATTERN | 0534 |
| 6. WORST PATTERN TEST | 0577 |
| 7. TIMING PULSE TEST | 0675 |
| 8. LDA, SHORT AND LONG | 1002 |
| 9. LDA, SWITVHING PHYSICAL DRUMS | 1212 |
| 10. WORST SWITCHING CONDITIONS, USING 25 AND 52 PATTERN | 1452 |
| 11. WORST SWITCHING CONDITIONS, USING 707070007070 AND 070707770707 PATTERN | 1675 |
| 12. RANDOM NUMBER LDA TEST | 1712 |
| 13. RANDOM NUMBER FULL DRUM TEST | 2126 |
| 14. 522 U-SEC DELAY BETWEEN RDS AND LDA | 2212 |
| 15. NO HANG UP ON COPY | 2227 |
| 16. LDA IND. ADDR. | 2250 |
| 17. LDA INDEXED | 2316 |
| 18. LDA INDEXED AND IND. ADDR. | 2337 |
| 19. DRUM SPEED TEST | 7022 |

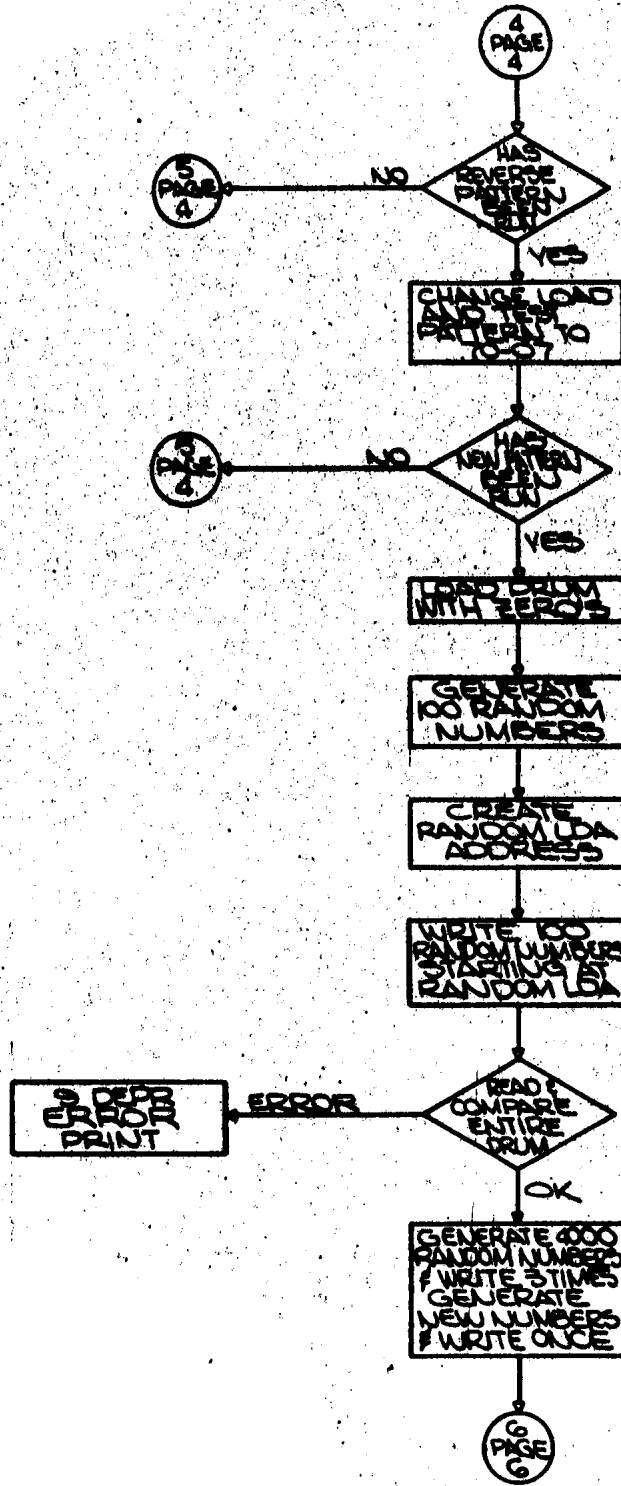


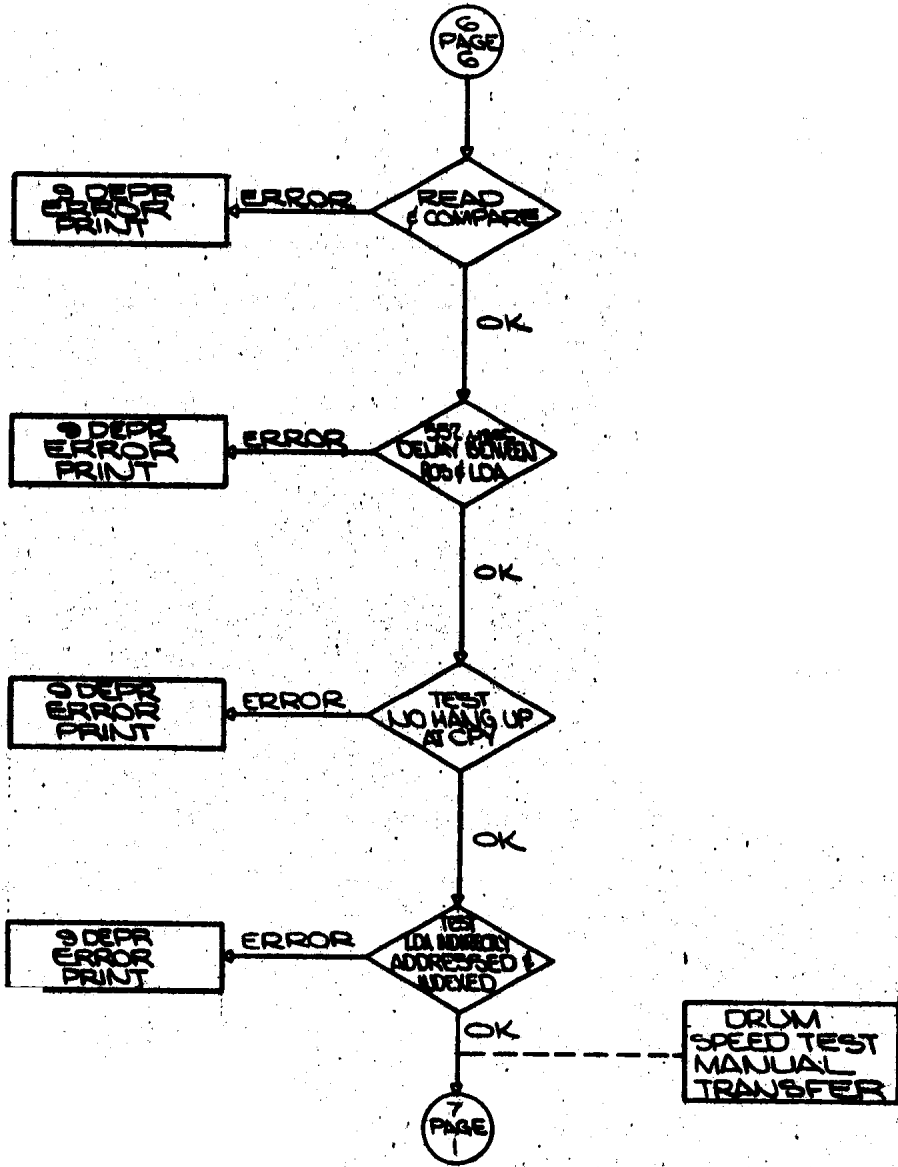




13







```
*****
*                               9D01A                               *
*          DRUM DIAGNOSTIC AND RELIABILITY TEST                    *
*          ALSO DRUM SPEED TEST                                    *
*****
```

00030 ORG 24

```
*****
*                               INITIALIZATION                               *
*****
```

* SET COUNT FOR BYPASSING LOAD DRUM TEST

```
00030  0760 00 0 00163  CCCC   SWT 3
00031  0074 00 1 06411           TSX WPRA2,1   TO PRINT HEADING

00032  0500 00 0 02606           CLA ONE      L 1
00033  0621 00 0 02441           STA CT4
```

* TO TEST DRUMS ENTER INTO KEYS ON HALT.
* DRUM 1-KEY 1, DRUM 2-KEY 2, DRUM 3-KEY 3,
* DRUM 4-KEY 4,DRUM 16-KEY 16

* KEYS MAY BE CHANGED TO CHANGE SELECTION
* ANYTIME AFTER START KEY IS DEPRESSED

* SWITCH FIVE DOWN TO SELECT LONG LDA TEST

```
00034  0000 00 0 00035           HTR *+1
```

* CLEAR DRUM CONTROL IMAGE

```
00035  0534 00 1 02637           LXA T20,1   L 20
00036  0600 00 1 02466  CC       STZ DCC,1
00037  2 00001 1 00036           TIX CC,1,1

00040  0500 00 0 02637           CLA T20     L+20
00041  0601 00 0 02443           STO Z20    COUNT FOR IND CNTRL

00042  0760 00 0 00004           ENK                BRING IN DRUMS TO TEST
00043  -0600 00 0 02643           STQ CNTRL
00044  0774 00 3 00000           AXT 0,3
00045  0441 00 0 02643           LDI CNTRL   PLACE KEYS IN INDICATORS
00046  -0056 00 200000  HUNT   LNT 200000  TEST FOR INDICATORS
00047  0020 00 0 00053           TRA *+4     IF NO BIT GO TO DECR. ADDR.
00050  0500 00 1 02546           CLA K301,1  CORRECT DRUM SELECTED
00051  0601 00 2 02446           STO DC1,2   PLACE IN CONTROL IMAGE
00052  1 77777 2 00053           TXI *+1,2,-1 DECREMENT CONTROL IMAGE
00053  1 77777 1 00054           TXI *+1,1,-1 DECREMENT CORRECT DRUM
00054  0500 00 0 02443           CLA Z20     L+20
00055  0402 00 0 02606           SUB ONE     L+1 - FOR COUNT OF SHIFTS
00056  0601 00 0 02443           STO Z20    SAVE COUNT
00057  0100 00 0 00065           TZE DS-6
00060  0500 00 0 00046           CLA HUNT    L LNT INSTRUCTION
```


| | | | | | | |
|-------|------|----|---|-------|----------|-------------------------|
| 00061 | 0771 | 00 | 0 | 00001 | ARS 1 | SHIFT TO TEST NEXT IND. |
| 00062 | 0621 | 00 | 0 | 00046 | STA HUNT | STORE NEW ADDR |
| 00063 | 0625 | 00 | 0 | 00046 | STT HUNT | STORE NEW TAG |
| 00064 | 0020 | 00 | 0 | 00046 | TRA HUNT | |

*RESTORE INITIAL LNT INSTRUCTION

| | | | | | | |
|-------|------|----|---|-------|-----------|--------------|
| 00065 | 0500 | 00 | 0 | 02433 | CLA RESTR | L LNT INSTR |
| 00066 | 0601 | 00 | 0 | 00046 | STO HUNT | RESTORE HUNT |
| 00067 | 0774 | 00 | 2 | 00000 | AXT 0,2 | CLEAR XRB |

* SELECT CORRECT DRUM TO BE TESTED

| | | | | | | |
|-------|------|----|---|-------|--------------|----------------------------|
| 00070 | 0500 | 00 | 0 | 02637 | CLA T20 | L 20 |
| 00071 | 0621 | 00 | 0 | 02445 | STA DC | |
| 00072 | 0760 | 00 | 0 | 00140 | SLF | TURN OFF ALL SENSE LIGHT |
| 00073 | 0534 | 00 | 1 | 02445 | DS LX A DC,1 | |
| 00074 | 0500 | 00 | 1 | 02466 | CLA DCC,1 | |
| 00075 | 0621 | 00 | 0 | 02466 | STA DCC | SAVE |
| 00076 | 0100 | 00 | 0 | 02423 | TZE SW6 | HAVE ALL DRUMS BEEN TESTED |

| | | | | | | |
|-------|------|----|---|-------|----------|----------------------|
| 00077 | 0340 | 00 | 0 | 02555 | CAS K310 | L 310 |
| 00100 | 0020 | 00 | 0 | 00120 | TRA HIGH | Y LESS AC FR3 OR FR4 |
| 00101 | 0020 | 00 | 0 | 00111 | TRA F2 | Y EQUAL AC |
| 00102 | 0340 | 00 | 0 | 02551 | CAS K304 | L 304 |
| 00103 | 0020 | 00 | 0 | 00111 | TRA F2 | Y LESS AC |
| 00104 | 0020 | 00 | 0 | 00145 | TRA DR4 | Y EQUAL AC |
| 00105 | 0340 | 00 | 0 | 02547 | CAS K302 | L 302 |
| 00106 | 0020 | 00 | 0 | 00142 | TRA DR3 | Y LESS AC |
| 00107 | 0020 | 00 | 0 | 00140 | TRA DR2 | Y EQUAL AC |
| 00110 | 0020 | 00 | 0 | 00136 | TRA DR1 | Y GREATER AC |

| | | | | | | |
|-------|------|----|---|-------|-------------|--------------|
| 00111 | 0340 | 00 | 0 | 02553 | F2 CAS K306 | L 3056 |
| 00112 | 0020 | 00 | 0 | 00115 | TRA F2+4 | Y LESS AC |
| 00113 | 0020 | 00 | 0 | 00152 | TRA DR6 | Y EQUAL AC |
| 00114 | 0020 | 00 | 0 | 00147 | TRA DR5 | Y GREATER AC |
| 00115 | 0402 | 00 | 0 | 02554 | SUB K307 | L 307 |
| 00116 | 0100 | 00 | 0 | 00155 | TZE DR7 | |
| 00117 | 0020 | 00 | 0 | 00161 | TRA DR8 | |

| | | | | | | |
|-------|------|----|---|-------|---------------|-------------------|
| 00120 | 0340 | 00 | 0 | 02561 | HIGH CAS K314 | L 314 |
| 00121 | 0020 | 00 | 0 | 00127 | TRA FR4 | Y LESS AC |
| 00122 | 0020 | 00 | 0 | 00145 | TRA DR4 | Y EQUAL AC DR14 |
| 00123 | 0340 | 00 | 0 | 02557 | CAS K312 | L 312 |
| 00124 | 0020 | 00 | 0 | 00142 | TRA DR3 | Y LESS AC DR13 |
| 00125 | 0020 | 00 | 0 | 00140 | TRA DR2 | Y EQUAL AC DR12 |
| 00126 | 0020 | 00 | 0 | 00136 | TRA DR1 | Y GREATER AC DR11 |

| | | | | | | |
|-------|------|----|---|-------|--------------|-------------------|
| 00127 | 0340 | 00 | 0 | 02563 | FR4 CAS K316 | L 316 |
| 00130 | 0020 | 00 | 0 | 00133 | TRA FR4+4 | Y LESS AC |
| 00131 | 0020 | 00 | 0 | 00152 | TRA DR6 | Y EQUAL AC DR 16 |
| 00132 | 0020 | 00 | 0 | 00147 | TRA DR5 | Y GREATER AC DR15 |
| 00133 | 0402 | 00 | 0 | 02564 | SUB K317 | L 317 |
| 00134 | 0100 | 00 | 0 | 00155 | TZE DR7 | DR 17 |
| 00135 | 0020 | 00 | 0 | 00161 | TRA DR8 | DR 20 |

* TURN ON LIGHTS FOR SELECTED DRUM OF FR1 OR FR2

| | | | | | | | |
|-------|------|----|---|-------|-----|---------|-----------------|
| 00136 | 0760 | 00 | 0 | 00141 | DR1 | SLN 1 | TURN ON LIGHT 1 |
| 00137 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |
| 00140 | 0760 | 00 | 0 | 00142 | DR2 | SLN 2 | TURN ON LIGHT 2 |
| 00141 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |
| 00142 | 0760 | 00 | 0 | 00141 | DR3 | SLN 1 | TURN ON LIGHT 1 |
| 00143 | 0760 | 00 | 0 | 00142 | | SLN 2 | TURN ON LIGHT 2 |
| 00144 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |
| 00145 | 0760 | 00 | 0 | 00143 | DR4 | SLN 3 | TURN ON LIGHT 3 |
| 00146 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |

* TURN ON LIGHTS FOR SELECTED DRUM OF FR2 OR FR4

| | | | | | | | |
|-------|------|----|---|-------|-----|---------|-----------------|
| 00147 | 0760 | 00 | 0 | 00141 | DR5 | SLN 1 | TURN ON LIGHT 1 |
| 00150 | 0760 | 00 | 0 | 00143 | | SLN 3 | TURN ON LIGHT 3 |
| 00151 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |
| 00152 | 0760 | 00 | 0 | 00142 | DR6 | SLN 2 | TURN ON LIGHT 2 |
| 00153 | 0760 | 00 | 0 | 00143 | | SLN 3 | TURN ON LIGHT 3 |
| 00154 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |
| 00155 | 0760 | 00 | 0 | 00141 | DR7 | SLN 1 | TURN ON LIGHT 1 |
| 00156 | 0760 | 00 | 0 | 00142 | | SLN 2 | TURN ON LIGHT 2 |
| 00157 | 0760 | 00 | 0 | 00143 | | SLN 3 | TURN ON LIGHT 3 |
| 00160 | 0020 | 00 | 0 | 00161 | | TRA DR8 | |

* STORE SELECTED DRUM ADDRESS IN ALL RDS AND WRS INSTRUCTIONS

| | | | | | | | |
|-------|------|----|---|-------|-----|-------------|-----------------------|
| 00161 | 0500 | 00 | 0 | 02466 | DR8 | CLA DCC | SELECTED DRUM ADDRESS |
| 00162 | 0621 | 00 | 0 | 00450 | | STA A+1 | |
| 00163 | 0621 | 00 | 0 | 00456 | | STA A1 | |
| 00164 | 0621 | 00 | 0 | 00465 | | STA A2 | |
| 00165 | 0621 | 00 | 0 | 00515 | | STA CPYNO+1 | |
| 00166 | 0621 | 00 | 0 | 01003 | | STA LDAA | |
| 00167 | 0621 | 00 | 0 | 01024 | | STA LDAB-2 | |
| 00170 | 0621 | 00 | 0 | 01046 | | STA 1LDA | |
| 00171 | 0621 | 00 | 0 | 01124 | | STA LDA5+2 | |
| 00172 | 0621 | 00 | 0 | 01155 | | STA LDA7+4 | |
| 00173 | 0621 | 00 | 0 | 02467 | | STA DRUM | |
| 00174 | 0621 | 00 | 0 | 01623 | | STA DR+3 | |
| 00175 | 0621 | 00 | 0 | 02105 | | STA R10 | |
| 00176 | 0621 | 00 | 0 | 00607 | | STA A7+1 | |
| 00177 | 0621 | 00 | 0 | 00622 | | STA A9 | |
| 00200 | 0621 | 00 | 0 | 00640 | | STA A11 | |
| 00201 | 0621 | 00 | 0 | 00675 | | STA TPU | |
| 00202 | 0621 | 00 | 0 | 00706 | | STA TP1 | |
| 00203 | 0621 | 00 | 0 | 00723 | | STA TP2 | |
| 00204 | 0621 | 00 | 0 | 00740 | | STA TP3 | |
| 00205 | 0621 | 00 | 0 | 00753 | | STA TP4 | |
| 00206 | 0621 | 00 | 0 | 00765 | | STA TP5 | |
| 00207 | 0621 | 00 | 0 | 01712 | | STA R | |
| 00210 | 0621 | 00 | 0 | 01734 | | STA R3 | |
| 00211 | 0621 | 00 | 0 | 01750 | | STA R4 | |
| 00212 | 0621 | 00 | 0 | 02136 | | STA R13 | |

| | | | | | |
|-------|------|----|---|-------|--------------|
| 00213 | 0621 | 00 | 0 | 02160 | STA R14 |
| 00214 | 0621 | 00 | 0 | 02212 | STA D500 |
| 00215 | 0621 | 00 | 0 | 00536 | STA L62 |
| 00216 | 0621 | 00 | 0 | 00554 | STA L62A |
| 00217 | 0621 | 00 | 0 | 02233 | STA BEGIN+4 |
| 00220 | 0621 | 00 | 0 | 02250 | STA BUG |
| 00221 | 0621 | 00 | 0 | 02301 | STA AGAIN+1 |
| 00222 | 0621 | 00 | 0 | 02310 | STA AGAIN+8 |
| 00223 | 0621 | 00 | 0 | 02330 | STA INDEX+10 |
| 00224 | 0621 | 00 | 0 | 02336 | STA BUGS |
| 00225 | 0621 | 00 | 0 | 02361 | STA BUGS+19 |
| 00226 | 0621 | 00 | 0 | 02364 | STA BUGS+22 |

