9A01A

EC 298711

# DIAGNOSTIC TEST FOR SPECIAL REAL TIME CONTROLS

A. UNIT TESTED

1. PURPOSE OF TEST -- TO CHECK THE 709 SPECIAL REAL TIME FEATURES TO BE USED WITH THE AZUSA SYSTEM.

B. METHOD OF TEST

1. LOCATION 30-72. CHECK THAT THE 16 DRUM SELECTS ON PAGE 7.04 ARE WORKING PROPERLY.

   THESE LINES ARE BROUGHT UP BY THE CORRESPONDING DRUM SELECT INSTRUCTIONS AND DOWN BY A SPECIAL DISCONNECT INSTRUCTION. THESE LINES MAY BESCOPED BY PUTTING SENSE SWITCH 1 DOWN AND SYNCING ON THE READ DRUM 1 LINE WHILE CHECKING THE OTHER IN ORDER. THE PANEL PINS FOR EACH OF THESE OUTPUTS MAY BE FOUND IN THE PROGRAM COMMENTS.

2. LOCATIONS 73-121.TEST THAT THE CPY AND LDA INSTRUCTIONS TURN ON THE I-O CHECK LIGHT AND END OPERATION.

   THIS CAN BE SEEN ON PAGE 5.03.01 SINCE THE TOP LEG OF CKT. 1146 D IS TIED TO PLUS 10V AND THE MIDDLE LEG OF 1146 G IS ALWAYS UP. UNDER THESE CONDITIONS CPY AND LDA WILL END OPERATION EVEN THROUGH THE REST OF THEIR CORRESPONDING CIRCUITRY IS BLOCKED.

3. LOCATION 122-137,CHECK THAT THE CRT TRIGGERS ON 5.01.08 ARE WORKING PROPERLY.

   THESE TWO TRIGGERS MAY BE TESTED BY SCOPING WITH SWITCH 2 DOWN. IF SWT 2 IS UP THE PROGRAM WILL MAKE ONE PASS AND CONTINUE TO THE NEXT SECTION. THE TRIGGERS ARE TURNED ON BY THE CORRESPONDING CRT SELECTS AND OFF BY RESET DRUM INTERLOCK WHICH IS CONDITIONED BY THE DIRECT DATA DISCOUNT INSTRUCTION. THE PROGRAM ALSO CHECKS THAT THESE TRIGGERS MAY BE ON AT THE SAME TIME. THE PANEL PINS FOR SCOPING MAY BE FOUND IN THE PROGRAM COMMENTS.

4. LOCATIONS 140-155.TEST THAT IF EITHER OR BOTH CRT TRIGGER ARE SELECTED A DRUM READ OR WRITE SELECT MAY BE GIVEN WITHOUT HANGUP.

   THIS IS TRUE SINCE THE DRUM READ OR WRITE SELECTS ARE NOT DEPENDENT ON THE CRT SELECTS TO END OPERATION. PAGE 5.03.01. HOWEVER THE REVERSE DOES NOT HOLD.

5. LOCATION 156-217.WITH SWITCH 3 DOWN CHECK THAT WHEN MORE THAN ONE DRUM SELECT IS GIVEN WITHOUT A DISCONNECT THE MACHINE WILL HANGUP.

   AS CAN BE SEEN ON PAGE 5.02 THE SECOND DRUM SELECT WILL NOT TURN ON THE READ-WRITE TRIGGER AND END OPERATION. WHEN THE MACHINE FAILS TO END OPERATION IT IS HUNG UP ALTHOUGH THE INSTRUCTION COUNTER HAS BEEN STEPED TO THE NEXT ADDRESS. THE MACHINE MUST THEN BE RESET AND WHEN THE START BUTTON IS DEPRESSED IT WILL CONTINUE IN THE PROGRAM SINCE A TRANSFER HAS PERVIOUSLY BEEN STORED IN 00000.
   WHEN SWITCH 3 IS UP THE PROGRAM WILL BYPASS THIS SECTION.

6. LOCATION 220-233.WITH SWITCH 3 DOWN CHECK THAT THE NOP INSTRUCTION DOES NOT GIVE A DIRECT DATA DISCONNECT.

   IT SHOULD BE BLOCKED FROM DOING SO BY CKT. 1039G ON PAGE 5.01.08.
   RESET AND PRESS START ON HANGUP-SEE =5 ABOVE.
   WHEN SWITCH 3 IS UP THE PROGRAM WILL BYPASS THIS SECTION.

7. LOCATION 234-272.WITH SWITCH 3 DOWN CHECK THAT IF EITHER DRUM READ OR WRITE SELECT TRIGGERS ARE ON, EITHER CRT INSTRUCTION WILL HANGUP THE MACHINE.

   THIS IS CAUSED BY THE CRT WRITE SELECT INSTRUCTION FAILING TO END OPERATION BECAUSE CKT. 1039 D ON PAGE 5.01.08 CANNOT BE CONDITIONED.
   RESET + PRESS START ON HANGUP SEE =5 ABOVE.
   WHEN SWITCH 3 IS UP THE PROGRAM WILL BYPASS THIS SECTION.

8. LOCATION 273-304.TEST THAT A CHANNEL CAN BE SELECTED AND PUT INTO OPERATION AFTER A DRUM HAS BEEN SELECTED.