* ADJUST DUMMY INSTRUCTIONS FOR PRINT ROUTINE

| | | | | | | |
|-------|------|----|---|-------|-------------|----------------------------|
| 00227 | 0500 | 00 | 0 | 02467 | CLA DRUM | L ADDRESS OF SELECTED DRUM |
| 00230 | 0402 | 00 | 0 | 02545 | SUB K300 | L 300 |
| 00231 | 0340 | 00 | 0 | 02533 | CAS K10 | L 10 |
| 00232 | 0020 | 00 | 0 | 00252 | TRA UP | Y LESS AC |
| 00233 | 0020 | 00 | 0 | 00243 | TRA FM2 | Y EQUAL AC |
| 00234 | 0340 | 00 | 0 | 02524 | CAS K4 | L 4 |
| 00235 | 0020 | 00 | 0 | 00243 | TRA FM2 | Y LESS AC |
| 00236 | 0020 | 00 | 0 | 00276 | TRA D4 | Y EQUAL AC |
| 00237 | 0340 | 00 | 0 | 02626 | CAS TWO | L 2 |
| 00240 | 0020 | 00 | 0 | 00274 | TRA D3 | Y LESS AC |
| 00241 | 0020 | 00 | 0 | 00272 | TRA D2 | Y EQUAL AC |
| 00242 | 0020 | 00 | 0 | 00270 | TRA D1 | Y GREATER AC |
| 00243 | 0340 | 00 | 0 | 02476 | FM2 CAS D6B | L+6 |
| 00244 | 0020 | 00 | 0 | 00247 | TRA FM2+4 | Y LESS AC |
| 00245 | 0020 | 00 | 0 | 00302 | TRA D6 | Y EQUAL AC |
| 00246 | 0020 | 00 | 0 | 00300 | TRA D5 | Y GREATER AC |
| 00247 | 0402 | 00 | 0 | 02477 | SUB D7B | |
| 00250 | 0100 | 00 | 0 | 00304 | TZE D7 | |
| 00251 | 0020 | 00 | 0 | 00306 | TRA D10 | |
| 00252 | 0340 | 00 | 0 | 02535 | UP CAS K14 | L 14 |
| 00253 | 0020 | 00 | 0 | 00261 | TRA FM4 | Y LESS AC |
| 00254 | 0020 | 00 | 0 | 00316 | TRA D14 | Y EQUAL AC |
| 00255 | 0340 | 00 | 0 | 02534 | CAS K12 | L 12 |
| 00256 | 0020 | 00 | 0 | 00314 | TRA D13 | Y LESS AC |
| 00257 | 0020 | 00 | 0 | 00312 | TRA D12 | Y EQUAL AC |
| 00260 | 0020 | 00 | 0 | 00310 | TRA D11 | |
| 00261 | 0340 | 00 | 0 | 02537 | FM4 CAS K16 | L 16 |
| 00262 | 0020 | 00 | 0 | 00265 | TRA FM4+4 | Y LESS AC |
| 00263 | 0020 | 00 | 0 | 00322 | TRA D16 | Y EQUAL AC |
| 00264 | 0020 | 00 | 0 | 00320 | TRA D15 | |
| 00265 | 0402 | 00 | 0 | 02540 | SUB K17 | L 17 |
| 00266 | 0100 | 00 | 0 | 00324 | TZE D17 | |
| 00267 | 0020 | 00 | 0 | 00326 | TRA D20 | |

| | | | | | | | |
|-------|---------|----|-------|-------|-----|----------------|----------------------|
| 00270 | 0500 | 00 | 0 | 02471 | D1 | CLA D1B | L 00 01 |
| 00271 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00272 | 0500 | 00 | 0 | 02472 | D2 | CLA D2B | L 00 02 |
| 00273 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00274 | 0500 | 00 | 0 | 02473 | D3 | CLA D3B | L 00 03 |
| 00275 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00276 | 0500 | 00 | 0 | 02474 | D4 | CLA D4B | L 00 04 |
| 00277 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00300 | 0500 | 00 | 0 | 02475 | D5 | CLA D5B | L 00 05 |
| 00301 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00302 | 0500 | 00 | 0 | 02476 | D6 | CLA D6B | L 00 06 |
| 00303 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00304 | 0500 | 00 | 0 | 02477 | D7 | CLA D7B | L 00 07 |
| 00305 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00306 | 0500 | 00 | 0 | 02500 | D10 | CLA D8B | L 00 10 |
| 00307 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00310 | 0500 | 00 | 0 | 02501 | D11 | CLA D9B | L 00 11 |
| 00311 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00312 | 0500 | 00 | 0 | 02502 | D12 | CLA D10B | L 01 00 |
| 00313 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00314 | 0500 | 00 | 0 | 02503 | D13 | CLA D11B | L 01 01 |
| 00315 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00316 | 0500 | 00 | 0 | 02504 | D14 | CLA D12B | L 01 02 |
| 00317 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00320 | 0500 | 00 | 0 | 02505 | D15 | CLA D13B | L 01 03 |
| 00321 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00322 | 0500 | 00 | 0 | 02506 | D16 | CLA D14B | L 01 04 |
| 00323 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00324 | 0500 | 00 | 0 | 02507 | D17 | CLA D15B | L 01 05 |
| 00325 | 0020 | 00 | 0 | 00327 | | TRA SD | |
| 00326 | 0500 | 00 | 0 | 02510 | D20 | CLA D16B | L 01 06 |
| 00327 | 0621 | 00 | 0 | 02470 | SD | STA DUMY | |
| 00330 | 0500 | 00 | 0 | 02654 | | CLA MASK1 | TO SET UP PASS IMAGE |
| 00331 | 0534 | 00 | 4 | 02656 | | LXA TWTY,4 | L 24 |
| 00332 | 0320 | 00 | 4 | 02716 | | ANS PRIMG+21,4 | CLEAR DRUM ADDR BITS |
| 00333 | 2 00002 | 4 | 00332 | | | TIX *-1,4,2 | |
| 00334 | 0500 | 00 | 0 | 02470 | | CLA DUMY | L DRUM UNIT |
| 00335 | -0320 | 00 | 0 | 02540 | | ANA K17 | L 17 |
| 00336 | 0767 | 00 | 0 | 00001 | | ALS 1 | DOUBLE ADDR |
| 00337 | 0734 | 00 | 4 | 00000 | | PAX 0,4 | DRUM ADDR TO INDEX |
| 00340 | 0500 | 00 | 0 | 02655 | | CLA LBIT | L 4000000 |
| 00341 | -0602 | 00 | 4 | 02714 | | ORS PRIMG+19,4 | OR IN LOW BIT |
| 00342 | 0500 | 00 | 0 | 02470 | | CLA DUMY | L DRUM UNIT |
| 00343 | -0320 | 00 | 0 | 02573 | | ANA K3700 | L 3700 |
| 00344 | 0771 | 00 | 0 | 00005 | | ARS 5 | SHIFT INTO PLACE |
| 00345 | 0734 | 00 | 4 | 00000 | | PAX 0,4 | DRUM ADDR TO INDEX |
| 00346 | 0500 | 00 | 0 | 02657 | | CLA HBIT | L 10000000 |
| 00347 | -0602 | 00 | 4 | 02714 | | ORS PRIMG+19,4 | OR IN HIGH BIT |
| 00350 | 0500 | 00 | 0 | 02470 | DMR | CLA DUMY | |
| 00351 | -0501 | 00 | 0 | 02611 | | ORA RDR | L 512451600000 |
| 00352 | 0602 | 00 | 0 | 00455 | | SLW A1-1 | |

| | | | | | | | | | |
|-------|-------|----|---|-------|-----|-----|--------|---|--------------|
| 00353 | 0602 | 00 | 0 | 00464 | | SLW | A2-1 | | |
| 00354 | 0602 | 00 | 0 | 01023 | | SLW | LDAB-3 | | |
| 00355 | 0602 | 00 | 0 | 01617 | | SLW | DR-1 | | |
| 00356 | 0602 | 00 | 0 | 00637 | | SLW | A11-1 | | |
| 00357 | 0602 | 00 | 0 | 02211 | | SLW | D500-1 | | |
| 00360 | 0602 | 00 | 0 | 02165 | | SLW | R15-1 | | |
| 00361 | 0500 | 00 | 0 | 02470 | DML | CLA | DUMY | | |
| 00362 | -0501 | 00 | 0 | 02600 | | ORA | LDA | L | 432421600000 |
| 00363 | 0602 | 00 | 0 | 01747 | | SLW | R4-1 | | |
| 00364 | 0602 | 00 | 0 | 01045 | | SLW | 1LDA-1 | | |
| 00365 | 0602 | 00 | 0 | 01121 | | SLW | LDA5-1 | | |
| 00366 | 0602 | 00 | 0 | 00705 | | SLW | TP1-1 | | |
| 00367 | 0602 | 00 | 0 | 00722 | | SLW | TP2-1 | | |
| 00370 | 0602 | 00 | 0 | 00737 | | SLW | TP3-1 | | |
| 00371 | 0602 | 00 | 0 | 00764 | | SLW | TP5-1 | | |
| 00372 | 0602 | 00 | 0 | 02104 | | SLW | R10-1 | | |
| 00373 | 0602 | 00 | 0 | 00553 | | SLW | L62A-1 | | |

* ADJUST CONSTANTS FOR PRINT ROUTINE

| | | | | | | | | | |
|-------|------|----|---|-------|--|-----|-------|-----|-----------------|
| 00374 | 0500 | 00 | 0 | 02576 | | CLA | K4000 | L | 4000 |
| 00375 | 0601 | 00 | 0 | 07173 | | STO | WDNO | | |
| 00376 | 0500 | 00 | 0 | 02606 | | CLA | ONE | | |
| 00377 | 0601 | 00 | 0 | 07174 | | STO | RECNO | SET | REC NO CONSTANT |

* ADJUST FOR SELECTING NEXT DRUM

| | | | | | | | | | |
|-------|-------|-------|---|-------|-----|-----|------------|--|--|
| 00400 | 2 | 00001 | 1 | 00401 | DND | TIX | DND+1,1,1, | | |
| 00401 | -0754 | 00 | 1 | 00000 | | PXD | 0,1 | | |
| 00402 | 0771 | 00 | 0 | 00022 | | ARS | 18 | | |
| 00403 | 0621 | 00 | 0 | 02445 | | STA | DC | | |

* ENTER LOAD DRUM TEST FOR DRUM 1 ONLY

| | | | | | | | | | |
|-------|-------|----|---|-------|--|-----|------|--------|------|
| 00404 | 0500 | 00 | 0 | 02546 | | CLA | K301 | L | 301 |
| 00405 | 0402 | 00 | 0 | 02467 | | SUB | DRUM | SELECT | DRUM |
| 00406 | -0120 | 00 | 0 | 00440 | | TMI | NP | | |

* BYPASS LOAD DRUM TEST WHEN REPEATING TESTS

| | | | | | | | | | |
|-------|-------|----|---|-------|--|-----|------|------|--------|
| 00407 | 0500 | 00 | 0 | 02606 | | CLA | ONE | L | 1 |
| 00410 | 0402 | 00 | 0 | 02441 | | SUB | CT4 | INIT | LOAD 1 |
| 00411 | -0120 | 00 | 0 | 00440 | | TMI | NP | | |
| 00412 | 0500 | 00 | 0 | 02441 | | CLA | CT4 | | |
| 00413 | 0400 | 00 | 0 | 02606 | | ADD | ONE | L | 1 |
| 00414 | 0621 | 00 | 0 | 02441 | | STA | CT4 | | |
| 00415 | 0020 | 00 | 0 | 00417 | | TRA | LOAD | | |

* TEST LOAD DRUM *

| | | | | | | | | | |
|-------|--------------|----|---|-------|------|-----|------|----|--|
| 00416 | 662451600001 | | | | | BCD | 1WDR | 01 | |
| 00417 | 0766 | 00 | 0 | 00301 | LOAD | WDR | 1 | | |

00420 0700 00 0 02523 CPY K3 L TRA LOAD1
00421 0700 00 0 02522 CPY K2 L TRA LOAD+4
00422 0000 00 0 00000 HTR 0 PRESS LOAD DRUM BUTTUN
00423 0560 00 0 02523 LDQ K3
00424 0500 00 0 00000 CLA 0
00425 0074 00 4 07120 TSX ERROR-1,4 TRANSFERED TO 1 INSTEAD OF 0
00426 0020 00 0 00417 TRA LOAD

00427 0500 00 0 00001 LOAD1 CLA 1
00430 0340 00 0 02522 CAS K2 L TRA LOAD+4
00431 0020 00 0 00433 TRA LOAD1+4 ERROR
00432 0020 00 0 00435 TRA LOAD1+6 OK
00433 0560 00 0 02522 LDQ K2
00434 0074 00 4 07121 TSX ERROR,4 DID NOT LOAD CORRECT
INFORMATION INTO ADDRESS
00435 0074 00 4 07126 TSX OK,4
00436 0020 00 0 00417 TRA LOAD

* POST RESTART

00437 0761 00 0 00000 NOP
00440 0500 00 0 02525 NP CLA K5 L TRA CCCC+4
00441 0601 00 0 00000 STO 0
00442 0601 00 0 07021 STO RN+63 PRIME RN GEN

* ENTER ALL ZEROS TEST AND ALL ONES TEST *

00443 0500 00 0 02615 AA CLA TEST1 L +0
00444 0601 00 0 02627 STO T1
00445 -0760 00 0 00144 SLT 4 TURN OFF SENSE LIGHT 4
00446 0761 00 0 00000 NOP

* TEST WRITE ON DRUM

00447 0534 00 1 02576 A LXA K4000,1 L 4000
00450 0766 00 0 00000 WRS WRITE ON SELECTED DRUM
00451 0700 00 0 02627 CPY T1
00452 2 00001 1 00451 TIX A+2,1,1
00453 0074 00 4 07126 TSX OK,4
00454 0020 00 0 00447 TRA A LOOP IN WRITE ON DRUM

* TEST READ ON DRUM

00455 512451606060 BCD 1RDR
00456 0762 00 0 00000 A1 RDS READ OUT DRUM TO INSURE
THAT READING DOES NOT
AFFECT STORED INFO
00457 0534 00 1 02576 LXA K4000,1 L 4000
00460 0700 00 0 06720 CPY X-1
00461 2 00001 1 00460 TIX A1+2,1,1
00462 0074 00 4 07126 TSX OK,4
00463 0020 00 0 00456 TRA A1 LOOP IN DRUM READ OUT

* READ DRUM INTO STORAGE

```
00464 512451606060          BCD 1RDR
00465 0762 00 0 00000 A2    RDS
00466 0534 00 1 02576          LXA K4000,1 L 4000
00467 0700 00 1 06721          CPY X,1      COPY DRUM INTO STORAGE
00470 2 00001 1 00467          TIX A2+2,1,1

00471 0534 00 1 02576          LXA K4000,1 L 4000
00472 0500 00 1 06721 A3    CLA X,1      ERROR WORD IN ACC
00473 0340 00 0 02627          CAS T1
00474 0020 00 0 00476          TRA A3+4    ERROR
00475 0020 00 0 00501          TRA A4      OK
00476 0560 00 0 02627          LDQ T1      CORRECT WORD
00477 0074 00 4 07117          TSX ERROR-2,4
00500 0020 00 0 00465          TRA A2

00501 2 00001 1 00472 A4    TIX A3,1,1
00502 0074 00 4 07126          TSX OK,4
00503 0020 00 0 00465          TRA A2

00504 0761 00 0 00000          NOP
00505 -0760 00 0 00144 A5    SLT 4      TEST SENSE LIGHT 4
00506 0020 00 0 00510          TRA A5+3    ENTER ALL ONES TEST
00507 0020 00 0 00514          TRA CPYNO   ALL ONES TEST COMPLETED
00510 0500 00 0 02616          CLA TEST2   L ALL ONES
00511 0601 00 0 02627          STO T1
00512 0760 00 0 00144          SLN 4      TURN ON SENSE LIGHT 4
00513 0020 00 0 00447          TRA A      ENTER ALL ONES TEST

*****
*          TEST FOR A SLIVER ANA CPY TIMING CONDITION          *
*****

00514 0534 00 1 02542 CPYNO LXA K50,1
00515 0766 00 0 00000          WRS
00516 0700 00 0 02607          CPY ONES    IOT MAY COME UP HERE
00517 -0320 00 0 00000          ANA        36 US INSTR-THIS INSTR.
                                          MAY BE CHANGED MANUALLY
                                          FOR CHANGE IN TIMING

00520 0700 00 0 02607          CPY ONES
00521 2 00001 1 00516          TIX CPYNO+2,1,1
00522 0020 00 0 00524          TRA *+2

00523 314663606060          BCD 1IOT

00524 0760 00 0 00005          IOT
00525 0020 00 0 00527          TRA *+2    ERROR-SHBE OFF
00526 0020 00 0 00531          TRA *+3    OK
00527 0074 00 4 07120          TSX ERROR-1,4 IOT ON TIMING
00530 -3 00000 4 00524          TXL *-4,4  BETWEEN COPYS LESS THEN
00531 0074 00 4 07126          TSX OK,4   36US
00532 0020 00 0 00514          TRA CPYNO
00533 0761 00 0 00000          NOP
```

```
*      SHORT LDA TEST WRITTEN PRIMARILY TO BE      *
*      IDENTICAL WITH THE LAD PATTERN USED IN      *
*      THE WORST PATTERN TEST WHICH FOLLOWS      *
*      SO THAT IF AN ERROR OCCURS IN THE WORST PATTERN *
*      TEST THE POSSIBILITY OF IT BEING AN LDA ERROR *
*      MAY BE ELIMINATED.                          *
*****
```

```
00534 0600 00 0 02605 L61 STZ LD37
00535 0534 00 1 02576 LXA K4000,1 L 4000

00536 0766 00 0 00000 L62 WRS
00537 0460 00 0 02605 LDA LD37
00540 0700 00 0 02605 CPY LD37
00541 0500 00 0 02605 CLA LD37
00542 0400 00 0 02543 ADD K62 L 62
00543 0601 00 0 02605 STO LD37 ADJUST LDA
00544 0560 00 0 02624 LDQ TP
00545 -0773 00 0 00001 RQL 1
00546 -0600 00 0 02624 STQ TP
00547 2 00062 1 00536 TIX L62,1,50

00550 0534 00 1 02576 LXA K4000,1 L 4000
00551 0600 00 0 02605 STZ LD37
00552 0020 00 0 00554 TRA L62A

00553 432421606060 BCD 1LDA
00554 0762 00 0 00000 L62A RDS
00555 0460 00 0 02605 LDA LD37
00556 0700 00 0 02731 CPY WPA
00557 0500 00 0 02731 CLA WPA WORD READ
00560 0340 00 0 02605 CAS LD37
00561 0020 00 0 00563 TRA L62A+7 ERROR-LDA
00562 0020 00 0 00566 TRA L62B OK
00563 0560 00 0 02605 LDQ LD37 ERROR-LDA
00564 0074 00 4 07117 TSX ERROR-2,4
00565 0020 00 0 00554 TRA L62A

00566 0500 00 0 02605 L62B CLA LD37
00567 0400 00 0 02543 ADD K62
00570 0601 00 0 02605 STO LD37
00571 0560 00 0 02625 LDQ TPP
00572 -0773 00 0 00001 RQL 1
00573 -0600 00 0 02625 STQ TPP
00574 2 00062 1 00554 TIX L62A,1,50 NEXT PASS
00575 0074 00 4 07126 TSX OK,4
00576 0020 00 0 00534 TRA L61
```

```
*****
*      ENTER WORST PATTERN TEST                      *
*****
```

```
00577 0761 00 0 00000 NOP
00600 0500 00 0 02615 A6 CLA TEST1 L +0
00601 0601 00 0 02627 STO T1
00602 -0760 00 0 00144 SLT 4 TURN LIGHT 4 OFF
```


00603 0761 00 0 00000 NOP
00604 0500 00 0 02606 CLA ONE L 1
00605 0601 00 0 02633 STO T5

* LOAD DRUM WITH ALL ZEROS

00606 0534 00 1 02576 A7 LXA K4000,1
00607 0766 00 0 00000 WRS
00610 0700 00 0 02627 CPY T1
00611 2 00001 1 00610 TIX A7+2,1,1
00612 0074 00 4 07126 TSX OK,4
00613 0020 00 0 00606 TRA A7 WRITE LOOP

* WRITE 41 TEST WORDS WELL SPACED ON DRUM JUST LOADED

00614 0761 00 0 00000 NOP
00615 0534 00 1 02576 LXA K4000,1 L 4000
00616 0600 00 0 02605 STZ LD37
00617 0560 00 0 02633 LDQ T5
00620 -0600 00 0 02624 STQ TP
00621 -0600 00 0 02625 STQ TPP

00622 0766 00 0 00000 A9 WRS
00623 0460 00 0 02605 LDA LD37
00624 0700 00 0 02624 CPY TP
00625 0500 00 0 02605 CLA LD37
00626 0400 00 0 02543 ADD K62 L 62
00627 0601 00 0 02605 STO LD37
00630 0560 00 0 02624 LDQ TP ADJUST FOR WRITTING
00631 -0773 00 0 00001 RQL 1 NEXT TEST WORD
00632 -0600 00 0 02624 STQ TP
00633 2 00062 1 00622 TIX A9,1,50

* READ DRUM INTO STORAGE AND COMPARE

00634 0534 00 1 02576 LXA K4000,1 L 40000
00635 0600 00 0 02605 STZ LD37
00636 0020 00 0 00640 TRA A11

* AN ERROR HERE IS MOST LIKELY DUE TO DROPPING
* OR PICKING UP A BIT AND WOULD THEREFORE
* BE A WRITE OR READ ERROR. ONLY WHEN THE
* LDA TEST, WHICH IMMEDIATELY PRECEDES THIS TEST.
* FAILS SHOULD AN LDA ERROR BE CONSIDERED.

00637 512451606060 BCD 1RDR
00640 0762 00 0 00000 A11 RDS
00641 0460 00 0 02605 LDA LD37
00642 0700 00 0 02731 CPY WPA
00643 0500 00 0 02731 CLA WPA
00644 0340 00 0 02625 CAS TPP
00645 0020 00 0 00647 TRA A11+7 ERROR
00646 0020 00 0 00652 TRA A12 OK
00647 0560 00 0 02625 LDQ TPP ERROR
00650 0074 00 4 07117 TSX ERROR-2,4
00651 0020 00 0 00640 TRA A11

00652 0500 00 0 02605 A12 CLA LD37 ADJUST FOR NEXT LDA
00653 0400 00 0 02543 ADD K62 L 62
00654 0621 00 0 02605 STA LD37
00655 0560 00 0 02625 LDQ TPP
00656 -0773 00 0 00001 RQL 1 SHIFT WORD
00657 -0600 00 0 02625 STQ TPP
00660 2 00062 1 00640 TIX A11,1,50 NEXT PASS
00661 0074 00 4 07126 TSX OK,4
00662 0020 00 0 00600 TRA A6 REPEAT TEST

* ENTER ALTERNATE WORST PATTERN

00663 0761 00 0 00000 NOP
00664 -0760 00 0 00144 A15 MSE 100 TEST LIGHT 4
00665 0020 00 0 00667 TRA A15+3
00666 0020 00 0 00675 TRA TPU
00667 0500 00 0 02512 CLA KP0 L 777 777 777 776
00670 0601 00 0 02633 STO T5
00671 0500 00 0 02616 CLA TEST2
00672 0601 00 0 02627 STO T1
00673 0760 00 0 00144 SLN 4 TURN ON SENSE LIGHT FOUR
00674 0020 00 0 00606 TRA A7

* ENTER TIMINIG PULSE TEST *

* LOAD ENTIRE DRUM BEGINNING AT LOCATION LDA 3472

00675 0766 00 0 00000 TPU WRS
00676 0534 00 1 02575 LXK K3777,1 L 3777
00677 0460 00 0 02572 LDA K3472 L 3472
00700 0700 00 0 02616 CPY TEST2 L ALL ONES
00701 0700 00 0 02615 CPY TEST1 L 0
00702 2 00001 1 00701 TIX TPU+4,1,1
00703 0074 00 4 07126 TSX OK,4
00704 0020 00 0 00675 TRA TPU REPEAT TEST6

* CHECK LOCATION LDA 3472

00705 432421606060 BCD 1LDA
00706 0762 00 0 00000 TP1 RDS
00707 0534 00 1 02553 LXK K306,1 ADJUST FOR PRINT PROGRAM
00710 0460 00 0 02572 LDA K3472 L 3472
00711 0700 00 0 02731 CPY WPA
00712 0500 00 0 02731 CLA WPA WORD READ
00713 0340 00 0 02616 CAS TEST2 L ALL ONES
00714 0020 00 0 00716 TRA TP1+8 ERROR
00715 0020 00 0 00723 TRA TP2 OK
00716 0560 00 0 02616 LDQ TEST2 ERROR
00717 0074 00 4 07117 TSX ERROR-2,4
00720 0020 00 0 00706 TRA TP1
00721 0020 00 0 00723 TRA TP2

* CHECK LOCATION ZERO

| | | | |
|-------|-----------------|-----|--------------------------------------|
| 00722 | 432421606060 | | BCD 1LDA |
| 00723 | 0762 00 0 00000 | TP2 | RDS |
| 00724 | 0534 00 1 02576 | | LXA K4000,1 ADJUST FOR PRINT PROGRAM |
| 00725 | 0460 00 0 02642 | | LDA ZERO |
| 00726 | 0700 00 0 02731 | | CPY WPA |
| 00727 | 0500 00 0 02731 | | CLA WPA WORD READ |
| 00730 | 0340 00 0 02615 | | CAS TEST1 L 0 |
| 00731 | 0020 00 0 00733 | | TRA TP2+8 ERROR |
| 00732 | 0020 00 0 00740 | | TRA TP3 OK |
| 00733 | 0560 00 0 02615 | | LDQ TEST1 ERROR-CORRECT WORD |
| 00734 | 0074 00 4 07117 | | TSX ERROR-2,4 |
| 00735 | 0020 00 0 00723 | | TRA TP2 |
| 00736 | 0020 00 0 00740 | | TRA TP3 |

* CHECK LOCATION 3777

| | | | |
|-------|-----------------|-----|------------------------------------|
| 00737 | 432421606060 | | BCD 1LDA |
| 00740 | 0762 00 0 00000 | TP3 | RDS |
| 00741 | 0534 00 1 02606 | | LXA ONE,1 ADJUST FOR PRINT PROGRAM |
| 00742 | 0460 00 0 02575 | | LDA K3777 L 3777 |
| 00743 | 0700 00 0 02731 | | CPY WPA |
| 00744 | 0500 00 0 02731 | | CLA WPA WORD READ |
| 00745 | 0340 00 0 02615 | | CAS TEST1 L 0 |
| 00746 | 0020 00 0 00750 | | TRA TP3+8 ERROR |
| 00747 | 0020 00 0 00753 | | TRA TP4 OK |
| 00750 | 0560 00 0 02615 | | LDQ TEST1 ERROR-CORRECT WORD |
| 00751 | 0074 00 4 07117 | | TSX ERROR-2,4 |
| 00752 | 0020 00 0 00740 | | TRA TP3 |

* LOAD DRUM AGAIN AND WRITE OVER STARTING LDA 307 WITH NEW WORD

| | | | |
|-------|-----------------|-----|--------------------------|
| 00753 | 0766 00 0 00000 | TP4 | WRS |
| 00754 | 0534 00 1 02575 | | LXA K3777,1 L 3777 |
| 00755 | 0460 00 0 02554 | | LDA K307 L 307 |
| 00756 | 0700 00 0 02616 | | CPY TEST2 L ONES |
| 00757 | 0700 00 0 02615 | | CPY TEST1 L 0 |
| 00760 | 2 00001 1 00757 | | TIX TP4+4,1,1 |
| 00761 | 0700 00 0 02617 | | CPY TEST3 L 252525252525 |
| 00762 | 0074 00 4 07126 | | TSX OK,4 |
| 00763 | 0020 00 0 00753 | | TRA TP4 |

* CHECK LDA 307 AFTER WRITING WITH NEW WORD

| | | | |
|-------|-----------------|-----|--------------------------------------|
| 00764 | 432421606060 | | BCD 1LDA |
| 00765 | 0762 00 0 00000 | TP5 | RDS |
| 00766 | 0534 00 1 02571 | | LXA K3471,1 ADJUST FOR RPINT PROGRAM |
| 00767 | 0460 00 0 02554 | | LDA K307 L 307 |
| 00770 | 0700 00 0 02731 | | CPY WPA |
| 00771 | 0500 00 0 02731 | | CLA WPA WORD READ |
| 00772 | 0340 00 0 02617 | | CAS TEST3 L 0 |
| 00773 | 0020 00 0 00775 | | TRA TP5+8 ERROR |
| 00774 | 0020 00 0 01000 | | TRA TP6 |
| 00775 | 0560 00 0 02617 | | LDQ TEST3 ERROR-CORRECT WORD |
| 00776 | 0074 00 4 07117 | | TSX ERROR-2,4 |
| 00777 | 0020 00 0 00765 | | TRA TP5 |

01000 0074 00 4 07126 TP6 TSX OK,4
01001 0020 00 0 00675 TRA TPU REPEAT TEST

* ENTER LDA TEST *

01002 662451606060 BCD 1WDR
01003 0766 00 0 00000 LDAA WRS
01004 0534 00 1 02576 LXA K4000,1 L 4000
01005 0500 00 0 02642 CLA ZERO L 0
01006 0601 00 1 06721 STO X,1 LOAD STORAGE WITH INFOR
01007 0400 00 0 02526 ADD K6 L+2000001
01010 2 00001 1 01006 TIX LDAA+3,1,1

* WRITE DRUM ADDRESSES IN THE ADDRESS ON THE DRUM
* THE DECREMENT CONTAINS THE POCKET AND THE ADDRESS THE ADDRESS

01011 0534 00 1 02576 LXA K4000,1 L+4000
01012 0700 00 1 06721 LDA1 CPY X,1
01013 2 00001 1 01012 TIX LDA1,1,1 LOAD DRUM
01014 0074 00 4 07126 TSX OK,4
01015 0020 00 0 01003 TRA LDAA LOOP IN WRITE ROUTINE

* CLEAR STORAGE

01016 0761 00 0 00000 NOP
01017 0534 00 1 02576 LXA K4000,1 L 4000
01020 0600 00 1 06721 LDA1A STZ X,1
01021 2 00001 1 01020 TIX LDA1A,1,1
01022 0020 00 0 01024 TRA LDAB-2

* READ ENTIRE DRUM INTO STORAGE

01023 512451606060 BCD 1RDR
01024 0762 00 0 00000 RDS
01025 0534 00 1 02576 LXA K4000,1 L 4000
01026 0700 00 1 06721 LDAB CPY X,1
01027 2 00001 1 01026 TIX LDAB,1,1

* COMPARE THE WORD READ TO THE WORD WRITTEN

01030 0534 00 1 02576 LXA K4000,1 L 4000
01031 0500 00 0 02642 CLA ZERO L 0
01032 0340 00 1 06721 LDAC CAS X,1
01033 0020 00 0 01035 TRA LDAC+3 ERROR
01034 0020 00 0 01042 TRA LDAD OK
01035 0560 00 1 06721 LDQ X,1 ERROR WORD
01036 0131 00 0 00000 XCA ERROR WORD TO ACC
CORRECT WORD TO MQ

01037 0074 00 4 07117 TSX ERROR-2,4
01040 0020 00 0 01024 TRA LDAB-2
01041 0131 00 0 00000 XCA RESTORE ACC AND MQ

01042 0400 00 0 02526 LDAD ADD K6 L+2000001
01043 2 00001 1 01032 TIX LDAC,1,1

```
01044 0020 00 0 01046      TRA  *+2

*****  TEST LDA TRANSMISSION TO MQ  *****

01045 432421606060          BCD 1LDA
01046 0762 00 0 00000      1LDA  RDS
01047 0460 00 0 02575          LDA K3777      L 3777
01050 -0600 00 0 02604          STQ LDA10
01051 0700 00 0 06720          CPY X-1          IF I/O COMES UP
                                           HERE,CHECK THE DRUM COUNTER
                                           ON PAGE 7.02.01

01052 0500 00 0 02604          CLA LDA10
01053 0402 00 0 02577          SUB K7776      L 7775
01054 0100 00 0 01056          TZE 1LDA+8
01055 0074 00 4 07121          TSX ERROR,4
01056 0074 00 4 07126          TSX OK,4
01057 0020 00 0 01046          TRA 1LDA

01060 314663606060          BCD 1IOT

01061 0760 00 0 00005          IOT
01062 0020 00 0 01064          TRA  *+2          ERROR-SHBE OFF
01063 0020 00 0 01066          TRA  *+3
01064 0074 00 4 07120          TSX ERROR-1,4
01065 -3 00000 4 01061          TXL *-4,4

*      TEST SW 5 FOR ENTRY INTO SHORT OR LONG LDA TEST

01066 0760 00 0 00165      PICK  SWT 5
01067 0020 00 0 01104          TRA NSEQ

*      ADJUST CONSTANTS FOR SEQUENTIAL LDA TEST

01070 0500 00 0 02527          CLA K6+1      L DEC 10, ADR 400
01071 0601 00 0 02513          STO K
01072 0500 00 0 02530          CLA K6+2      L DEC 1000, ADR 400
01073 0601 00 0 02514          STO K+1
01074 0500 00 0 02532          CLA K7          L DEC 10776, ADR 4377
01075 0601 00 0 02515          STO K+2
01076 0500 00 0 02527          CLA K6+1      L DEC 10, ADR 400
01077 0767 00 0 00022          ALS 18
01100 0622 00 0 01164          STD LDA8-5
01101 0500 00 0 02521          CLA K+6      L DEC 3377, ADR 3757
01102 0622 00 0 01167          STD LDA8-2
01103 0020 00 0 01122          TRA LDA5

*      ADJUST CONSTANTS FOR NON-SEQUENTIAL LDA TEST

01104 0500 00 0 02516      NSEQ  CLA K+3      L DEC 200, ADR 20
01105 0601 00 0 02513          STO K
01106 0500 00 0 02517          CLA K+4      L DEC 40, ADR 20
01107 0601 00 0 02514          STO K+1
01110 0500 00 0 02520          CLA K+5      L DEC 10036, ADR 4017
01111 0601 00 0 02515          STO K+2
01112 0500 00 0 02516          CLA K+3      L DEC 200, ADR 20
```

```

01113 0767 00 0 00022      ALS 18
01114 0622 00 0 01164      STD LDA8-5
01115 0500 00 0 02521      CLA K+6          L DEC 3377, ADR 3757
01116 0767 00 0 00022      ALS 18
01117 0622 00 0 01167      STD LDA8-2
01120 0020 00 0 01122      TRA LDA5

```

* LOCATE ALL DRUM ADDRESSES IN THE DRUM COUNTER SEQUENCE AND CHECK

```

01121 432421606060          BCD 1LDA
01122 0500 00 0 02642      LDA5  CLA ZERO          L 0
01123 0601 00 0 02435          STO CSC          CLEAR CHECK SUM COUNTER
01124 0762 00 0 00000          RDS
01125 0500 00 0 02526      CLA K6          L +2000001
01126 0621 00 0 02604      STA LDA10       SET LDA COUNTER TO ONE
01127 0534 00 1 02531      LXA K6+3,1     L+37877 ADJUST XRA FOR
                                PRINT PROGRAM

01130 0534 00 2 02513          LXA K,2
01131 -0534 00 4 02513          LXD K,4
01132 0460 00 0 02604      LDA6  LDA LDA10
01133 0700 00 0 02630          CPY T2          TEMP STORAGE
01134 0340 00 0 02630          CAS T2
01135 0020 00 0 01137      TRA LDA6+5     ERROR
01136 0020 00 0 01151      TRA LDA7       OK
01137 0560 00 0 02630          LDQ T2          WORD READ IN MQ
01140 0131 00 0 00000          XCA            CORRECT WORD TO MQ
                                ERROR WORD TO ACC
01141 -0634 00 4 02627          SXD T1,4       SAVE INDEX COUNT
01142 0634 00 2 02627          SXA T1,2       SAVE XRB
01143 0774 00 2 00000          AXT 0,2        CLEAR XRB
01144 0074 00 4 07117          TSX ERROR-2,4  MQ CONTAINS POCKET NUMBER
                                IN ITS DEC, AND DRUM
                                ADDRESS IN ITS ADDRESS

01145 0020 00 0 01122          TRA LDA5
01146 0131 00 0 00000          XCA            RESTORE ACC AND MQ
01147 0534 00 2 02627          LXA T1,2       RESTORE XRB

01150 -0534 00 4 02627          LXD T1,4       RESTORE INDEX COUNT
01151 0601 00 0 02627      LDA7  STO T1          SAVE ACCUMULATOR
01152 0500 00 0 02630          CLA T2         WORD READ
01153 0361 00 0 02435          ACL CSC
01154 0601 00 0 02435          STO CSC          INCREASE CHECK SUM COUNTER

01155 0762 00 0 00000          RDS
01156 0500 00 0 02627          CLA T1         RESTORE ACCUMULATOR
01157 0400 00 0 02514          ADD K+1        INCREASE THE PKT AND ADR
01160 0340 00 0 02515          CAS K+2

```

* THE APPROACH OF ADDRESS ZERO

```

01161 0000 00 0 01163          HTR LDA7+10    SHOULD NEVER ENTER HERE
01162 0020 00 0 01171          TRA LDA8       THE NEXT ADDRESS IS ZERO

```

```

01163 0621 00 0 02604      STA LDA10
01164 2 00000 1 01165      TIX LDA7+12,1,0 ADJUST XRA FOR PRINT
01165 2 00001 4 01132      TIX LDA6,4,1

01166 0402 00 0 02531      SUB K6+3          L+7776003777-INCREAESE
                                SECTOR BY A COUNT OF ONE
01167 1 00000 1 01170      TXI LDA8-1,1,0  ADJUST FOR PRINT PROG
01170 0020 00 0 01173      TRA LDA8+2

01171 0500 00 0 02642      LDA8  CLA ZERO          L 0
01172 0534 00 1 02576      LXK K4000,1      ADJUST FOR PRINT PROGRAM
01173 0621 00 0 02604      STA LDA10
01174 2 00001 2 01131      TIX LDA6-1,2,1

01175 0700 00 0 06720      CPY X-1          DRUM DISCONNECT
01176 0500 00 0 02434      CLA CS          GENERATE CHECK SUM
01177 0340 00 0 02435      CAS CSC
01200 0020 00 0 01202      TRA LDA8+9      ERROR IN CHECK SUM
01201 0020 00 0 01207      TRA LDA9        CHECK SUM
01202 0774 00 2 00000      AXT 0,2        CLEAR XRB
01203 0560 00 0 02435      LDQ CSC        CORRECT CHECK SUM
01204 0131 00 0 00000      XCA
01205 0074 00 4 07117      TSX ERROR-2,4  ERROR IN CHECK SUM
01206 0020 00 0 01122      TRA LDA5
01207 0074 00 4 07126      LDA9  TSX OK,4
01210 0020 00 0 01122      TRA LDA5
01211 0761 00 0 00000      NOP
*****
*
*   THIS IS A RIPPLE LDA SWITCHING PHYSICAL DRUMS TEST
*
*****

*   SELECT CORRECT FRAME

01212 0500 00 0 02467      DAS  CLA DRUM          L DRUM ADDRESS
01213 0402 00 0 02556      SUB K311          L 311
01214 -0120 00 0 01257      TMI DL01         DRUM 1 OR 2

01215 0402 00 0 02524      DHI  SUB K4        L 4
01216 -0120 00 0 01237      TMI DH1         DRUM FRAME 3

01217 0500 00 0 02562      DH2  CLA K315      L 315 F4
01220 0621 00 0 02444      STA DA          SAVE
01221 0621 00 0 01322      STA DST        L WRS INST
01222 0500 00 0 02505      CLA D13B       L 0103
01223 -0501 00 0 02600      ORA LDA
01224 0602 00 0 01400      SLW LCP1-1

01225 0500 00 0 02506      CLA D14B       L 0104
01226 -0501 00 0 02600      ORA LDA
01227 0602 00 0 01412      SLW LCP2-1

01230 0500 00 0 02507      CLA D15B       L 0105

```

| | | | | | | | |
|-------|-------|----|---|-------|------|------------|--------------|
| 01231 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01232 | 0602 | 00 | 0 | 01424 | | SLW LCP3-1 | |
| 01233 | 0500 | 00 | 0 | 02510 | | CLA D16B | L 0106 |
| 01234 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01235 | 0602 | 00 | 0 | 01436 | | SLW LCP4-1 | |
| 01236 | 0020 | 00 | 0 | 01321 | | TRA DST-1 | START |
| 01237 | 0500 | 00 | 0 | 02556 | DH1 | CLA K311 | L 311 F3 |
| 01240 | 0621 | 00 | 0 | 02444 | | STA DA | SAVE |
| 01241 | 0621 | 00 | 0 | 01322 | | STA DST | L WRS INST |
| 01242 | 0500 | 00 | 0 | 02501 | | CLA D9B | L 0011 |
| 01243 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01244 | 0602 | 00 | 0 | 01400 | | SLW LCP1-1 | |
| 01245 | 0500 | 00 | 0 | 02502 | | CLA D10B | L 0100 |
| 01246 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01247 | 0602 | 00 | 0 | 01412 | | SLW LCP2-1 | |
| 01250 | 0500 | 00 | 0 | 02503 | | CLA D11B | L 0101 |
| 01251 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01252 | 0602 | 00 | 0 | 01424 | | SLW LCP3-1 | |
| 01253 | 0500 | 00 | 0 | 02504 | | CLA D12B | L 0102 |
| 01254 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01255 | 0602 | 00 | 0 | 01436 | | SLW LCP4-1 | |
| 01256 | 0020 | 00 | 0 | 01321 | | TRA DST-1 | START |
| 01257 | 0500 | 00 | 0 | 02467 | DL01 | CLA DRUM | |
| 01260 | 0402 | 00 | 0 | 02552 | | SUB K305 | L 305 |
| 01261 | -0120 | 00 | 0 | 01302 | | TMI DL1 | DRUM FRAME 1 |
| 01262 | 0500 | 00 | 0 | 02552 | DL02 | CLA K305 | L 305 F2 |
| 01263 | 0621 | 00 | 0 | 02444 | | STA DA | SAVE |
| 01264 | 0621 | 00 | 0 | 01322 | | STA DST | L WRS INST |
| 01265 | 0500 | 00 | 0 | 02475 | | CLA D5B | L 0005 |
| 01266 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01267 | 0602 | 00 | 0 | 01400 | | SLW LCP1-1 | |
| 01270 | 0500 | 00 | 0 | 02476 | | CLA D6B | L 0006 |
| 01271 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01272 | 0602 | 00 | 0 | 01412 | | SLW LCP2-1 | |
| 01273 | 0500 | 00 | 0 | 02477 | | CLA D7B | L 0007 |
| 01274 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01275 | 0602 | 00 | 0 | 01424 | | SLW LCP3-1 | |
| 01276 | 0500 | 00 | 0 | 02500 | | CLA D8B | L 0010 |
| 01277 | -0501 | 00 | 0 | 02600 | | ORA LDA | |
| 01300 | 0602 | 00 | 0 | 01436 | | SLW LCP4-1 | |
| 01301 | 0020 | 00 | 0 | 01321 | | TRA DST-1 | START |

01302 0500 00 0 02546 DL1 CLA K301 L 301 F1
01303 0621 00 0 02444 STA DA SAVE
01304 0621 00 0 01322 STA DST L WRS INST

01305 0500 00 0 02471 CLA D1B L 0001
01306 -0501 00 0 02600 ORA LDA
01307 0602 00 0 01400 SLW LCP1-1

01310 0500 00 0 02472 CLA D2B L 0002
01311 -0501 00 0 02600 ORA LDA
01312 0602 00 0 01412 SLW LCP2-1

01313 0500 00 0 02473 CLA D3B L 0003
01314 -0501 00 0 02600 ORA LDA
01315 0602 00 0 01424 SLW LCP3-1

01316 0500 00 0 02474 CLA D4B L 0004
01317 -0501 00 0 02600 ORA LDA
01320 0602 00 0 01436 SLW LCP4-1

* LOAD ALL DRUMS COMPLETE WITH 25 PATTERN

01321 0534 00 4 02524 LXK K4,4 L 4
01322 0766 00 0 00000 DST WRS
01323 0534 00 1 02576 LXK K4000,1 L 4000
01324 0700 00 0 02617 CPY TEST3 L 25 PATTERN
01325 2 00001 1 01324 TIX DST+2,1,1

01326 0500 00 0 01322 CLA DST
01327 0400 00 0 02606 ADD ONE L ONE
01330 0621 00 0 01322 STA DST
01331 2 00001 4 01322 TIX DST,4,1 LOAD ALL DRUMS

* ENTER LDA RIPPLE SWITCHING PHYSICAL DRUM

01332 0500 00 0 02444 DST0 CLA DA
01333 0621 00 0 01322 STA DST RESTORE
01334 0621 00 0 01347 STA LWD1 DRUM ONE OF SELECTED FR
01335 0621 00 0 01363 STA LRD1
01336 0400 00 0 02606 ADD ONE L ONE
01337 0621 00 0 01355 STA LWD2 DRUM TWO OF SELECTED FR
01340 0621 00 0 01371 STA LRD2
01341 0400 00 0 02606 ADD ONE L ONE
01342 0621 00 0 01352 STA LWD3
01343 0621 00 0 01366 STA LRD3 DRUM THREE OF SELECTED FR
01344 0400 00 0 02606 ADD ONE L ONE
01345 0621 00 0 01360 STA LWD4 DRUM FOUR OF SELECTED FR
01346 0621 00 0 01374 STA LRD4

* WRITE SINGLE WORDS ON ALL DRUMSWITH ASCENDING LDA ADDRESS

01347 0766 00 0 00000 LWD1 WRS
01350 0460 00 0 02661 LDA D02 L 4000002
01351 0700 00 0 02661 CPY D02

| | | | | | | | | |
|-------|------|----|---|-------|------|-----------|---|------------|
| 01352 | 0766 | 00 | 0 | 00000 | LWD3 | WRS | | |
| 01353 | 0460 | 00 | 0 | 02662 | | LDA D52 | L | 124000252 |
| 01354 | 0700 | 00 | 0 | 02662 | | CPY D52 | | |
| 01355 | 0766 | 00 | 0 | 00000 | LWD2 | WRS | | |
| 01356 | 0460 | 00 | 0 | 02663 | | LDA D252 | L | 524000252 |
| 01357 | 0700 | 00 | 0 | 02663 | | CPY D252 | | |
| 01360 | 0766 | 00 | 0 | 00000 | LWD4 | WRS | | |
| 01361 | 0460 | 00 | 0 | 02664 | | LDA D1252 | L | 2524001252 |
| 01362 | 0700 | 00 | 0 | 02664 | | CPY D1252 | | |

* READ SINGLE WORDS FROM LDA S JUST WRITTEN

| | | | | | | | | |
|-------|------|----|---|-------|------|-----------|---|------------|
| 01363 | 0762 | 00 | 0 | 00000 | LRD1 | RDS | | |
| 01364 | 0460 | 00 | 0 | 02661 | | LDA D02 | L | 4000002 |
| 01365 | 0700 | 00 | 0 | 02665 | | CPY D111 | L | 0 |
| 01366 | 0762 | 00 | 0 | 00000 | LRD3 | RDS | | |
| 01367 | 0460 | 00 | 0 | 02662 | | LDA D52 | L | 124000252 |
| 01370 | 0700 | 00 | 0 | 02667 | | CPY D333 | L | 0 |
| 01371 | 0762 | 00 | 0 | 00000 | LRD2 | RDS | | |
| 01372 | 0460 | 00 | 0 | 02663 | | LDA D252 | L | 524000252 |
| 01373 | 0700 | 00 | 0 | 02666 | | CPY D222 | L | 0 |
| 01374 | 0762 | 00 | 0 | 00000 | LRD4 | RDS | | |
| 01375 | 0460 | 00 | 0 | 02664 | | LDA D1252 | L | 2524001252 |
| 01376 | 0700 | 00 | 0 | 02670 | | CPY D444 | L | 0 |
| 01377 | 0020 | 00 | 0 | 01401 | | TRA LCP1 | | |

* CHECK FOR CORRECT LDA EXECUTION FOR DRUM 1

| | | | | | | | | |
|-------|--------------|----|---|-------|------|---------------|---|----------|
| 01400 | 432421606060 | | | | | BCD 1LDA | | |
| 01401 | 0500 | 00 | 0 | 02661 | LCP1 | CLA D02 | L | 40000002 |
| 01402 | 0340 | 00 | 0 | 02665 | | CAS D111 | | |
| 01403 | 0020 | 00 | 0 | 01405 | | TRA LCP1+4 | | ERROR |
| 01404 | 0020 | 00 | 0 | 01413 | | TRA LCP2 | | OK |
| 01405 | 0560 | 00 | 0 | 02665 | | LDQ D111 | | ERROR |
| 01406 | 0131 | 00 | 0 | 00000 | | XCA | | |
| 01407 | 0074 | 00 | 4 | 07117 | | TSX ERROR-2,4 | | |
| 01410 | 0020 | 00 | 0 | 01401 | | TRA LCP1 | | |
| 01411 | 0020 | 00 | 0 | 01413 | | TRA LCP2 | | |

* CHECK FOR CORRECT LDA EXECUTION FOR DRUM 2

| | | | | | | | | |
|-------|--------------|----|---|-------|------|---------------|---|-----------|
| 01412 | 432421606060 | | | | | BCD 1LDA | | |
| 01413 | 0500 | 00 | 0 | 02663 | LCP2 | CLA D252 | L | 124000252 |
| 01414 | 0340 | 00 | 0 | 02666 | | CAS D222 | | |
| 01415 | 0020 | 00 | 0 | 01417 | | TRA LCP2+4 | | ERROR |
| 01416 | 0020 | 00 | 0 | 01425 | | TRA LCP3 | | OK |
| 01417 | 0560 | 00 | 0 | 02666 | | LDQ D222 | | ERROR |
| 01420 | 0131 | 00 | 0 | 00000 | | XCA | | |
| 01421 | 0074 | 00 | 4 | 07117 | | TSX ERROR-2,4 | | |

| | | | | | | | | |
|-------|-------|----|---|-------|------|-----|-------|-------|
| 01472 | 0621 | 00 | 0 | 02444 | | STA | DA | |
| 01473 | 0621 | 00 | 0 | 01527 | | STA | DL | |
| 01474 | 0020 | 00 | 0 | 01512 | | TRA | SET-4 | |
| 01475 | 0500 | 00 | 0 | 02556 | FR3 | CLA | K311 | L 311 |
| 01476 | 0621 | 00 | 0 | 02444 | | STA | DA | |
| 01477 | 0621 | 00 | 0 | 01527 | | STA | DL | |
| 01500 | 0020 | 00 | 0 | 01512 | | TRA | SET-4 | |
| 01501 | 0402 | 00 | 0 | 02475 | 1OR2 | SUB | D5B | L 5 |
| 01502 | -0120 | 00 | 0 | 01507 | | TMI | FR1 | |
| 01503 | 0500 | 00 | 0 | 02552 | FR2 | CLA | K305 | L 305 |
| 01504 | 0621 | 00 | 0 | 02444 | | STA | DA | |
| 01505 | 0621 | 00 | 0 | 01527 | | STA | DL | |
| 01506 | 0020 | 00 | 0 | 01512 | | TRA | SET-4 | |
| 01507 | 0500 | 00 | 0 | 02546 | FR1 | CLA | K301 | L 301 |
| 01510 | 0621 | 00 | 0 | 02444 | | STA | DA | |
| 01511 | 0621 | 00 | 0 | 01527 | | STA | DL | |

* ADJUST CONSTANTS FOR LOAD AND TEST PATTERNS

| | | | | | | | | |
|-------|------|----|---|-------|-----|-----|------|----------------------|
| 01512 | 0500 | 00 | 0 | 02642 | | CLA | ZERO | L 0 |
| 01513 | 0601 | 00 | 0 | 02602 | | STO | LDA3 | |
| 01514 | 0500 | 00 | 0 | 02567 | | CLA | K400 | L 400 |
| 01515 | 0621 | 00 | 0 | 02603 | | STA | LDA4 | |
| 01516 | 0500 | 00 | 0 | 02567 | SET | CLA | K400 | ADJUST PRINT PROGRAM |
| 01517 | 0621 | 00 | 0 | 07173 | | STA | WDNO | |
| 01520 | 0500 | 00 | 0 | 02626 | | CLA | TWO | L 2 |
| 01521 | 0601 | 00 | 0 | 02437 | | STO | CT2 | |
| 01522 | 0500 | 00 | 0 | 02626 | | CLA | TWO | L 2 |
| 01523 | 0601 | 00 | 0 | 02436 | | STO | CT1 | |
| 01524 | 0534 | 00 | 2 | 02524 | | LXA | K4,2 | L 4 |
| 01525 | 0500 | 00 | 0 | 02602 | | CLA | LDA3 | L 0 |
| 01526 | 0601 | 00 | 0 | 02601 | | STO | LDA2 | |

* WRITE LOAD PATTERN TWICE ON ALL DRUMS OF FRAME SELECTED

| | | | | | | | | |
|-------|---------|----|---|-------|----|-----|----------|-------------------------------------|
| 01527 | 0766 | 00 | 0 | 00000 | DL | WRS | | |
| 01530 | 0534 | 00 | 1 | 02567 | | LXA | K400,1 | L 400 |
| 01531 | 0460 | 00 | 0 | 02601 | | LDA | LDA2 | |
| 01532 | 0700 | 00 | 0 | 02631 | | CPY | T3 | L 25252525252525 |
| 01533 | 2 00001 | 1 | 1 | 01532 | | TIX | DL+3,1,1 | |
| 01534 | 0074 | 00 | 4 | 07126 | | TSX | OK,4 | |
| 01535 | 0020 | 00 | 0 | 01527 | | TRA | DL | |
| 01536 | 0761 | 00 | 0 | 00000 | | NOP | | |
| 01537 | 0500 | 00 | 0 | 02601 | | CLA | LDA2 | ADJUST LDA FOR TEST PASS ON DRUM |
| 01540 | 0400 | 00 | 0 | 02570 | | ADD | K1000 | L 1000 |
| 01541 | 0601 | 00 | 0 | 02601 | | STO | LDA2 | |
| 01542 | 2 00001 | 2 | 1 | 01527 | | TIX | DL,2,1 | |
| 01543 | 0500 | 00 | 0 | 02436 | | CLA | CT1 | IS THIS DRUM LOADED |

| | | | | | | | |
|-------|-------|----|---|-------|--|----------|------------------------------------|
| 01544 | 0402 | 00 | 0 | 02606 | | SUB ONE | L 1 |
| 01545 | 0100 | 00 | 0 | 01557 | | TZE DL2 | YES |
| 01546 | 0621 | 00 | 0 | 02436 | | STA CT1 | NO |
| 01547 | 0500 | 00 | 0 | 02603 | | CLA LDA4 | L 400 ADJUST LDA |
| 01550 | 0621 | 00 | 0 | 02601 | | STA LDA2 | FOR LOADING SECOND HALF OF DRUM |
| 01551 | 0500 | 00 | 0 | 02631 | | CLA T3 | REVERSE LOAD |
| 01552 | 0560 | 00 | 0 | 02632 | | LDQ T4 | AND TEST PATTERN |
| 01553 | 0601 | 00 | 0 | 02632 | | STO T4 | |
| 01554 | -0600 | 00 | 0 | 02631 | | STQ T3 | |
| 01555 | 0534 | 00 | 2 | 02524 | | LXA K4,2 | L 4 |
| 01556 | 0020 | 00 | 0 | 01527 | | TRA DL | LOAD SECOND HALF OF DRUM |

* LOAD ENTIRE DRUM AGAIN WITH SAME PATTERN

| | | | | | | | |
|-------|-------|----|---|-------|-----|-----------|---|
| 01557 | -0760 | 00 | 0 | 00144 | DL2 | SLT 4 | TEST SENSE LIGHT 4 |
| 01560 | 0020 | 00 | 0 | 01562 | | TRA DL2+3 | |
| 01561 | 0020 | 00 | 0 | 01620 | | TRA DR | HAS TEST PATTERN BEEN WRITTEN ON TEST DRUM IF SO, PREPARE TO READ |

| | | | | | | | |
|-------|------|----|---|-------|--|---------|----------------------------|
| 01562 | 0500 | 00 | 0 | 02437 | | CLA CT2 | L 2 |
| 01563 | 0402 | 00 | 0 | 02606 | | SUB ONE | HAS DRUM BEEN LOADED TWICE |
| 01564 | 0100 | 00 | 0 | 01573 | | TZE DN | YES |
| 01565 | 0621 | 00 | 0 | 02437 | | STA CT2 | NO |

| | | | | | | | |
|-------|-------|----|---|-------|--|----------|----------------------|
| 01566 | 0500 | 00 | 0 | 02631 | | CLA T3 | REVERSE LOAD |
| 01567 | 0560 | 00 | 0 | 02632 | | LDQ T4 | AND TEST PATTERN |
| 01570 | 0601 | 00 | 0 | 02632 | | STO T4 | TO ORIGINAL SETTINGS |
| 01571 | -0600 | 00 | 0 | 02631 | | STQ T3 | |
| 01572 | 0020 | 00 | 0 | 01522 | | TRA DL-5 | |

* LOAD REMAINING DRUM IN SELECTED

| | | | | | | | |
|-------|------|----|---|-------|----|---------|-----------------------|
| 01573 | 0500 | 00 | 0 | 02444 | DN | CLA DA | ADJUST DRUM ADDRESS |
| 01574 | 0400 | 00 | 0 | 02606 | | ADD ONE | FOR LOADING NEXT DRUM |
| 01575 | 0621 | 00 | 0 | 02444 | | STA DA | |
| 01576 | 0621 | 00 | 0 | 01527 | | STA DL | |

* HAVE ALL DRUMS IN SELECTED FRAME BEEN LOADED TWICE

| | | | | | | | |
|-------|-------|----|---|-------|--|----------|-------|
| 01577 | 0402 | 00 | 0 | 02566 | | SUB K321 | L 321 |
| 01600 | 0100 | 00 | 0 | 01613 | | TZE DT | YES |
| 01601 | 0500 | 00 | 0 | 02444 | | CLA DA | |
| 01602 | 0402 | 00 | 0 | 02562 | | SUB K315 | L 315 |
| 01603 | 0100 | 00 | 0 | 01613 | | TZE DT | YES |
| 01604 | -0500 | 00 | 0 | 02444 | | CAL DA | |
| 01605 | 0402 | 00 | 0 | 02556 | | SUB K311 | |
| 01606 | 0100 | 00 | 0 | 01613 | | TZE DT | YES |

```
01607 0500 00 0 02444      CLA DA
01610 0402 00 0 02552      SUB K305
01611 0100 00 0 01613      TZE DT          YES
01612 0020 00 0 01512      TRA SET-4      NO LOAD NEXT DRUM
```

* WRITE TEST PATTERN ONCE ON THE DRUM TO BE TESTED

```
01613 0760 00 0 00144 DT   SLN 4          TURN ON LIGHT 4
01614 0500 00 0 02467      CLA DRUM
01615 0621 00 0 01527      STA DL
01616 0020 00 0 01522      TRA SET+4
```

* ALL DRUM IN THIS FRAME HAVE NOW BEEN LOADED FOR TEST

* READ TEST DRUM INTO STORAGE

```
01617 512451606060          BCD 1RDR
01620 0534 00 2 02614 DR   LXA TEN,2      L 10
01621 0500 00 0 02642      CLA ZERO      L 0
01622 0601 00 0 02601      STO LDA2
01623 0762 00 0 00000      RDS
01624 0534 00 1 02567      LXA K400,1   L 400
01625 0460 00 0 02601      LDA LDA2
01626 0700 00 1 06721      CPY X,1
01627 2 00001 1 01626      TIX DR+6,1,1
```

* COMPARE WORD READ FROM DRUM TO TEST WORD

```
01630 0534 00 1 02567      LXA K400,1   L 400
01631 0500 00 1 06721      CLA X,1      WORD READ
01632 0340 00 0 02632      CAS T4
01633 0020 00 0 01635      TRA DR+13    ERROR-COMPLEMENTED PATTERN
01634 0020 00 0 01643      TRA DR+19    OK
01635 0634 00 2 02627      SXA T1,2    SAVE XRB
01636 0774 00 2 00000      AXT 0,2     CLEAR XRB
01637 0560 00 0 02632      LDQ T4      ERROR ADDRESS IS
                                         NUMBER AT WDNO
01640 0074 00 4 07117      TSX ERROR-2,4
01641 0020 00 0 01620      TRA DR
01642 0534 00 2 02627      LXA T1,2    RESTORE XRB
01643 2 00001 1 01631      TIX *-10,1,1
```

```
01644 0500 00 0 02601      CLA LDA2     ADJUST LDA
01645 0400 00 0 02567      ADD K400     L 400
01646 0621 00 0 02601      STA LDA2
01647 0400 00 0 02567      ADD K400     ADJUST PRINT PROGRAM
01650 0601 00 0 07173      STO WDNO
01651 0500 00 0 02631      CLA T3      REVERSE TEST WORDS
01652 0560 00 0 02632      LDQ T4
01653 0601 00 0 02632      STO T4
01654 -0600 00 0 02631      STQ T3
01655 2 00001 2 01623      TIX DR+3,2,1
01656 0074 00 4 07126      TSX OK,4
01657 0020 00 0 01462      TRA FR
```

* REVERSE PROCEDURE OF WRITING ON DRUMS AND REPEAT TEST

```
01660 0761 00 0 00000      NOP
01661 0500 00 0 02567  FRR  CLA K400      L 400 REVERSE
01662 0601 00 0 02602      STO LDA3      LDA PATTERN FOR
01663 0500 00 0 02642      CLA ZERO      LOADING DRUMS
01664 0601 00 0 02603      STO LDA4
01665 0500 00 0 02440      CLA CT3      HAS REVERSE LOADING
01666 0402 00 0 02606      SUB ONE      PROCEDURE BEEN DONE
01667 0100 00 0 01673      TZE FRE      YES
01670 -0120 00 0 01673     TMI FRE
01671 0621 00 0 02440      STA CT3      NO
01672 0020 00 0 01462      TRA FR

01673 0074 00 4 07126  FRE  TSX OK,4
01674 0020 00 0 01452      TRA FR-8
```

```
*****
* REPEAT SWITCHING TEST USING PATTERN 707070007070 AND ITS*
* ALTERNATE 070707770707 INSTEAD OF THE 25 AND 52 PATTERN *
*****
```

```
01675 0761 00 0 00000      NOP
01676 0500 00 0 02633      CLA T5
01677 0402 00 0 02606      SUB ONE
01700 0100 00 0 01707      TZE FRE+12
01701 0621 00 0 02633      STA T5
01702 0500 00 0 02621      CLA TEST5    L 707070007070
01703 0601 00 0 02631      STO T3
01704 0500 00 0 02622      CLA TEST6    L 070707770707
01705 0601 00 0 02632      STO T4
01706 0020 00 0 01460      TRA FR-2

01707 0074 00 4 07126      TSX OK,4
01710 0020 00 0 01452      TRA FR-8
```

```
*****
* ENTER RANDOM NUMBERS TEST *
*****
```

* ZERO SELECTED DRUM

```
01711 662451606060      BCD 1WDR
01712 0766 00 0 00000  R    WRS
01713 0534 00 1 02576      LXA K4000,1  L 4000
01714 0700 00 0 02615      CPY TEST1    L ZERO
01715 2 00001 1 01714     TIX R+2,1,1
01716 0500 00 0 02623      CLA THREE    L 3
01717 0601 00 0 02442      STO CT6
```

* GENERATE 100 OCTAL RANDOM NUMBERS

```
01720 0500 00 0 07021  R1   CLA RN+63
01721 0601 00 0 02610      STO PRNG
01722 0534 00 1 02544      LXA K100,1   L 100
01723 0560 00 0 07021      LDQ RN+63
```

```

01724 -0773 00 0 00001      RQL 1
01725  0200 00 0 02613      MPY RR          L 357642357563
01726 -0600 00 1 07022      STQ RN+64,1
01727  2 00001 1 01724      TIX R1+4,1,1

*      CREATE RANDOM LDA ADDRESS

01730 -0500 00 0 07021  R2    CAL RN+63
01731 -0320 00 0 02575      ANA K3777      L 3777
01732  0621 00 0 02612      STA RN7
01733 -0754 00 0 00000      PXD            CLEAR ACC

*      SELECT RANDOM LDA AND WRITE 100 OCTAL LOCATIONS
*      WITH RANDOM NUMBERS

*      FINISH LOADING ENTIRE DRUM -3700 OCTAL LOCATIONS-
*      WITH ZERO WORDS

01734  0766 00 0 00000  R3    WRS
01735  0534 00 1 02544      LXA K100,1     L 100
01736  0534 00 2 02573      LXA K3700,2   L 3700
01737  0460 00 0 02612      LDA RN7
01740 -0700 00 1 07022      CAD RN+64,1
01741  2 00001 1 01740      TIX R3+4,1,1
01742 -0700 00 0 02615      CAD TEST1
01743  2 00001 2 01742      TIX R3+6,2,1
01744  0602 00 0 02511      SLW CAD
01745  0774 00 2 00000      AXT 0,2       CLEAR XRB
01746  0020 00 0 01750      TRA R4

*      READ ENTIRE DRUM INTO STORAGE

01747  432421606060          BCD 1LDA
01750  0762 00 0 00000  R4    RDS
01751 -0754 00 0 00000      PXD            CLEAR ACC
01752  0534 00 1 02576      LXA K4000,1   L 4000
01753 -0700 00 1 06721      CAD X,1
01754  2 00001 1 01753      TIX R4+3,1,1
01755  0602 00 0 02443      SLW Z20       SAVE CHECK SUM

*      COMPATE RANDOM NUMBER WRITTEN AT RANDOM LDA
*      WITH WORD GENERATED FOR THAT POSITION

*      CHECK FIRST RANDOM ADDRESS

01756  0500 00 0 02576      CLA K4000     ADJUST WORD NUMBER
01757  0402 00 0 02612      SUB RN7       FOR PRINT ROUTINE
01760  0734 00 1 00000      PAX 0,1

01761  0500 00 0 02612  R5    CLA RN7      RANDOM LDA
01762  0400 00 0 06721      ADD K2377
01763  0621 00 0 01766      STA R5+5     TO CAS CORRECT ADDRESS
01764  0621 00 0 01771      STA R5+8     TO LOAD CORRECT WORD IN MQ
01765  0500 00 0 06722      CLA RN
01766  0340 00 0 00000      CAS 0        N WORDS
01767  0020 00 0 01771      TRA R5+8

```


| | | | | | | | |
|-------|------|----|---|-------|-----|-----------|----------------------|
| 01770 | 0020 | 00 | 0 | 01774 | TRA | R6 | OK |
| 01771 | 0560 | 00 | 0 | 00000 | LDQ | 0 | CORRECT WORD |
| 01772 | 0074 | 00 | 4 | 07117 | TSX | ERROR-2,4 | LDA ERROR FIRST WORD |
| 01773 | 0020 | 00 | 0 | 01750 | TRA | R4 | |

* CHECK DRUM ADDRESS ZERO

| | | | | | | | | |
|-------|-------|----|---|-------|----|-----|-----------|-------------------------|
| 01774 | 0500 | 00 | 0 | 02612 | R6 | CLA | RN7 | RANDOM LDA |
| 01775 | 0402 | 00 | 0 | 02573 | | SUB | K3700 | L 3700 |
| 01776 | -0120 | 00 | 0 | 02013 | | TMI | R7 | K 3700 GREATER THEN RN7 |
| 01777 | 0100 | 00 | 0 | 02013 | | TZE | R7 | K 3700 EQUAL TO RN7 |
| 02000 | 0621 | 00 | 0 | 07173 | | STA | WDNO | |
| 02001 | 0734 | 00 | 1 | 00000 | | PAX | 0,1 | RN7 GREATER THEN K 3700 |
| 02002 | 0500 | 00 | 1 | 07022 | | CLA | RN+64,1 | WORD READ |
| 02003 | 0340 | 00 | 0 | 02721 | | CAS | X-2048 | |
| 02004 | 0020 | 00 | 0 | 02006 | | TRA | R6+10 | |
| 02005 | 0020 | 00 | 0 | 02011 | | TRA | *+4 | |
| 02006 | 0560 | 00 | 0 | 02721 | | LDQ | X-2048 | CORRECT WORD |
| 02007 | 0074 | 00 | 4 | 07117 | | TSX | ERROR-2,4 | |
| 02010 | 0020 | 00 | 0 | 01750 | | TRA | R4 | |
| 02011 | 0500 | 00 | 0 | 02576 | | CLA | K4000 | |
| 02012 | 0601 | 00 | 0 | 07173 | | STO | WDNO | |

* CHECK ADDRESS OF LAST RANDOM WORD WRITTEN

| | | | | | | | | |
|-------|-------|----|---|-------|----|-----|-----------|--------------------|
| 02013 | 0500 | 00 | 0 | 02612 | R7 | CLA | RN7 | |
| 02014 | 0400 | 00 | 0 | 02544 | | ADD | K100 | |
| 02015 | -0320 | 00 | 0 | 02575 | | ANA | K3777 | |
| 02016 | 0400 | 00 | 0 | 02575 | | ADD | K3777 | |
| 02017 | -0320 | 00 | 0 | 02575 | | ANA | K3777 | |
| 02020 | 0621 | 00 | 0 | 02640 | | STA | T21 | ADJUST WORD NUMBER |
| 02021 | 0500 | 00 | 0 | 02576 | | CLA | K4000 | FOR PRINT ROUTINE |
| 02022 | 0402 | 00 | 0 | 02640 | | SUB | T21 | |
| 02023 | 0734 | 00 | 1 | 00000 | | PAX | 0,1 | |
| 02024 | 0500 | 00 | 0 | 02640 | | CLA | T21 | |
| 02025 | 0400 | 00 | 0 | 06721 | | ADD | K2377 | |
| 02026 | 0621 | 00 | 0 | 02031 | | STA | R7+14 | |
| 02027 | 0621 | 00 | 0 | 02034 | | STA | R7+17 | |
| 02030 | 0500 | 00 | 0 | 07021 | | CLA | RN+63 | WORD READ |
| 02031 | 0340 | 00 | 0 | 00000 | | CAS | 0 | |
| 02032 | 0020 | 00 | 0 | 02034 | | TRA | R7+17 | |
| 02033 | 0020 | 00 | 0 | 02037 | | TRA | R8 | |
| 02034 | 0560 | 00 | 0 | 00000 | | LDQ | 0 | CORRECT WORD |
| 02035 | 0074 | 00 | 4 | 07117 | | TSX | ERROR-2,4 | |
| 02036 | 0020 | 00 | 0 | 01750 | | TRA | R4 | |

* CHECK SUM TEST WRITE DRUM AGAINST MEMORY

| | | | | | | | | |
|-------|-------|-------|---|-------|----|-----|----------|----------------------|
| 02037 | -0754 | 00 | 0 | 00000 | R8 | PXD | | CLEAR AC |
| 02040 | 0534 | 00 | 1 | 02576 | | LXA | K4000,1 | |
| 02041 | 0361 | 00 | 1 | 06721 | | ACL | X,1 | |
| 02042 | 2 | 00001 | 1 | 02041 | | TIX | R8+2,1,1 | |
| 02043 | 0602 | 00 | 0 | 02634 | | SLW | T6 | CHECK SUM DRUM-WRITE |
| 02044 | 0020 | 00 | 0 | 02046 | | TRA | *+2 | |

| | | | | |
|-------|-----------------------------------|-----|---------------|-----------------------------|
| 02045 | 232124606060 | | BCD 1CAD | |
| 02046 | -0500 00 0 02443 | | CAL Z20 | COMPUTED SUM |
| 02047 | 0560 00 0 02634 | | LDQ T6 | CORRECT CHECK SUM |
| 02050 | -0340 00 0 02634 | | LAS T6 | TEST CHECK SUM |
| 02051 | 0020 00 0 02053 | | TRA *+2 | ERROR |
| 02052 | 0020 00 0 02055 | | TRA *+3 | |
| 02053 | 0074 00 4 07117 | | TSX ERROR-2,4 | |
| 02054 | 0761 00 0 02046 | | NOP *-6 | |
| 02055 | -0754 00 0 00000 | R9 | PXD | CLEAR AC |
| 02056 | 0534 00 1 02544 | | LXA K100,1 | |
| 02057 | 0361 00 1 07022 | | ACL RN+64,1 | |
| 02060 | 2 00001 1 02057 | | TIX R9+2,1,1 | |
| 02061 | 0602 00 0 02635 | | SLW T7 | CHECK SUM MEMORY |
| 02062 | 0020 00 0 02064 | | TRA *+2 | |
| 02063 | 232124606060 | | BCD 1CAD | |
| 02064 | -0500 00 0 02511 | | CAL CAD | COMPUTED SUM |
| 02065 | 0560 00 0 02635 | | LDQ T7 | CORRECT SUM |
| 02066 | -0340 00 0 02635 | | LAS T7 | FORMED FROM 100 NOS IN MEM. |
| 02067 | 0020 00 0 02071 | | TRA *+2 | ERROR |
| 02070 | 0020 00 0 02073 | | TRA *+3 | |
| 02071 | 0074 00 4 07117 | | TSX ERROR-2,4 | |
| 02072 | 0761 00 0 02064 | | NOP *-6 | |
| 02073 | 0500 00 0 02634 | | CLA T6 | |
| 02074 | 0340 00 0 02635 | | CAS T7 | |
| 02075 | 0020 00 0 02077 | | TRA *+2 | |
| 02076 | 0020 00 0 02105 | | TRA R10 | |
| 02077 | 0560 00 0 02635 | | LDQ T7 | |
| 02100 | 0074 00 4 07117 | | TSX ERROR-2,4 | LDA CHECK SUM ERROR |
| 02101 | 0020 00 0 01750 | | TRA R4 | |
| 02102 | 0074 00 4 07126 | | TSX OK,4 | |
| 02103 | 0020 00 0 01712 | | TRA R | |
| * | CHECK SUM TEST READ LDA CHECK SUM | | | |
| 02104 | 432421606060 | | BCD 1LDA | |
| 02105 | 0762 00 0 00000 | R10 | RDS | |
| 02106 | 0534 00 1 02544 | | LXA K100,1 | |
| 02107 | 0460 00 0 02612 | | LDA RN7 | |
| 02110 | 0700 00 1 03021 | | CPY X-1984,1 | |
| 02111 | 2 00001 1 02110 | | TIX R10+3,1,1 | |
| 02112 | -0754 00 0 00000 | R11 | PXD | CLEAR AC |
| 02113 | 0534 00 1 02544 | | LXA K100,1 | |
| 02114 | 0361 00 1 03021 | | ACL X-1984,1 | |
| 02115 | 2 00001 1 02114 | | TIX R11+2,1,1 | |
| 02116 | 0602 00 0 02635 | | SLW T7 | |
| 02117 | 0500 00 0 02634 | | CLA T6 | |
| 02120 | 0340 00 0 02635 | | CAS T7 | |
| 02121 | 0020 00 0 02123 | | TRA R11+9 | ERROR |
| 02122 | 0020 00 0 02126 | | TRA R12-2 | OK |

02123 0560 00 0 02635 LDQ T7
02124 0074 00 4 07117 TSX ERROR-2,4 READ LDA ERROR-CK SUM
02125 0020 00 0 02105 TRA R10

* GENERATE 4000 OCTAL RANDOM NUMBERS

02126 0774 00 2 00003 AXT 3,2 LOAD XRB-3
02127 0774 00 4 00002 AXT 2,4 LOAD XRC-2
02130 0534 00 1 02576 R12 LXK K4000,1
02131 0560 00 0 07021 LDQ RN+63
02132 -0773 00 0 00001 RQL 1
02133 0200 00 0 02613 MPY RR L 357642357563
02134 -0600 00 1 06721 STQ X,1
02135 2 00001 1 02132 TIX R12+2,1,1

* LOAD FULL RANDOM DRUM THREE TIMES WITH SAME RANDOM PATTERN

02136 0766 00 0 00000 R13 WRS
02137 0534 00 1 02576 LXK K4000,1 LOAD XRA-4000
02140 0700 00 1 06721 CPY X,1
02141 2 00001 1 02140 TIX *-1,1,1 COPY FULL DRUM FROM ZERO
02142 2 00001 2 02137 TIX *-3,2,1 RETURN TO WRITE DRUM
THREE TIMES WITHOUT
RE-SELECTING. THIS ROUTINE
TAKES ADVANTAGE OF THE
INDEX GAP.
02143 2 00001 4 02154 TIX R13A,4,1 DECREMENT TO RE-WRITE
WITH NEW PATTERN
02144 0020 00 0 02146 TRA *+2
02145 314663606060 BCD 1IOT
02146 0760 00 0 00005 IOT CHECK IOT LIGHT
02147 0020 00 0 02151 TRA *+2 ERROR-SHOULD NOT BE ON
02150 0020 00 0 02153 TRA *+3 OK-LIGHT IS OFF
02151 0074 00 4 07120 TSX ERROR-1,4 IF I/O CHECK COMES UP AT
02152 -3 00000 4 02147 TXL *-3,4,0 THIS POINT. THE DRUM
DISCONNECTED. 72 US WERE
USED IN THE INDEX GAP.
AS THE GAP SHOULD BE
150-350 US. THE GAP IS
MUCH TOO SHORT, AND DRUM
SHOULD BE RE-WRITTEN
02153 0020 00 0 02160 TRA R14 DRUM HAS BEEN RE-WRITTEN
WITH NEW PATTERN. GO TO
READ NEW PATTERN.

* GENERATE 4000 OCTAL RANDOM NUMBERS

* WRITE NEW RANDOM PATTERN ONCE

02154 0534 00 1 02576 R13A LXK K4000,1 L 4000
02155 0500 00 1 06721 CLA X,1
02156 0601 00 0 07021 STO RN+63
02157 0020 00 0 02131 TRA R12+1

* READ ENTIRE DRUM BACK INTO MEMORY

02160 0762 00 0 00000 R14 RDS
02161 0534 00 1 02576 LXA K4000,1
02162 0700 00 1 06721 CPY X,1
02163 2 00001 1 02162 TIX R14+2,1,1
02164 0020 00 0 02166 TRA R15

* COMPARE WORD WRITTEN TO WORD READ

02165 512451606060 BCD 1RDR
02166 0534 00 1 02576 R15 LXA K4000,1
02167 0560 00 0 07021 LDQ RN+63
02170 -0773 00 0 00001 RQL 1
02171 0200 00 0 02613 MPY RR
02172 -0600 00 0 02636 STQ T10
02173 0500 00 1 06721 CLA X,1 WORD READ
02174 0340 00 0 02636 CAS T10 CORRECT WORD
02175 0020 00 0 02177 TRA R15+9
02176 0020 00 0 02202 TRA R16 OK
02177 0560 00 0 02636 LDQ T10 CORRECT WORD
02200 0074 00 4 07117 TSX ERROR-2,4
02201 0020 00 0 02166 TRA R15

02202 0560 00 0 02636 R16 LDQ T10
02203 2 00001 1 02170 TIX R15+2,1,1
02204 0500 00 0 02613 CLA RR MODIFY RN GENERATOR
02205 0400 00 0 02532 ADD K7 L 010776004377
02206 0601 00 0 02613 STO RR
02207 0074 00 4 07126 TSX OK,4
02210 0020 00 0 01712 TRA R

* TEST FOR DELAY OF OVER 500 U-SEC BETWEEN RDS AND LDA

02211 512451606060 BCD 1RDR
02212 0762 00 0 00000 D500 RDS
02213 0534 00 1 02541 LXA K22,1
02214 2 00001 1 02214 TIX D500+2,1,1 552 U-SEC DELAY
02215 0460 00 0 02575 LDA K3777
02216 0700 00 0 02731 CPY WPA
02217 0600 00 0 02731 STZ WPA
02220 0020 00 0 02222 TRA *+2

02221 314663606060 BCD 1IOT

02222 0760 00 0 00005 IOT
02223 0020 00 0 02225 TRA *+2 ERROR-552 US DELAY
02224 0020 00 0 02227 TRA *+3 SELECT AND LDA SHOULD
02225 0074 00 4 07120 TSX ERROR-1,4 NOT TURN ON I/O TGR
02226 -3 00000 4 02222 TXL *-4,4

* TEST LDA-IND. ADDR., LDA-INDEXED, AND NO HANG UP ON COPY *

02227 0534 00 1 02623 BEGIN LXA THREE,1 L+3

| | | | | | | | |
|-------|--------------|-------|---|-------|------|-----------|--|
| 02230 | 0754 | 00 | 1 | 00000 | PXA | 0,1 | |
| 02231 | 0400 | 00 | 0 | 02606 | ADD | ONE | L+1 |
| 02232 | 0601 | 00 | 0 | 07173 | STO | WDNO | SET WDNO CONSTANT |
| 02233 | 0766 | 00 | 0 | 00300 | WDR | | |
| 02234 | 0460 | 60 | 0 | 02644 | LDA* | WRDR-2 | L ADDR K1000 |
| 02235 | 0700 | 00 | 0 | 02617 | CPY | TEST3 | L+2525252525225 |
| 02236 | 2 | 00001 | 1 | 02236 | TIX | *,1,1 | |
| 02237 | 0700 | 00 | 0 | 02620 | CPY | TEST4 | HANG UP CONDITION MY OCCUR AT THIS POINT. IF SO DRUM MAY NOT HAVE DISCONNECTED AFTER DELAY. LOOK AT SYSTEM PAGE 5.03.01. |
| 02240 | 0020 | 00 | 0 | 02242 | TRA | *+2 | |
| 02241 | 314663606060 | | | | BCD | 1IOT | TEST I/O TGR AND INDICATOR |
| 02242 | 0760 | 00 | 0 | 00005 | IOT | | IS INDICATOR ON |
| 02243 | 0020 | 00 | 0 | 02250 | TRA | *+5 | YES-OK |
| 02244 | 0074 | 00 | 4 | 07120 | TSX | ERROR-1,4 | INDICATOR SHOULD HAVE BEEN TURNED ON WHEN CPY WAS GIVEN AFTER DELAY OF OVER 36US. LOOK AT SYSTEMS PAGE 5.03.01 |
| 02245 | -3 | 00000 | 4 | 02242 | TXL | *-3,4,0 | |
| 02246 | 0020 | 00 | 0 | 02250 | TRA | *+2 | CONTINUE |
| 02247 | 432460012160 | | | | BCD | 1LD 1A | TEST LDA IND. ADDRESSED |
| 02250 | 0762 | 00 | 0 | 00300 | RDR | | BUG |
| 02251 | 0460 | 00 | 0 | 02570 | LDA | K1000 | CORRECT LDA |
| 02252 | 0700 | 00 | 0 | 02647 | CPY | CHECK | READ ONE WORD |
| 02253 | 0700 | 00 | 0 | 02650 | CPY | CHECK+1 | READ LOC. OF DUMMY COPY |
| 02254 | 0500 | 00 | 0 | 02647 | CLA | CHECK | WORD READ |
| 02255 | 0560 | 00 | 0 | 02617 | LDQ | TEST3 | WORD WRITTEN |
| 02256 | 0340 | 00 | 0 | 02617 | CAS | TEST3 | |
| 02257 | 0020 | 00 | 0 | 02261 | TRA | *+2 | ERROR |
| 02260 | 0020 | 00 | 0 | 02263 | TRA | *+3 | OK |
| 02261 | 0074 | 00 | 4 | 07117 | TSX | ERROR-2,4 | ERROR COULD HAVE BEEN A |
| 02262 | 0761 | 00 | 0 | 02250 | NOP | BUG | OR WRITE ERROR |
| 02263 | 2 | 00001 | 1 | 02265 | TIX | *+2,1,1 | CONTINUE |
| 02264 | 0020 | 00 | 0 | 02266 | TRA | *+2 | |
| 02265 | 234770606060 | | | | BCD | 1CPY | TEST THAT COPY AFTER DISCONNECT DOES NOT TRANSMIT |
| 02266 | 0500 | 00 | 0 | 02650 | CLA | CHECK+1 | WORD READ |
| 02267 | 0340 | 00 | 0 | 02620 | CAS | TEST4 | WORD WAS WRITTEN BUT IT SHOULD NOT HAVE BEEN |
| 02270 | 0020 | 00 | 0 | 02275 | TRA | *+5 | OK |
| 02271 | 0020 | 00 | 0 | 02273 | TRA | *+2 | ERROR-WORD SHOULD NOT HAVE BEEN TRANSMITTED |
| 02272 | 0020 | 00 | 0 | 02275 | TRA | *+3 | OK |

| | | | | | | | |
|-------|--------------|-------|---|-------|-------|-----------------|---|
| 02273 | 0074 | 00 | 4 | 07120 | | TSX ERROR-1,4 | COPY AFTER LAPSE OF MORE |
| 02274 | -3 | 00000 | 4 | 02266 | | TXL *-6,4,0 | THEN 36US WAS COMPLETED COPY SHOULD HAVE ACTED AS A NOP |
| 02275 | 0074 | 00 | 4 | 07126 | | TSX OK,4 | OUT TO TEST SWITCHES |
| 02276 | 0020 | 00 | 0 | 02227 | | TRA BEGIN | REPEAT WITH SW=1 DOWN |
| 02277 | 0761 | 00 | 0 | 00000 | | NOP | |
| 02300 | 0534 | 00 | 1 | 02623 | AGAIN | LXA THREE,1 | L+3 |
| 02301 | 0766 | 00 | 0 | 00300 | | WDR | |
| 02302 | 0460 | 00 | 1 | 02573 | | LDA K3700,1 | EFFECTED ADDR K1000 |
| 02303 | 0700 | 00 | 1 | 02621 | | CPY TEST2+3,1 | COPY THREE WORDS |
| 02304 | 2 | 00001 | 1 | 02303 | | TIX *-1,1,1 | |
| 02305 | 0500 | 00 | 0 | 02474 | | CLA D4B | L+4 |
| 02306 | 0601 | 00 | 0 | 07173 | | STO WDNO | SET WD NO CONSTANT |
| 02307 | 0534 | 00 | 1 | 02623 | | LXA THREE,1 | L+3 |
| 02310 | 0762 | 00 | 0 | 00300 | | RDR | |
| 02311 | 0460 | 00 | 0 | 02570 | | LDA K1000 | L ADDR. 1000 |
| 02312 | 0700 | 00 | 1 | 02652 | | CPY CHECK+3,1 | READ THREE WORDS |
| 02313 | 2 | 00001 | 1 | 02312 | | TIX *-1,1,1 | |
| 02314 | 0020 | 00 | 0 | 02316 | | TRA *+2 | |
| 02315 | 432421603167 | | | | | BCD 1LDA IX | TEST LDA INDEXED |
| 02316 | 0534 | 00 | 1 | 02623 | INDEX | LXA THREE,1 | L+3 |
| 02317 | 0500 | 00 | 1 | 02652 | | CLA CHECK+3,1 | WORD READ |
| 02320 | 0560 | 00 | 1 | 02621 | | LDQ TEST2+3,1 | WORD WRITTEN |
| 02321 | 0340 | 00 | 1 | 02621 | | CAS TEST2+3,1 | |
| 02322 | 0020 | 00 | 0 | 02324 | | TRA *+2 | ERROR |
| 02323 | 0020 | 00 | 0 | 02326 | | TRA *+3 | OK |
| 02324 | 0074 | 00 | 4 | 07117 | | TSX ERROR-2,4 | ERROR COULD HAVE BEEN READ |
| 02325 | 0761 | 00 | 0 | 02316 | | NOP INDEX | OR WRITE ERROR |
| 02326 | 2 | 00001 | 1 | 02317 | | TIX INDEX+1,1,1 | |
| 02327 | 0534 | 00 | 1 | 02626 | | LXA TWO,1 | L+2 |
| 02330 | 0766 | 00 | 0 | 00300 | | WDR | |
| 02331 | 0460 | 60 | 1 | 02646 | | LDA* WRDR,1 | EFFECTIVE ADDR, K1000 |
| 02332 | 0700 | 00 | 1 | 02620 | | CPY TEST2+2,1 | WRITE TWO WORDS |
| 02333 | 2 | 00001 | 1 | 02332 | | TIX *-1,1,1 | |
| 02334 | 0020 | 00 | 0 | 02336 | | TRA *+2 | CONTINUE |
| 02335 | 432467606731 | | | | | BCD 1LDX XI | TEST LDA INDEXED + INDIRECT |
| 02336 | 0762 | 00 | 0 | 00300 | BUGS | RDR | |
| 02337 | 0460 | 00 | 0 | 02570 | | LDA K1000 | L 1000 IN ADDR |
| 02340 | 0534 | 00 | 1 | 02626 | | LXA TWO,1 | L+2 |
| 02341 | 0700 | 00 | 1 | 02651 | | CPY CHECK+2,1 | READ TWO WORDS |
| 02342 | 2 | 00001 | 1 | 02341 | | TIX *-1,1,1 | |
| 02343 | 0534 | 00 | 1 | 02626 | | LXA TWO,1 | L+2 |
| 02344 | 0500 | 00 | 0 | 02623 | | CLA THREE | L+3 |
| 02345 | 0601 | 00 | 0 | 07173 | | STO WDNO | SET WORD NO CONSTANT |
| 02346 | 0500 | 00 | 1 | 02651 | | CLA CHECK+2,1 | WORD READ |
| 02347 | 0560 | 00 | 1 | 02620 | | LDQ TEST2+2,1 | WORD WRITTEN |

| | | | | | | |
|-------|------|-------|---|-------|---------------|---|
| 02350 | 0340 | 00 | 1 | 02620 | CAS TEST2+2,1 | |
| 02351 | 0020 | 00 | 0 | 02353 | TRA *+2 | ERROR |
| 02352 | 0020 | 00 | 0 | 02355 | TRA *+3 | OK |
| 02353 | 0074 | 00 | 4 | 07117 | TSX ERROR-2,4 | ERROR COULD HAVE BEEN A READ OR WRITE ERROR IF NO ERROR INDICATION IN READ AND WRITE SECTION OF THIS TEST, LDA IND. ADDR. OR LDA INDEXED, IT MUST BE ASSUMED THAT THE ERROR CAME ABOUT THROUGH THE USE OF THE COMBINED INDEXING AND IND. ADDRESSING OF LDA |
| 02354 | 0761 | 00 | 0 | 02336 | NOP | BUGS |
| 02355 | 2 | 00001 | 1 | 02346 | TIX *-7,1,1 | CHECK ALL WORDS |
| 02356 | 0074 | 00 | 4 | 07126 | TSX OK,4 | OUT TO TEST SWITCHES |
| 02357 | 0020 | 00 | 0 | 02316 | TRA INDEX | |
| 02360 | 0761 | 00 | 0 | 00000 | NOP | |
| 02361 | 0762 | 00 | 0 | 00300 | RDR | |
| 02362 | 0460 | 00 | 0 | 02646 | LDA WRDR | |
| 02363 | 0700 | 00 | 0 | 02652 | CPY CHEC | |
| 02364 | 0762 | 00 | 0 | 00300 | RDR | |
| 02365 | 0460 | 00 | 0 | 02644 | LDA WRDR-2 | |
| 02366 | 0700 | 00 | 0 | 02653 | CPY CHEC+1 | |
| 02367 | 0500 | 00 | 0 | 02652 | CLA CHEC | |
| 02370 | 0340 | 00 | 0 | 02616 | CAS TEST2 | |
| 02371 | 0020 | 00 | 0 | 02376 | TRA *+5 | OK |
| 02372 | 0020 | 00 | 0 | 02374 | TRA *+2 | ERROR |
| 02373 | 0020 | 00 | 0 | 02376 | TRA *+3 | OK |
| 02374 | 0074 | 00 | 4 | 07120 | TSX ERROR-1,4 | ERROR HERE WOULD INDICATE |
| 02375 | -3 | 00000 | 4 | 02316 | TXL INDEX,4,0 | LDA INDEXING FAILURE THIS ERROR WOULD BE TIED IN WITH AN ERROR IN ROUTINE AT BUGS |
| 02376 | 2 | 00001 | 1 | 02377 | TIX *+1,1,1 | |
| 02377 | 0500 | 00 | 0 | 02653 | CLA CHEC+1 | |
| 02400 | 0340 | 00 | 0 | 02616 | CAS TEST2 | |
| 02401 | 0020 | 00 | 0 | 02406 | TRA *+5 | OK |
| 02402 | 0020 | 00 | 0 | 02404 | TRA *+2 | ERROR |
| 02403 | 0020 | 00 | 0 | 02406 | TRA *+3 | OK |
| 02404 | 0074 | 00 | 4 | 07120 | TSX ERROR-1,4 | ERROR HERE WOULD INDICATE |
| 02405 | -3 | 00000 | 4 | 02250 | TXL BUG,4,0 | LDA IND. ADDRESS FAILURE THIS ERROR WOULD BE TIED IN WITH AN ERROR IN ROUTINE AT BUGS |
| 02406 | 0074 | 00 | 4 | 07126 | TSX OK,4 | OUT TO TEST SWITCHES |
| 02407 | 0020 | 00 | 0 | 02300 | TRA AGAIN | REPEAT SW=1 DOWN |
| 02410 | 0761 | 00 | 0 | 00000 | NOP | |
| 02411 | 0774 | 00 | 2 | 00000 | AXT 0,2 | CLEAR XRB |
| 02412 | 0760 | 00 | 0 | 00163 | SWT 3 | |
| 02413 | 0020 | 00 | 0 | 02415 | TRA WPRA1 | |
| 02414 | 0020 | 00 | 0 | 00072 | TRA DS-1 | TEST NEXT DRUM |

| | | | |
|-------|-----------------|------|----------|
| 02473 | +0000000000003 | D3B | OCT 0003 |
| 02474 | +0000000000004 | D4B | OCT 0004 |
| 02475 | +0000000000005 | D5B | OCT 0005 |
| 02476 | +0000000000006 | D6B | OCT 0006 |
| 02477 | +0000000000007 | D7B | OCT 0007 |
| 02500 | +0000000000010 | D8B | OCT 0010 |
| 02501 | +0000000000011 | D9B | OCT 0011 |
| 02502 | +00000000000100 | D10B | OCT 0100 |
| 02503 | +00000000000101 | D11B | OCT 0101 |
| 02504 | +00000000000102 | D12B | OCT 0102 |
| 02505 | +00000000000103 | D13B | OCT 0103 |
| 02506 | +00000000000104 | D14B | OCT 0104 |
| 02507 | +00000000000105 | D15B | OCT 0105 |
| 02510 | +00000000000106 | D16B | OCT 0106 |
| 02511 | +0000000000000 | CAD | OCT 0 |

| | | | |
|-------|-----------------|------|------------------------------|
| 02512 | -377777777776 | KP0 | OCT 777777777776 |
| 02513 | +0000000000000 | K | OCT 0 |
| 02514 | +0000000000000 | | OCT 0 |
| 02515 | +0000000000000 | | OCT 0 |
| 02516 | +0002000000020 | | OCT 200000020 |
| 02517 | +0000400000020 | | OCT 400000020 |
| 02520 | +010036004017 | | OCT 10036004017 |
| 02521 | +003377003757 | | OCT 3377003757 |
| 02522 | 0020 00 0 00423 | K2 | TRA LOAD+4 |
| 02523 | 0020 00 0 00427 | K3 | TRA LOAD1 |
| 02524 | +0000000000004 | K4 | OCT 4 |
| 02525 | 0020 00 0 00034 | K5 | TRA CCCC+4 |
| 02526 | +0000020000001 | K6 | OCT 2000001 |
| 02527 | +000010000400 | | OCT 10000400 DEC 10, ADR 400 |
| 02530 | +001000000400 | | OCT 1000000400 |
| 02531 | +007776003777 | | OCT 7776003777 |
| 02532 | +010776004377 | K7 | OCT 10776004377 |
| 02533 | +0000000000010 | K10 | OCT 10 |
| 02534 | +0000000000012 | K12 | OCT 12 |
| 02535 | +0000000000014 | K14 | OCT 14 |
| 02536 | +0000000000015 | K15 | OCT 15 |
| 02537 | +0000000000016 | K16 | OCT 16 |
| 02540 | +0000000000017 | K17 | OCT 17 |
| 02541 | +0000000000022 | K22 | OCT 22 |
| 02542 | +0000000000050 | K50 | OCT 50 |
| 02543 | +0000000000062 | K62 | OCT 62 |
| 02544 | +0000000000100 | K100 | OCT 100 |
| 02545 | +0000000000300 | K300 | OCT 300 |
| 02546 | +0000000000301 | K301 | OCT 301 |
| 02547 | +0000000000302 | K302 | OCT 302 |
| 02550 | +0000000000303 | K303 | OCT 303 |
| 02551 | +0000000000304 | K304 | OCT 304 |
| 02552 | +0000000000305 | K305 | OCT 305 |
| 02553 | +0000000000306 | K306 | OCT 306 |
| 02554 | +0000000000307 | K307 | OCT 307 |
| 02555 | +0000000000310 | K310 | OCT 310 |
| 02556 | +0000000000311 | K311 | OCT 311 |
| 02557 | +0000000000312 | K312 | OCT 312 |
| 02560 | +0000000000313 | K313 | OCT 313 |

| | | | | | |
|-------|---------------|-------|-----|--------------|--------------|
| 02561 | +000000000314 | K314 | OCT | 314 | |
| 02562 | +000000000315 | K315 | OCT | 315 | |
| 02563 | +000000000316 | K316 | OCT | 316 | |
| 02564 | +000000000317 | K317 | OCT | 317 | |
| 02565 | +000000000320 | K320 | OCT | 320 | |
| 02566 | +000000000321 | K321 | OCT | 321 | |
| 02567 | +000000000400 | K400 | OCT | 400 | |
| 02570 | +000000001000 | K1000 | OCT | 1000 | |
| 02571 | +000000003471 | K3471 | OCT | 3471 | |
| 02572 | +000000003472 | K3472 | OCT | 3472 | |
| 02573 | +000000003700 | K3700 | OCT | 3700 | |
| 02574 | +000000003770 | K3770 | OCT | 3770 | |
| 02575 | +000000003777 | K3777 | OCT | 3777 | |
| 02576 | +000000004000 | K4000 | OCT | 4000 | |
| 02577 | +000000007776 | K7776 | OCT | 7776 | |
| | | | | | |
| 02600 | -032421600000 | LDA | OCT | 432421600000 | |
| 02601 | +000000000000 | LDA2 | OCT | 0 | |
| 02602 | +000000000000 | LDA3 | OCT | 0 | |
| 02603 | +000000000000 | LDA4 | OCT | 0 | |
| 02604 | +000000000000 | LDA10 | OCT | | LDA ADDRESS |
| 02605 | +000000000000 | LD37 | OCT | 0 | |
| | | | | | |
| 02606 | +000000000001 | ONE | OCT | 1 | |
| 02607 | -377777777777 | ONES | OCT | 777777777777 | |
| | | | | | |
| 02610 | +000000000000 | PRNG | OCT | 0 | |
| | | | | | |
| 02611 | -112451600000 | RDR | OCT | 512451600000 | |
| | | | | | |
| 02612 | +000000000000 | RN7 | OCT | 0 | |
| 02613 | +357642357563 | RR | OCT | 357642357563 | |
| | | | | | |
| 02614 | +000000000010 | TEN | OCT | 10 | |
| 02615 | +000000000000 | TEST1 | OCT | 0 | TEST WORD |
| 02616 | -377777777777 | TEST2 | OCT | 777777777777 | TEST WORD |
| 02617 | +252525252525 | TEST3 | OCT | 252525252525 | |
| 02620 | -125252525252 | TEST4 | OCT | 525252525252 | |
| 02621 | -307070007070 | TEST5 | OCT | 707070007070 | |
| 02622 | +070707770707 | TEST6 | OCT | 070707770707 | |
| 02623 | +000000000003 | THREE | OCT | 3 | |
| 02624 | +000000000000 | TP | OCT | 0 | |
| 02625 | +000000000000 | TPP | OCT | 0 | |
| 02626 | +000000000002 | TWO | OCT | 2 | |
| 02627 | +000000000000 | T1 | OCT | 0 | TEMP STORAGE |
| 02630 | +000000000000 | T2 | OCT | 0 | TEMP STORAGE |
| 02631 | +000000000000 | T3 | OCT | | TEMP STORAGE |
| 02632 | +000000000000 | T4 | OCT | 0 | |
| 02633 | +000000000000 | T5 | OCT | 0 | |
| 02634 | +000000000000 | T6 | OCT | 0 | |
| 02635 | +000000000000 | T7 | OCT | 0 | |
| 02636 | +000000000000 | T10 | OCT | 0 | |
| 02637 | +000000000020 | T20 | OCT | 20 | |
| | | | | | |
| 02640 | +000000000000 | T21 | OCT | 0 | |
| 02641 | -262451600000 | WDR | OCT | 662451600000 | |

| | | | | |
|-------|-----------------|-------|------------------|--------------------|
| 02642 | +000000000000 | ZERO | OCT 0 | |
| 02643 | +000000000000 | CNTRL | OCT 0 | |
| 02644 | 0761 00 0 02570 | NOP | K1000 | LDA IN ADDRESS |
| 02645 | +000000007777 | | OCT 7777 | |
| 02646 | +000000007775 | WRDR | OCT 7775 | |
| 02647 | +000000000000 | CHECK | OCT 0 | |
| 02650 | +000000000000 | | OCT 0 | |
| 02651 | +000000000000 | | OCT 0 | |
| 02652 | +000000000000 | CHEC | OCT 0 | |
| 02653 | +000000000000 | | OCT 0 | |
| 02654 | -376740000000 | MASK1 | OCT 776740000000 | |
| 02655 | +000004000000 | LBIT | OCT 4000000 | |
| 02656 | +000000000024 | TWTY | OCT 24 | |
| 02657 | +000010000000 | HBIT | OCT 10000000 | |
| 02660 | +000000000070 | SVTY | OCT 70 | |
| 02661 | +000004000002 | D02 | OCT 4000002 | |
| 02662 | +000124000052 | D52 | OCT 124000052 | |
| 02663 | +000524000252 | D252 | OCT 524000252 | |
| 02664 | +002524001252 | D1252 | OCT 2524001252 | |
| 02665 | +000000000000 | D111 | OCT 0 | |
| 02666 | +000000000000 | D222 | OCT 0 | |
| 02667 | +000000000000 | D333 | OCT 0 | |
| 02670 | +000000000000 | D444 | OCT 0 | |
| 02671 | +000000000040 | PRIMG | OCT 40 | 9L |
| 02672 | +020200000000 | | OCT 2020000000 | 9R |
| 02673 | +000000000000 | | OCT 0 | 8L |
| 02674 | +000000000000 | | OCT 0 | 8R |
| 02675 | +000002004000 | | OCT 2004000 | 7L |
| 02676 | +040000000000 | | OCT 4000000000 | 7R |
| 02677 | +000000020000 | | OCT 20000 | 6L |
| 02700 | +100000000000 | | OCT 10000000000 | 6R |
| 02701 | +000000001200 | | OCT 1200 | 5L |
| 02702 | +000000000000 | | OCT 0 | R5 |
| 02703 | +000000010020 | | OCT 10020 | 4L |
| 02704 | +000540000000 | | OCT 540000000 | 4R |
| 02705 | +000000042400 | | OCT 42400 | 3L |
| 02706 | +212000000000 | | OCT 21200000000 | 3R |
| 02707 | +000000600000 | | OCT 600000 | 2L |
| 02710 | +000000000000 | | OCT 0 | 2R |
| 02711 | +000001000004 | | OCT 1000004 | 1L |
| 02712 | +004000000000 | | OCT 4000000000 | |
| 02713 | +000000600410 | | OCT 600410 | 0L |
| 02714 | +000100000000 | | OCT 100000000 | 0R |
| 02715 | +000002036103 | | OCT 2036103 | 11L |
| 02716 | -302240000000 | | OCT 702240000000 | 11R |
| 02717 | +000001041220 | | OCT 1041220 | 12L |
| 02720 | +074400000000 | | OCT 74400000000 | 12R |
| | 06721 | X | BES 2048 | |
| 06721 | 0000 00 0 02721 | K2377 | HTR X-2048 | CONST FOR LDA TEST |
| | 02731 | WPA | EQU X-2040 | |
| | 06722 | RN | BSS 64 | |

07022 B HED

*THIS SECTION OF THE TEST-DRUM SPEED TEST-
*MUST BE TRANSFERRED INTO, MANUALLY

*IN ORDER FOR THIS PROGRAM TO OPERATE CORRECTLY
*A JUMPER WIRE MUST BE RUN FROM MF3 R06-1, SYSTEMS
*PAGE 7.03, TO MF4 F02-3, SYSTEMS PAGE 5.05.03

| | | | | | | | |
|---------------------------------|---------|----|-------|-------|----|-------------|-----------------------------------|
| 07022 | 0500 | 00 | 0 | 07105 | A | CLA K | POST |
| 07023 | 0601 | 00 | 0 | 00000 | | STO 0 | RESTART |
| 07024 | 0760 | 00 | 0 | 00000 | | CLM | CLEAR ACC TEST SW FIVE |
| 07025 | 0760 | 00 | 0 | 00165 | | SWT 5 | UP- DR FR 1, DWN DR FR 2 |
| 07026 | 0020 | 00 | 0 | 07035 | | TRA A2 | MEASURE DRUM FRAME 2 TEST SW 1 |
| 07027 | 0760 | 00 | 0 | 00161 | | SWT 1 | UP PH DR A DN PH DR B |
| 07030 | 0020 | 00 | 0 | 07033 | | TRA A1 | |
| 07031 | 0762 | 00 | 0 | 00307 | | RDR 7 | MEASURE DRUM B |
| 07032 | 0020 | 00 | 0 | 07042 | | TRA A4 | |
| 07033 | 0762 | 00 | 0 | 00305 | A1 | RDR 5 | MEASURE DRUM A |
| 07034 | 0020 | 00 | 0 | 07042 | | TRA A4 | MEASURE DRUM FRAME 1 |
| 07035 | 0760 | 00 | 0 | 00161 | A2 | SWT 1 | |
| 07036 | 0020 | 00 | 0 | 07041 | | TRA A3 | |
| 07037 | 0762 | 00 | 0 | 00303 | | RDR 3 | MEASURE DRUM B |
| 07040 | 0020 | 00 | 0 | 07042 | | TRA A4 | |
| 07041 | 0762 | 00 | 0 | 00301 | A3 | RDR 1 | MEASURE DRUM A |
| 07042 | 0534 | 00 | 4 | 07107 | A4 | LXA ZERO1,4 | L 0 |
| 07043 | 0760 | 00 | 0 | 00140 | | SLF | TURN OFF SENSE LIGHTS |
| 07044 | -0760 | 00 | 0 | 00141 | | SLT 1 | TEST UNTIL LIGHT |
| 07045 | 0020 | 00 | 0 | 07044 | | TRA A4+2 | COMES ON |
| 07046 | -0760 | 00 | 0 | 00141 | A5 | SLT 1 | COUNT UNTIL LIGHT COMES |
| 07047 | 1 00001 | 4 | 07046 | | | TXI A5,4,1 | ON AGAIN |
| CONVERT CYCLES TO MISCROSECONDS | | | | | | | |
| 07050 | 0400 | 00 | 0 | 07110 | | ADD THRTY | L30 |
| 07051 | 0400 | 00 | 0 | 07111 | A6 | ADD SIXTY | L60 |
| 07052 | 2 00001 | 4 | 07051 | | | TIX A6,4,1 | |

CONVERT CYCLES TO MISCROSECONDS

```
07053 0767 00 0 00006 A7 ALS 6 TO RPM
07054 0601 00 0 07112 STO TEMP
07055 0760 00 0 00000 CLM
07056 0560 00 0 07106 LDQ K+1 L 344705 606000
07057 0220 00 0 07112 DVH TEMP
```

CONVERT BINARY TO BCD

```
07060 0760 00 0 00000 A8 CLM
07061 0602 00 0 07112 SLW TEMP
07062 0763 00 0 00043 LLS 35
07063 0400 00 0 07113 ADD FOUR L 4
07064 0765 00 0 00046 LRS 38
07065 0534 00 1 07110 LXA THRTY,1 L 30
07066 0500 00 0 07107 A9 CLA ZERO1 L 0
07067 0220 00 0 07114 DVH TWL L 12
07070 0767 00 1 00030 ALS 24,1
07071 0400 00 0 07112 ADD TEMP
07072 0601 00 0 07112 STO TEMP
07073 2 00006 1 07066 TIX A9,1,6
07074 0000 00 0 07075 HTR SWT6
```

```
07075 0760 00 0 00166 SWT6 SWT 6 TEST SWITCH SIX
07076 0020 00 0 07100 TRA SWT6+3
07077 0020 00 0 07024 TRA A+2
07100 0762 00 0 01321 RCDA
07101 0540 00 0 07104 RCHA *+3
07102 0544 00 0 00000 LCHA 0
07103 0020 00 0 00001 TRA 1
07104 -1 00003 0 00000 MON 0,0,3
```

CONSTANTS

```
07105 0020 00 0 07024 K TRA A+2
07106 +344705606000 OCT 344705606000
07107 +0000000000000 ZERO1 OCT 0
07110 +00000000000030 THRTY OCT 30
07111 +00000000000060 SIXTY OCT 60
07112 +00000000000000 TEMP OCT 0
07113 +00000000000004 FOUR OCT 4
07114 +00000000000012 TWL OCT 12
```

* SENSE SWITCHES INTERROGATION AND DIAGNOSTIC
* PRINT SUBROUTINE FOR 709

```
07115 0A HED
07115 0600 00 0 07166 STZ KONST+3 INDICATE I/O TYPE PRINT
OUT
07116 0020 00 0 07121 TRA ERROR
07117 0600 00 0 07166 STZ KONST+3 SET STORAGE TO ZEROS
MODIFY INSTRUCTIONS FOR
RETURN ADDR TO MAIN PROG
07120 0020 00 0 07150 TRA MOD
07121 0600 00 0 07163 ERROR STZ KONST DO NOT REPEAT SECTION
```

| | | | | | | | |
|-------|---------|----|---|-------|------|-------------|--|
| 07122 | 0600 | 00 | 0 | 07164 | | STZ KONST+1 | IF SENSE SW 4 IS DOWN |
| 07123 | 0760 | 00 | 0 | 00162 | | PSE 114 | IF SENSE SW 2 IS UP THEN- |
| 07124 | 0020 | 00 | 0 | 07132 | | TRA SSW3 | CHECK SSW 3 |
| 07125 | 2 00001 | 4 | | 07126 | | TIX OK,4,1 | |
| 07126 | -0634 | 00 | 4 | 10110 | OK | SXD LOC+1,4 | 2'S COMPL OF PROGRAM LOCATION LAST PREFORMED |
| 07127 | 0760 | 00 | 0 | 00161 | | PSE 113 | IF SENSE SW 1 IS UP THEN |
| 07130 | 0020 | 00 | 0 | 07135 | | TRA RELY | CHECK SS 4 |
| 07131 | 0020 | 00 | 4 | 00001 | | TRA 1,4 | IF DOWN REPEAR SECTION OF PROG |
| 07132 | 0760 | 00 | 0 | 00163 | SSW3 | PSE 115 | IF SENSE SW 3 IS UP |
| 07133 | 0020 | 00 | 0 | 07175 | | TRA PRINT | PRINT ON ERROR |
| 07134 | 0000 | 00 | 0 | 07125 | | HTR OK-1 | IF SS 3 IS DOWN STOP ON ERROR HTR 2'S COMPLEMENT OF INDEX REGISTER C CONTIANS THE ERROR ADDRESS OF THE SECTION OF THE PROG IN ERROR |
| 07135 | 0760 | 00 | 0 | 00164 | RELY | PSE 116 | IF SENSE SWITCH 5 IS UP |
| 07136 | 0020 | 00 | 4 | 00003 | | TRA 3,4 | GO TO NEXT SECTION OF THE PROG IF DOWN REPEAR SECTION OF THE PROGRAM N TIMES OR THE NUMEBR OF TIMES THAT IS SPECIFIED IN LOC KONST+2 |
| 07137 | 0500 | 00 | 0 | 07164 | | CLA KONST+1 | COUNTER |
| 07140 | 0402 | 00 | 0 | 07163 | | SUB KONST | L+1 REDUCE COUNT BY 1 |
| 07141 | 0601 | 00 | 0 | 07164 | | STO KONST+1 | |
| 07142 | -0100 | 00 | 0 | 07131 | | TNZ OK+3 | |
| 07143 | 0500 | 00 | 0 | 07165 | | CLA KONST+2 | L+50 COUNT CONSTANT |
| 07144 | 0601 | 00 | 0 | 07164 | | STO KONST+1 | |
| 07145 | 0500 | 00 | 0 | 10105 | | CLA STOR+7 | L+1 |
| 07146 | 0601 | 00 | 0 | 07163 | | STO KONST | |
| 07147 | 0020 | 00 | 4 | 00003 | | TRA 3,4 | |
| 07150 | 0600 | 00 | 0 | 07167 | MOD | STZ KONST+4 | SET STORAGE TO ZEROS |
| 07151 | 0600 | 00 | 0 | 07164 | | STZ KONST+1 | |
| 07152 | 0600 | 00 | 0 | 07163 | | STZ KONST | |

| | | | | | | | |
|-------|----------------|----|---|-------|---------|--------------|---|
| 07153 | 0760 | 00 | 0 | 00162 | ERR | PSE 114 | IF SS 2 IS UP CHECK |
| 07154 | 0020 | 00 | 0 | 07160 | | TRA SSW3A | SENSE SWITHC 3 |
| 07155 | 0760 | 00 | 0 | 00161 | OK2 | PSE 113 | SSW1 UP-GO TO NEXT ROUTINE |
| 07156 | 0020 | 00 | 4 | 00002 | | TRA 2,4 | EXIT |
| 07157 | 0020 | 00 | 4 | 00001 | | TRA 1,4 | REPEAT TEST |
| 07160 | 0760 | 00 | 0 | 00163 | SSW3A | PSE 115 | IS SENSE SWITCH 3 IS UP |
| 07161 | 0020 | 00 | 0 | 07175 | | TRA PRINT | PRINT ERROR |
| 07162 | 0000 | 00 | 0 | 07155 | HTR OK2 | | 2'S COMPLEMENT OF XRC CONTIANS THE ERROR ADDR OF SECTION OF PROG LAST EXECUTED |
| 07163 | +0000000000001 | | | | KONST | OCT 1 | |
| 07164 | +0000000000050 | | | | | OCT 50 | |
| 07165 | +0000000000050 | | | | | OCT 50 | COUNT CONSTANT |
| 07166 | +0000000000001 | | | | | OCT 1 | |
| 07167 | +0000000000001 | | | | | OCT 1 | |
| 07170 | 0020 | 00 | 0 | 07125 | | TRA OK-1 | EXIT FROM PRINT PROG |
| 07171 | 0020 | 00 | 0 | 07155 | | TRA OK2 | EXIT FROM PRINT WHEN ENTRY IS TO ERROR-1 |
| 07172 | +0000000000001 | | | | | OCT 1 | |
| 07173 | +0000000000000 | | | | WDNO | OCT | |
| 07174 | +0000000000000 | | | | RECNO | OCT | |
| 07175 | 0601 | 00 | 0 | 10076 | PRINT | STO STOR | PRINT ROUTINE ACC CONTENTS |
| 07176 | 0771 | 00 | 0 | 00043 | | ARS 35 | |
| 07177 | 0602 | 00 | 0 | 10101 | | SLW STOR+3 | OV FL BITS |
| 07200 | 0754 | 00 | 2 | 00002 | | PXA 2,2 | |
| 07201 | 0621 | 00 | 0 | 10100 | | STA STOR+2 | XRB |
| 07202 | -0634 | 00 | 1 | 10100 | | SXD STOR+2,1 | PLACE XRA INTO DECR |
| 07203 | -0634 | 00 | 4 | 10101 | | SXD STOR+3,4 | PLACE XRC INTO DECR |
| 07204 | -0600 | 00 | 0 | 10077 | | STQ STOR+1 | MQ CONTENTS |
| 07205 | 0500 | 00 | 0 | 10103 | CHK1 | CLA STOR+5 | L 100000 |
| 07206 | 0761 | 00 | 0 | 00000 | | NOP | |
| 07207 | 0020 | 00 | 0 | 07211 | | TRA CHK1+4 | NO |
| 07210 | -0602 | 00 | 0 | 10101 | | ORS STOR+3 | YES |
| 07211 | 0771 | 00 | 0 | 00003 | | ARS 3 | |
| 07212 | 0760 | 00 | 0 | 00012 | | DCT | DIV CK TEST |
| 07213 | -0602 | 00 | 0 | 10101 | | ORS STOR+3 | |
| 07214 | 0771 | 00 | 0 | 00003 | | ARS 3 | |
| 07215 | 0761 | 00 | 0 | 00000 | | NOP | |
| 07216 | 0020 | 00 | 0 | 07220 | CHK2 | TRA CHK2+2 | NO |
| 07217 | -0602 | 00 | 0 | 10101 | | ORS STOR+3 | |
| 07220 | 0771 | 00 | 0 | 00003 | | ARS 3 | |
| 07221 | -0140 | 00 | 0 | 07223 | | TNO CHK4-1 | ACC OV FL-YES |
| 07222 | -0602 | 00 | 0 | 10101 | | ORS STOR+3 | NO |

| | | | | | | | | | |
|-----------------------------------|-------|-------|---|-------|-------|-----|------------|--|--|
| 07223 | 0760 | 00 | 0 | 00000 | | CLM | | SENSE SWITCHES | |
| 07224 | 0534 | 00 | 1 | 10106 | CHK4 | LXA | STOR+8,1 | L +4 | |
| 07225 | 0767 | 00 | 0 | 00003 | | ALS | 3 | | |
| 07226 | -0760 | 00 | 1 | 00145 | | MSE | 101,1 | | |
| 07227 | 0020 | 00 | 0 | 07232 | | TRA | *+3 | | |
| 07230 | 0400 | 00 | 0 | 10105 | | ADD | STOR+7 | L +1 | |
| 07231 | 0760 | 00 | 1 | 00145 | | PSE | 101,1 | RESET LITES | |
| 07232 | 2 | 00001 | 1 | 07225 | | TIX | CHK4+1,1,1 | | |
| 07233 | 0534 | 00 | 1 | 10104 | CHK3 | LXA | STOR+6,1 | L +6 | |
| 07234 | 0767 | 00 | 0 | 00003 | | ALS | 3 | | |
| 07235 | 0760 | 00 | 1 | 00167 | | PSE | 119,1 | | |
| 07236 | 0020 | 00 | 0 | 07240 | | TRA | CHK3+5 | | |
| 07237 | 0400 | 00 | 0 | 10105 | | ADD | STOR+7 | L +1 | |
| 07240 | 2 | 00001 | 1 | 07234 | | TIX | CHK3+1,1,1 | | |
| | | | | | | | | | |
| 07241 | 0602 | 00 | 0 | 10102 | | SLW | STOR+4 | RETAIN PSE + MSE INDICATIONS WAS ENTRY FROM SUB- | |
| 07242 | 0500 | 00 | 0 | 07167 | CHK3A | CLA | KONST+4 | ROUTINE AT ERROR-1 | |
| 07243 | 0100 | 00 | 0 | 07251 | | TZE | CHK3A+7 | YES | |
| 07244 | 0500 | 00 | 0 | 07200 | | CLA | PRINT+3 | NO | |
| 07245 | 0621 | 00 | 0 | 07257 | | STA | CHK5+1 | RESET ADDR | |
| 07246 | 0500 | 00 | 0 | 07170 | | CLA | KONST+5 | | |
| 07247 | 0601 | 00 | 0 | 07644 | | STO | EXIT | | |
| 07250 | 0020 | 00 | 0 | 07256 | | TRA | CHK5 | | |
| | | | | | | | | | |
| 07251 | 0500 | 00 | 0 | 10105 | | CLA | STOR+7 | L+1 | |
| 07252 | 0601 | 00 | 0 | 07167 | | STO | KONST+4 | | |
| 07253 | 0621 | 00 | 0 | 07257 | | STA | CHK5+1 | | |
| 07254 | 0500 | 00 | 0 | 07171 | | CLA | KONST+6 | | |
| 07255 | 0601 | 00 | 0 | 07644 | | STO | EXIT | | |
| | | | | | | | | | |
| OBTAIN TEST LOC AND ERROR ADDR | | | | | | | | | |
| 07256 | -0534 | 00 | 4 | 10101 | CHK5 | LXD | STOR+3,4 | XRC | |
| 07257 | -0754 | 00 | 4 | 00002 | | PXD | 2,4 | | |
| 07260 | 0760 | 00 | 0 | 00006 | | COM | | | |
| 07261 | 0400 | 00 | 0 | 10136 | | ADD | BIT2+2 | +1 TO DECREMENT | |
| 07262 | 0622 | 00 | 0 | 10107 | | STD | LOC | ERROR ADDR INTO DECR | |
| 07263 | 0771 | 00 | 0 | 00022 | | ARS | 18 | | |
| 07264 | 0402 | 00 | 0 | 07257 | | SUB | CHK5+1 | L +2 | |
| 07265 | 0621 | 00 | 0 | 07266 | | STA | CHK6 | | |
| 07266 | -0500 | 00 | 0 | 00000 | CHK6 | CAL | 0 | PLACE | |
| 07267 | 0621 | 00 | 0 | 10107 | | STA | LOC | TEST LOC INTO ADDR | |
| 07270 | 0630 | 00 | 0 | 10107 | | STP | LOC | | |
| | | | | | | | | | |
| OBTAIN OPN OF INST | | | | | | | | | |
| 07271 | 0402 | 00 | 0 | 10105 | | SUB | STOR+7 | L +1 | |
| 07272 | 0621 | 00 | 0 | 07273 | | STA | *+1 | | |
| 07273 | 0560 | 00 | 0 | 00000 | | LDQ | 0 | BCD OPERATION | |
| | | | | | | | | | |
| 07274 | 0534 | 00 | 1 | 10104 | CHK7 | LXA | STOR+6,1 | L +6 | |
| 07275 | 0760 | 00 | 0 | 00000 | | CLM | | | |

| | | | | | | | | |
|-------|-------|-------|---|-------|-------|-----|------------|----------------------------------|
| 07276 | -0763 | 00 | 0 | 00002 | | LGL | 2 | |
| 07277 | 0734 | 00 | 4 | 00000 | | PAX | 0,4 | ZONE BIT |
| 07300 | -0763 | 00 | 0 | 00004 | | LGL | 4 | |
| 07301 | 0340 | 00 | 0 | 10121 | | CAS | BIT+2 | CHECK FOR BLANK L +60 |
| 07302 | 0020 | 00 | 0 | 07304 | | TRA | *+2 | |
| 07303 | 0020 | 00 | 0 | 07317 | | TRA | CHK7A | YES |
| 07304 | 0340 | 00 | 0 | 10130 | | CAS | BIT+9 | CHECK FOR HYPHEN |
| 07305 | 0020 | 00 | 0 | 07307 | | TRA | *+2 | |
| 07306 | 0020 | 00 | 0 | 07750 | | TRA | TRAP | YES- INDICATES A TRAP ROUTINE |
| 07307 | -0320 | 00 | 0 | 10132 | | ANA | BIT+11 | MASK FOR NUMERIC |
| 07310 | 0734 | 00 | 2 | 00000 | | PAX | 0,2 | |
| 07311 | 3 | 00012 | 2 | 07317 | | TXH | CHK7A,2,10 | IGNORE SPECIAL CHARS |
| 07312 | 0500 | 00 | 0 | 10120 | | CLA | BIT+1 | COL INDICATOR |
| 07313 | 0771 | 00 | 1 | 00006 | | ARS | 6,1 | |
| 07314 | -0602 | 00 | 2 | 07763 | | ORS | REC1L+9,2 | |
| 07315 | -3 | 00000 | 4 | 07317 | | TXL | *+2,4 | |
| 07316 | -0602 | 00 | 4 | 07766 | | ORS | REC1L+12,4 | |
| 07317 | 2 | 00001 | 1 | 07275 | CHK7A | TIX | CHK7+1,1,1 | |
| 07320 | 0560 | 00 | 0 | 00000 | CHK8 | LDQ | 0 | |
| 07321 | 0534 | 00 | 1 | 10122 | | LXA | BIT+3,1 | L +14 |
| 07322 | 0074 | 00 | 2 | 07735 | | TSX | CH22,2 | |
| 07323 | -0500 | 00 | 0 | 10131 | | CAL | BIT+10 | COL IND |
| 07324 | 0771 | 00 | 1 | 00014 | | ARS | 12,1 | |
| 07325 | -0602 | 00 | 4 | 07777 | | ORS | REC1R+9,4 | |
| 07326 | 2 | 00001 | 1 | 07322 | | TIX | *-4,1,1 | |
| 07327 | -0500 | 00 | 0 | 10107 | CH1 | CAL | LOC | PUT TEST LOC INTO IMAGE |
| 07330 | 0765 | 00 | 0 | 00017 | | LRS | 15 | |
| 07331 | 0534 | 00 | 1 | 10114 | | LXA | LOC+5,1 | L +5 |
| 07332 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07333 | -0500 | 00 | 0 | 10117 | | CAL | BIT | BIT COLUMN 10 |
| 07334 | 0771 | 00 | 1 | 00005 | | ARS | 5,1 | |
| 07335 | -0602 | 00 | 4 | 07763 | | ORS | REC1L+9,4 | |
| 07336 | 2 | 00001 | 1 | 07332 | | TIX | CH1+3,1,1 | |
| 07337 | -0534 | 00 | 4 | 10107 | CH5 | LXD | LOC,4 | PUT ERROR ADDR INTO IMAGE |
| 07340 | -0754 | 00 | 4 | 00000 | | PXD | 0,4 | |
| 07341 | 0765 | 00 | 0 | 00041 | | LRS | 33 | |
| 07342 | 0534 | 00 | 1 | 10114 | | LXA | LOC+5,1 | L +5 |
| 07343 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07344 | -0500 | 00 | 0 | 10115 | | CAL | LOC+6 | -0 |
| 07345 | 0771 | 00 | 1 | 00006 | | ARS | 6,1 | |
| 07346 | -0602 | 00 | 4 | 07777 | | ORS | REC1R+9,4 | |
| 07347 | 2 | 00001 | 1 | 07343 | | TIX | CH5+4,1,1 | |
| 07350 | -0500 | 00 | 0 | 10102 | CH7 | CAL | STOR+4 | PUT PSE SW INTO IMAGE |
| 07351 | 0765 | 00 | 0 | 00022 | | LRS | 18 | |
| 07352 | 0534 | 00 | 1 | 10104 | | LXA | STOR+6,1 | L +6 |
| 07353 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |

| | | | | | | | | |
|-------|-------|-------|---|-------|------|------|------------|--------------------------|
| 07354 | -0500 | 00 | 0 | 10130 | | CAL | BIT+9 | |
| 07355 | 0771 | 00 | 1 | 00006 | | ARS | 6,1 | |
| 07356 | -0602 | 00 | 4 | 07777 | | ORS | REC1R+9,4 | |
| 07357 | 2 | 00001 | 1 | 07353 | | TIX | CH7+3,1,1 | |
| | | | | | | | | |
| 07360 | 0534 | 00 | 4 | 10122 | CH10 | LXA | BIT+3,4 | PUT 1ST REC IN PR IMAGE |
| 07361 | 0534 | 00 | 1 | 10113 | | LXA | LOC+4,1 | L +30 |
| 07362 | -0500 | 00 | 4 | 07766 | | CAL | REC1L+12,4 | LEFT HALF IMAGE |
| 07363 | 0602 | 00 | 1 | 10233 | | SLW | PR+24,1 | |
| 07364 | -0500 | 00 | 4 | 10002 | | CAL | REC1R+12,4 | |
| 07365 | 0602 | 00 | 1 | 10234 | | SLW | PR+25,1 | |
| | | | | | | | | |
| 07366 | 2 | 00001 | 4 | 07367 | | TIX | CH10+7,4,1 | |
| 07367 | 2 | 00002 | 1 | 07362 | | TIX | CH10+2,1,2 | |
| | | | | | | | | |
| 07370 | 0534 | 00 | 4 | 10122 | CH11 | LXA | BIT+3,4 | MASK IMAGE |
| 07371 | -0500 | 00 | 0 | 10140 | | CAL | MASK | MASK |
| 07372 | 0320 | 00 | 4 | 07766 | | ANS | REC1L+12,4 | |
| 07373 | -0500 | 00 | 0 | 10141 | | CAL | MASK+1 | |
| 07374 | 0320 | 00 | 4 | 10002 | | ANS | REC1R+12,4 | |
| 07375 | -0500 | 00 | 0 | 10142 | | CAL | MASK+2 | MASK LEFT HALF |
| 07376 | 0320 | 00 | 4 | 10016 | | ANS | REC2L+12,4 | 2ND RECORD |
| 07377 | -0500 | 00 | 0 | 10143 | | CAL | MASK+3 | MASK RIGHT HALF |
| 07400 | 0320 | 00 | 4 | 10032 | | ANS | REC2R+12,4 | |
| 07401 | -0500 | 00 | 0 | 10144 | | CAL | MASK+4 | MASK 3RD RECORD |
| 07402 | 0320 | 00 | 4 | 10046 | | ANS | REC3L+12,4 | LEFT HALF |
| 07403 | -0500 | 00 | 0 | 10145 | | CAL | MASK+5 | |
| 07404 | 0320 | 00 | 4 | 10062 | | ANS | REC3R+12,4 | |
| 07405 | -0500 | 00 | 0 | 10150 | | CAL | MASK+8 | MASK IND KEYS |
| 07406 | 0320 | 00 | 4 | 10076 | | ANS | REC4L+12,4 | PRINT REC |
| 07407 | -0500 | 00 | 0 | 10146 | | CAL | MASK+6 | |
| 07410 | 0320 | 00 | 4 | 10166 | | ANS | P92+1,4 | I/O IMAGE |
| 07411 | -0500 | 00 | 0 | 10147 | | CAL | MASK+7 | REC=, WORD =, ETC |
| 07412 | 0320 | 00 | 4 | 10202 | | ANS | P95+1,4 | |
| 07413 | 2 | 00001 | 4 | 07371 | | TIX | CH11+1,4,1 | |
| | | | | | | | | |
| 07414 | 0766 | 00 | 0 | 01361 | CH14 | WRS | 753 | PRINTER |
| 07415 | 0760 | 00 | 0 | 01363 | | SPRA | 3 | DOUBLE REM |
| | | | | | | | | PRINT FIRST LINE |
| | | | | | | | | TEST LOC, ERROR ADDR |
| | | | | | | | | |
| 07416 | 0074 | 00 | 1 | 07742 | | TSX | WPRA+1,1 | |
| 07417 | 0500 | 00 | 0 | 10107 | | CLA | LOC | |
| 07420 | -0120 | 00 | 0 | 07632 | | TMI | CH35-6 | |
| | | | | | | | | |
| 07421 | 0500 | 00 | 0 | 10102 | CH18 | CLA | STOR+4 | PUT MSE LITES INTO IMAGE |
| 07422 | 0765 | 00 | 0 | 00036 | | LRS | 30 | |
| 07423 | 0534 | 00 | 1 | 10106 | | LXA | STOR+8,1 | L +4 |
| 07424 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07425 | -0500 | 00 | 0 | 10133 | | CAL | BIT+12 | BIT COL 6 |
| 07426 | 0771 | 00 | 1 | 00004 | | ARS | 4,1 | |
| 07427 | -0602 | 00 | 4 | 10013 | | ORS | REC2L+9,4 | |
| 07430 | -0500 | 00 | 0 | 10125 | | CAL | BIT+6 | BIT COL 5 |
| 07431 | 0771 | 00 | 1 | 00004 | | ARS | 4,1 | |

| | | | | | | | | |
|-------|-------|-------|---|-------|------|-----|------------|-----------------------------|
| 07432 | -0602 | 00 | 4 | 10163 | | ORS | P92-2,4 | |
| 07433 | 2 | 00001 | 1 | 07424 | | TIX | CH18+3,1,1 | |
| 07434 | 0500 | 00 | 0 | 07166 | | CLA | KONST+3 | IS THIS A MAIN FRAME |
| 07435 | 0100 | 00 | 0 | 07645 | | TZE | CH41 | PRINT OUT -NO |
| | | | | | | | | FORM CARD IMAGE FOR 2ND REC |
| 07436 | 0500 | 00 | 0 | 10100 | CH15 | CLA | STOR+2 | |
| 07437 | 0765 | 00 | 0 | 00041 | | LRS | 33 | |
| 07440 | 0534 | 00 | 1 | 10106 | | LXA | STOR+8,1 | L +4 |
| 07441 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07442 | -0500 | 00 | 0 | 10124 | | CAL | BIT+5 | BIT COLUMN |
| 07443 | 0771 | 00 | 1 | 00004 | | ARS | 4,1 | |
| 07444 | -0602 | 00 | 4 | 10013 | | ORS | REC2L+9,4 | |
| 07445 | 2 | 00001 | 1 | 07441 | | TIX | CH15+3,1,1 | |
| 07446 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07447 | -0500 | 00 | 0 | 10115 | | CAL | LOC+6 | L-0 |
| 07450 | -0602 | 00 | 4 | 10027 | | ORS | REC2R+9,4 | |
| 07451 | 0074 | 00 | 2 | 07731 | CH16 | TSX | CH21,2 | |
| 07452 | 0534 | 00 | 1 | 10114 | | LXA | LOC+5,1 | L +5 |
| 07453 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07454 | -0500 | 00 | 0 | 10134 | | CAL | BIT2 | BIT COL 8 |
| 07455 | 0771 | 00 | 1 | 00005 | | ARS | 5,1 | |
| 07456 | -0602 | 00 | 4 | 10027 | | ORS | REC2R+9,4 | BIT IN IMAGE |
| 07457 | 2 | 00001 | 1 | 07453 | | TIX | CH16+2,1,1 | |
| 07460 | 0500 | 00 | 0 | 10101 | CH17 | CLA | STOR+3 | PUT XRC INTO IMAGE |
| 07461 | 0765 | 00 | 0 | 00041 | | LRS | 33 | |
| 07462 | 0534 | 00 | 1 | 10114 | | LXA | LOC+5,1 | L +5 |
| 07463 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | |
| 07464 | -0500 | 00 | 0 | 10135 | | CAL | BIT2+1 | BIT IN COL 19 |
| 07465 | 0771 | 00 | 1 | 00005 | | ARS | 5,1 | |
| 07466 | -0602 | 00 | 4 | 10027 | | ORS | REC2R+9,4 | BIT IN IMAGE |
| 07467 | 2 | 00001 | 1 | 07463 | | TIX | CH17+3,1,1 | |
| 07470 | 0560 | 00 | 0 | 10077 | CH27 | LDQ | STOR+1 | CONTENTS OF MQ |
| 07471 | 0534 | 00 | 1 | 10122 | | LXA | BIT+3,1 | L +14 |
| 07472 | 0074 | 00 | 2 | 07735 | | TSX | CH22,2 | |
| 07473 | -0500 | 00 | 0 | 10131 | | CAL | BIT+10 | BIT COL 15 |
| 07474 | 0771 | 00 | 1 | 00014 | | ARS | 12,1 | |
| 07475 | -0602 | 00 | 4 | 10013 | | ORS | REC2L+9,4 | |
| 07476 | 2 | 00001 | 1 | 07472 | | TIX | CH27+2,1,1 | |
| 07477 | -0500 | 00 | 0 | 10112 | | CAL | LOC+3 | WAS ROUTINE USING TRAP |
| 07500 | 0402 | 00 | 0 | 10130 | | SUB | BIT+9 | |
| 07501 | -0100 | 00 | 0 | 07505 | | TNZ | *+4 | NO |
| 07502 | -0500 | 00 | 0 | 10105 | | CAL | STOR+7 | L +1 |
| 07503 | -0602 | 00 | 0 | 10026 | | ORS | REC2R+8 | |
| 07504 | 0020 | 00 | 0 | 07507 | | TRA | *+3 | |
| 07505 | -0500 | 00 | 0 | 10105 | | CAL | STOR+7 | L +1 |
| 07506 | -0602 | 00 | 0 | 10027 | | ORS | REC2R+9 | |
| 07507 | 0600 | 00 | 0 | 10112 | | STZ | LOC+3 | |
| 07510 | 0534 | 00 | 4 | 10122 | CH23 | LXA | BIT+3,4 | |
| 07511 | 0534 | 00 | 1 | 10113 | | LXA | LOC+4,1 | L +30 |

| | | | | | | | | | |
|-------|-------|-------|---|-------|------|-----|------------|----------------------------|--|
| 07512 | -0500 | 00 | 4 | 10016 | | CAL | REC2L+12,4 | LEFT HALF | |
| 07513 | 0602 | 00 | 1 | 10233 | | SLW | PR+24,1 | | |
| 07514 | -0500 | 00 | 4 | 10032 | | CAL | REC2R+12,4 | RIGHT HALF IMAGE | |
| 07515 | 0602 | 00 | 1 | 10234 | | SLW | PR+25,1 | | |
| 07516 | 2 | 00001 | 4 | 07517 | | TIX | CH23+7,4,1 | | |
| 07517 | 2 | 00002 | 1 | 07512 | | TIX | CH23+2,1,2 | | |
| | | | | | | | | | |
| 07520 | 0074 | 00 | 1 | 07741 | | TSX | WPRA,1 | PRINT 2ND LINE | |
| | | | | | | | | | |
| 07521 | -0500 | 00 | 0 | 10101 | CH20 | CAL | STOR+3 | PUT TRGS INTO | |
| 07522 | 0765 | 00 | 0 | 00022 | | LRS | 18 | IMAGE | |
| 07523 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | | |
| 07524 | -0500 | 00 | 0 | 10127 | | CAL | BIT+8 | BIT COL 26 | |
| 07525 | -0602 | 00 | 4 | 10057 | | ORS | REC3R+9,4 | F.P.-OVFL | |
| 07526 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | | |
| 07527 | -0500 | 00 | 0 | 10105 | | CAL | STOR+7 | BIT IN 35 | |
| 07530 | -0602 | 00 | 4 | 10043 | | ORS | REC3L+9,4 | INDICATE DIV CK | |
| | | | | | | | | | |
| 07531 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | | |
| | | | | | | | | | |
| 07532 | -0500 | 00 | 0 | 10105 | | CAL | STOR+7 | L +1 | |
| 07533 | 0767 | 00 | 0 | 00001 | | ALS | 1 | BIT IN 34 | |
| 07534 | -0602 | 00 | 4 | 10057 | | ORS | REC3R+9,4 | F.P. UNFL | |
| 07535 | 0074 | 00 | 2 | 07731 | | TSX | CH21,2 | | |
| 07536 | -0500 | 00 | 0 | 10123 | | CAL | BIT+4 | BIT COL 12 | |
| 07537 | 0771 | 00 | 0 | 00001 | | ARS | 1 | | |
| 07540 | -0602 | 00 | 4 | 10057 | | ORS | REC3R+9,4 | ACC OVFL | |
| | | | | | | | | | |
| 07541 | 0760 | 00 | 0 | 00000 | CH24 | CLM | | PUT Q + P BITS | |
| 07542 | 0763 | 00 | 0 | 00013 | | LLS | 11 | INTO IMAGE | |
| 07543 | 0734 | 00 | 4 | 00000 | | PAX | 0,4 | | |
| 07544 | -0500 | 00 | 0 | 10123 | | CAL | BIT+4 | BIT IN COL 4 | |
| 07545 | 0767 | 00 | 0 | 00002 | | ALS | 2 | | |
| 07546 | -0602 | 00 | 4 | 10043 | | ORS | REC3L+9,4 | Q BIT | |
| 07547 | 0760 | 00 | 0 | 00000 | | CLM | | GET P BIT | |
| 07550 | 0763 | 00 | 0 | 00001 | | LLS | 1 | | |
| 07551 | 0734 | 00 | 4 | 00000 | | PAX | 0,4 | | |
| 07552 | -0500 | 00 | 0 | 10123 | | CAL | BIT+4 | | |
| 07553 | 0771 | 00 | 0 | 00002 | | ARS | 2 | BIT IN COL 13 | |
| 07554 | -0602 | 00 | 4 | 10043 | | ORS | REC3L+9,4 | | |
| 07555 | 0560 | 00 | 0 | 10076 | CH25 | LDQ | STOR | | |
| 07556 | -0500 | 00 | 0 | 10125 | | CAL | BIT+6 | PUT + SIGN OF | |
| 07557 | 0162 | 00 | 0 | 07562 | | TQP | CH25+5 | ACC IN IMAGE | |
| 07560 | -0602 | 00 | 0 | 10044 | | ORS | REC3L+10 | MINUS SIGN OF ACC IN IMAGE | |
| 07561 | 0020 | 00 | 0 | 07563 | | TRA | CH26 | | |
| 07562 | -0602 | 00 | 0 | 10045 | | ORS | REC3L+11 | INTO IMAGE | |
| 07563 | 0534 | 00 | 1 | 10122 | CH26 | LXA | BIT+3,1 | L +14 | |
| 07564 | 0074 | 00 | 2 | 07735 | | TSX | CH22,2 | | |
| 07565 | -0500 | 00 | 0 | 10131 | | CAL | BIT+10 | BIT COL 15 | |
| 07566 | 0771 | 00 | 1 | 00014 | | ARS | 12,1 | | |
| 07567 | -0602 | 00 | 4 | 10043 | | ORS | REC3L+9,4 | | |
| 07570 | 2 | 00001 | 1 | 07564 | | TIX | CH26+1,1,1 | | |
| | | | | | | | | | |
| 07571 | 0534 | 00 | 4 | 10122 | CH30 | LXA | BIT+3,4 | PUT 3RD REC INTO | |

| | | | | | | | | | |
|-------------------------|-------|-------|---|-------|------|-----|------------|------------|---------------------------------|
| 07572 | 0534 | 00 | 1 | 10113 | | LXA | LOC+4,1 | PRINT | IMAGE |
| 07573 | -0500 | 00 | 4 | 10046 | | CAL | REC3L+12,4 | LEFT | HALF |
| 07574 | 0602 | 00 | 1 | 10233 | | SLW | PR+24,1 | | |
| 07575 | -0500 | 00 | 4 | 10062 | | CAL | REC3R+12,4 | RIGHT | HALF |
| 07576 | 0602 | 00 | 1 | 10234 | | SLW | PR+25,1 | | |
| 07577 | 2 | 00001 | 4 | 07600 | | TIX | CH30+7,4,1 | | |
| 07600 | 2 | 00002 | 1 | 07573 | | TIX | CH30+2,1,2 | | |
| | | | | | | | | | |
| 07601 | 0074 | 00 | 1 | 07741 | | TSX | WPRA,1 | PRINT | 3RD LINE |
| | | | | | | | | | |
| PUT INDICATORS IN REC | | | | | | | | | |
| 07602 | 0604 | 00 | 0 | 10203 | CH32 | STI | PR | STORE | INDICATORS |
| 07603 | 0560 | 00 | 0 | 10203 | | LDQ | PR | INDICATOR | FROM STORAGE |
| 07604 | 0534 | 00 | 1 | 10122 | | LXA | BIT+3,1 | L | +14 |
| 07605 | 0074 | 00 | 2 | 07735 | | TSX | CH22,2 | | |
| 07606 | -0500 | 00 | 0 | 10125 | | CAL | BIT+6 | | |
| 07607 | 0771 | 00 | 1 | 00015 | | ARS | 13,1 | | |
| 07610 | -0602 | 00 | 4 | 10073 | | ORS | REC4L+9,4 | INDICATORS | INTO |
| 07611 | 2 | 00001 | 1 | 07605 | | TIX | CH32+3,1,1 | PRINT | RECORD |
| | | | | | | | | | |
| PUT CONTENT OF KEYS IN | | | | | | | | | |
| 07612 | 0760 | 00 | 0 | 00004 | CH33 | ENK | | PRINT | RECORD |
| 07613 | 0534 | 00 | 1 | 10122 | | LXA | BIT+3,1 | L | +14 |
| 07614 | 0074 | 00 | 2 | 07735 | | TSX | CH22,2 | | |
| 07615 | -0500 | 00 | 0 | 10120 | | CAL | BIT+1 | | |
| 07616 | 0771 | 00 | 1 | 00020 | | ARS | 16,1 | | |
| 07617 | -0602 | 00 | 4 | 10073 | | ORS | REC4L+9,4 | KEYS | CONTENTS INTO |
| 07620 | 2 | 00001 | 1 | 07614 | | TIX | CH33+2,1,1 | PRINT | REC |
| | | | | | | | | | |
| 07621 | 0534 | 00 | 4 | 10122 | CH34 | LXA | BIT+3,4 | L+14 | PUT 4TH REC INTO PRINT IMAGE |
| 07622 | 0534 | 00 | 1 | 10113 | | LXA | LOC+4,1 | L | +30 |
| 07623 | -0500 | 00 | 4 | 10076 | | CAL | REC4L+12,4 | | |
| 07624 | 0602 | 00 | 1 | 10233 | | SLW | PR+24,1 | | |
| 07625 | 0600 | 00 | 1 | 10234 | | STZ | PR+25,1 | | |
| 07626 | 2 | 00001 | 4 | 07627 | | TIX | *+1,4,1 | | |
| 07627 | 2 | 00002 | 1 | 07623 | | TIX | CH34+2,1,2 | | |
| | | | | | | | | | |
| 07630 | 0074 | 00 | 1 | 07741 | | TSX | WPRA,1 | PRINT | CONTENTS OF INDS |
| | | | | | | | | | |
| 07631 | 0500 | 00 | 0 | 10105 | | CLA | STOR+7 | L+1 | |
| 07632 | 0601 | 00 | 0 | 07166 | | STO | KONST+3 | | |
| RESET ACC + MQ CONTENTS | | | | | | | | | |
| 07633 | 0601 | 00 | 0 | 07172 | | STO | KONST+7 | | |
| 07634 | 0500 | 00 | 0 | 10101 | | CLA | STOR+3 | OVFL | BITS |
| 07635 | 0560 | 00 | 0 | 10076 | | LDQ | STOR | ACC | CONTENTS |
| 07636 | 0763 | 00 | 0 | 00043 | | LLS | 35 | | |
| 07637 | 0560 | 00 | 0 | 10077 | | LDQ | STOR+1 | | |
| | | | | | | | | | |
| 07640 | 0534 | 00 | 2 | 10100 | CH35 | LXA | STOR+2,2 | XRB | |
| 07641 | -0534 | 00 | 1 | 10100 | | LXD | STOR+2,1 | XRA | |
| 07642 | -0534 | 00 | 4 | 10101 | | LXD | STOR+3,4 | XRC | |
| 07643 | 0140 | 00 | 0 | 07644 | | TOV | EXIT | | |
| 07644 | 0020 | 00 | 0 | 07125 | EXIT | TRA | OK-1 | | |

| | | | | | | | |
|-------|---------|----|---|-------|------|----------------|----------------------|
| 07645 | 0500 | 00 | 0 | 07172 | CH41 | CLA KONST+7 | IS THIS A REDUNDANCY |
| | | | | | | | TAPE CK PRINT-OUT |
| 07646 | 0100 | 00 | 0 | 07602 | | TZE CH32 | YES |
| | | | | | | | CLEAR RECORD IMAGE |
| 07647 | 0534 | 00 | 1 | 10113 | | LXA LOC+4,1 | LOC +30 |
| 07650 | 0600 | 00 | 1 | 10233 | | STZ PR+24,1 | |
| 07651 | 2 00001 | 1 | 1 | 07650 | | TIX *-1,1,1 | |
| 07652 | -0500 | 00 | 0 | 10077 | | CAL STOR+1 | WORD GENERATED |
| 07653 | 0602 | 00 | 0 | 10224 | CH43 | SLW PR+17 | |
| 07654 | 0760 | 00 | 0 | 00006 | | COM | |
| 07655 | 0602 | 00 | 0 | 10226 | | SLW PR+19 | PRINT IMAGE |
| 07656 | 0534 | 00 | 1 | 10122 | | LXA BIT+3,1 | L +14 |
| 07657 | 0534 | 00 | 2 | 10113 | | LXA LOC+4,2 | LOC +30 |
| 07660 | -0500 | 00 | 1 | 10166 | | CAL P92+1,1 | |
| 07661 | 0602 | 00 | 2 | 10233 | | SLW PR+24,2 | |
| 07662 | 2 00001 | 1 | 1 | 07663 | | TIX CH43+8,1,1 | |
| 07663 | 2 00002 | 2 | 2 | 07660 | | TIX CH43+5,2,2 | |
| 07664 | 0074 | 00 | 1 | 07745 | | TSX WPR,1 | PRINT WORD GENERATED |
| 07665 | 0500 | 00 | 0 | 10100 | CH45 | CLA STOR+2 | |
| 07666 | 0771 | 00 | 0 | 00022 | | ARS 18 | |
| 07667 | 0402 | 00 | 0 | 07173 | | SUB WDNO | WORD NUMBER |
| 07670 | 0765 | 00 | 0 | 00017 | | LRS 15 | |
| 07671 | 0534 | 00 | 1 | 10114 | | LXA LOC+5,1 | L+5 |
| 07672 | 0074 | 00 | 2 | 07731 | CH46 | TSX CH21,2 | |
| 07673 | -0500 | 00 | 0 | 10126 | | CAL BIT+7 | BIT COL 17 |
| 07674 | 0771 | 00 | 1 | 00005 | | ARS 5,1 | |
| 07675 | -0602 | 00 | 4 | 10177 | | ORS P93,4 | WORD NUMBER INTO |
| 07676 | 2 00001 | 1 | 1 | 07672 | | TIX CH46,1,1 | IMAGE |
| 07677 | 0534 | 00 | 2 | 10100 | CH47 | LXA STOR+2,2 | XRB |
| 07700 | 0760 | 00 | 0 | 00000 | | CLM | |
| 07701 | 0754 | 00 | 2 | 00000 | | PXA 0,2 | |
| 07702 | 0402 | 00 | 0 | 07174 | | SUB RECNO | RECORD NUMBER |
| 07703 | 0765 | 00 | 0 | 00017 | | LRS 15 | |
| 07704 | 0534 | 00 | 1 | 10114 | | LXA LOC+5,1 | L+5 |
| 07705 | 0074 | 00 | 2 | 07731 | CH48 | TSX CH21,2 | |
| 07706 | -0500 | 00 | 0 | 10125 | | CAL BIT+6 | BIT COL 5 |
| 07707 | 0771 | 00 | 1 | 00005 | | ARS 5,1 | |
| 07710 | -0602 | 00 | 4 | 10177 | | ORS P93,4 | |
| 07711 | 2 00001 | 1 | 1 | 07705 | | TIX CH48,1,1 | |
| 07712 | 0534 | 00 | 1 | 10113 | CH49 | LXA LOC+4,1 | L +30 |
| 07713 | 0600 | 00 | 1 | 10233 | | STZ PR+24,1 | |
| 07714 | 2 00001 | 1 | 1 | 07713 | | TIX *-1,1,1 | |
| 07715 | -0500 | 00 | 0 | 10076 | | CAL STOR | WORD READ |
| 07716 | 0602 | 00 | 0 | 10224 | CH50 | SLW PR+17 | |
| 07717 | 0760 | 00 | 0 | 00006 | | COM | |
| 07720 | 0602 | 00 | 0 | 10226 | | SLW PR+19 | |

| | | | | | | | |
|-------|----------------|-------|---|-------|-------|---------------------------------|---------------------------|
| 07721 | 0534 | 00 | 1 | 10122 | CH51 | LXA BIT+3,1 | L +14 |
| 07722 | 0534 | 00 | 2 | 10113 | | LXA LOC+4,2 | L +30 |
| 07723 | -0500 | 00 | 1 | 10202 | | CAL P95+1,1 | |
| 07724 | 0602 | 00 | 2 | 10233 | | SLW PR+24,2 | |
| 07725 | 2 | 00001 | 1 | 07726 | | TIX CH51+5,1,1 | |
| 07726 | 2 | 00002 | 2 | 07723 | | TIX CH51+2,2,2 | |
| 07727 | 0074 | 00 | 1 | 07745 | | TSX WPR,1 | PRINT WORD WRITTEN |
| 07730 | 0020 | 00 | 0 | 07602 | | TRA CH32 | PRINT INDICATORS AND KEYS |
| 07731 | 0760 | 00 | 0 | 00000 | CH21 | CLM | |
| 07732 | 0763 | 00 | 0 | 00003 | | LLS 3 | |
| 07733 | 0734 | 00 | 4 | 00000 | | PAX 0,4 | |
| 07734 | 0020 | 00 | 2 | 00001 | | TRA 1,2 | |
| 07735 | 0760 | 00 | 0 | 00000 | CH22 | CLM | |
| 07736 | -0763 | 00 | 0 | 00003 | | LGL 3 | |
| 07737 | 0734 | 00 | 4 | 00000 | | PAX 0,4 | |
| 07740 | 0020 | 00 | 2 | 00001 | | TRA 1,2 | |
| 07741 | 0766 | 00 | 0 | 01361 | WPRA | WPRA | |
| 07742 | 0540 | 00 | 0 | 10202 | | RCHA CTWD | |
| 07743 | 0060 | 00 | 0 | 07743 | | TCOA * | |
| 07744 | 0020 | 00 | 1 | 00001 | | TRA 1,1 | EXIT |
| 07745 | 0766 | 00 | 0 | 01361 | WPR | WPRA | |
| 07746 | 0760 | 00 | 0 | 01364 | | SPRA 4 | |
| 07747 | 0020 | 00 | 0 | 07742 | | TRA WPRA+1 | |
| 07750 | 0601 | 00 | 0 | 10112 | TRAP | STO LOC+3 | |
| 07751 | 0020 | 00 | 0 | 07317 | | TRA CHK7A | |
| 07752 | +0000000000320 | | | | REC1L | OCT 320,10001000,1000000 | |
| 07753 | +000010001000 | | | | | | |
| 07754 | +000001000000 | | | | | | |
| 07755 | +004002000042 | | | | | OCT 4002000042,200000400400 | |
| 07756 | +200000400400 | | | | | | |
| 07757 | +000000000000 | | | | | OCT 0,452010001005 | |
| 07760 | -052010001005 | | | | | | |
| 07761 | +100000000000 | | | | | OCT 100000000000,0,540010001000 | |
| 07762 | +000000000000 | | | | | | |
| 07763 | -140010001000 | | | | | | |
| 07764 | +014003400366 | | | | | OCT 14003400366,202000000401 | |
| 07765 | +202000000401 | | | | | | |
| 07766 | +000000000000 | | | | REC1R | OCT 0,4000001000,0,100000200 | |
| 07767 | +004000001000 | | | | | | |
| 07770 | +000000000000 | | | | | | |
| 07771 | +000100000200 | | | | | | |
| 07772 | +000000000000 | | | | | OCT 0,0,4240001000,400,0 | |
| 07773 | +000000000000 | | | | | | |
| 07774 | +004240001000 | | | | | | |
| 07775 | +000000000400 | | | | | | |
| 07776 | +000000000000 | | | | | | |
| 07777 | +005000001600 | | | | | OCT 5000001600,000300000000 | |
| 10000 | +000300000000 | | | | | | |

| | | | |
|-------|---------------|-------|--------------------------------|
| 10001 | +000040000000 | | OCT 40000000 |
| 10002 | +200000000100 | REC2L | OCT 200000000100,440001000 |
| 10003 | +000440001000 | | |
| 10004 | +000000000200 | | OCT 200,0,40000000000 |
| 10005 | +000000000000 | | |
| 10006 | +040000000000 | | |
| 10007 | +000100000000 | | OCT 100000000 |
| 10010 | -100400001000 | | OCT -500400001000,0,40 |
| 10011 | +000000000000 | | |
| 10012 | +000000000040 | | |
| 10013 | +100400001200 | | OCT 100400001200 |
| 10014 | -000140000100 | | OCT -400140000100 |
| 10015 | +240000000040 | | OCT 240000000040 |
| 10016 | +020004000404 | REC2R | OCT 20004000404 |
| 10017 | +200040010000 | | OCT 200040010000 |
| 10020 | +040010000110 | | OCT 40010000110,0,0,0 |
| 10021 | +000000000000 | | |
| 10022 | +000000000000 | | |
| 10023 | +000000000000 | | |
| 10024 | +200042011020 | | OCT 200042011020 |
| 10025 | +010000000000 | | OCT 10000000000,200 |
| 10026 | +000000000200 | | |
| 10027 | +240050011020 | | OCT 240050011020 |
| 10030 | +020004000504 | | OCT 20004000504,10002000210 |
| 10031 | +010002000210 | | |
| 10032 | +000000000100 | REC3L | OCT 100,14420001000 |
| 10033 | +014420001000 | | |
| 10034 | +000200000000 | | OCT 200000000,0,40,200 |
| 10035 | +000000000000 | | |
| 10036 | +000000000040 | | |
| 10037 | +000000000200 | | |
| 10040 | +310420001010 | | OCT 310420001010,4,-0 |
| 10041 | +000000000004 | | |
| 10042 | -000000000000 | | |
| 10043 | +010420001040 | | OCT 10420001040,4200000004 |
| 10044 | +004200000004 | | |
| 10045 | -300000000310 | | OCT -700000000310 |
| 10046 | +000000000000 | REC3R | OCT 0,-400042400401,1000000 |
| 10047 | -000042400401 | | |
| 10050 | +000001000000 | | |
| 10051 | +005004050020 | | OCT 5004050020,2000020040,100 |
| 10052 | +002000020040 | | |
| 10053 | +000000000100 | | |
| 10054 | -060442404411 | | OCT -460442404411,0 |
| 10055 | +000000000000 | | |
| 10056 | +100000000000 | | OCT 100000000000,-402040020501 |
| 10057 | -002040020501 | | |
| 10060 | +004401244050 | | OCT 4401244050,161006410020 |
| 10061 | +161006410020 | | |
| 10062 | -000000000000 | REC4L | OCT -0,1040000,0,0 |
| 10063 | +000001040000 | | |
| 10064 | +000000000000 | | |
| 10065 | +000000000000 | | |
| 10066 | +200000100000 | | OCT 200000100000,100000000000 |
| 10067 | +100000000000 | | |

| | | | | |
|--|-----------------|------|-----|--------------------------------|
| 10070 | +000001000000 | | OCT | 1000000,40000220000,0 |
| 10071 | +040000220000 | | | |
| 10072 | +000000000000 | | | |
| 10073 | +040001060000 | | OCT | 40001060000,200000200000 |
| 10074 | +200000200000 | | | |
| 10075 | -100000100000 | | OCT | -500000100000 |
| 10076 | +000000000000 | STOR | OCT | 0 ACC CONTENTS |
| 10077 | +000000000000 | | OCT | 0 MQ CONTENTS |
| 10100 | +000000000000 | | OCT | 0 XRA AND XRB |
| 10101 | +000000000000 | | OCT | 0 XRC, OVRL TRGS, TAPE CK |
| 10102 | +000000000000 | | OCT | 0 PSE + MSE VALUES |
| 10103 | +000000100000 | | OCT | 100000 |
| 10104 | +0000000000006 | | OCT | +6 |
| 10105 | +0000000000001 | | OCT | +1 |
| 10106 | +0000000000004 | | OCT | +4 |
| 10107 | +0000000000000 | LOC | OCT | 0 TEST LOC + ERROR ADDR |
| 10110 | +0000000000000 | | OCT | 0 DECREMENT CONTAINS 2,5 |
| * COMPLEMENT OF LAST ROUTINE PREFORMED | | | | |
| 10111 | +0000000000000 | | OCT | 0 +0 |
| 10112 | +0000000000000 | | OCT | 0 TRAP ROUTINE INDICATOR |
| 10113 | +0000000000030 | | OCT | +30 |
| 10114 | +0000000000005 | | OCT | 5 |
| 10115 | -0000000000000 | | OCT | -0 |
| 10116 | +0000000000007 | | OCT | 7 |
| 10117 | +0004000000000 | BIT | OCT | 400000000 BIT COL 10 |
| 10120 | +0000001000000 | | OCT | 100000 BIT COL 21 |
| 10121 | +00000000000060 | | OCT | 60 |
| 10122 | +00000000000014 | | OCT | 14 |
| 10123 | +0002000000000 | | OCT | 200000000 BIT COL 11 |
| 10124 | +00000000000010 | | OCT | 10 BIT COL 33 |
| 10125 | +0200000000000 | | OCT | 020000000000 BIT COL 5 |
| 10126 | +0000002000000 | | OCT | 2000000 BIT COL 17 |
| 10127 | +0000000010000 | | OCT | 1000 BIT COL 27 |
| 10130 | +00000000000040 | | OCT | 40 BIT COL 31 |
| 10131 | +0000100000000 | | OCT | 1000000 BIT COL 15 |
| 10132 | +00000000000017 | | OCT | 17 |
| 10133 | +0100000000000 | | OCT | 010000000000 |
| 10134 | +0020000000000 | BIT2 | OCT | 002000000000 BIT COL 8 |
| 10135 | +0000004000000 | | OCT | 400000 BIT COL 19 |
| 10136 | +0000010000000 | | OCT | 1000000 |
| 10137 | +1000200000000 | | OCT | 100020000000 |
| 10140 | -377017601777 | MASK | OCT | 777017601777 TEST LOC ETC |
| 10141 | -007760001700 | | OCT | 407760001700 |
| 10142 | -360760001760 | | OCT | -760760001760 MQ ETC |
| 10143 | +374077017776 | | OCT | 374077017776 |
| MAKE FOR REC3 | | | | |
| 10144 | -356720001776 | | OCT | -756720001776 ACC AND TRIGGER |
| 10145 | -377677776775 | | OCT | -777677776775 |
| 10146 | -341777777777 | | OCT | -741777777777 I/O ETC |
| 10147 | -340774077777 | | OCT | -740774077777 |
| 10150 | -360001760000 | | OCT | -760001760000 MASK FOR 4TH REC |
| 10151 | -377773567356 | | OCT | -777773567356 MASK |
| 10152 | +000003204020 | | OCT | 000003204020 |
| 10153 | +001000100000 | | OCT | 1000100000,20000400 |
| 10154 | +000020000400 | | | |

00000

END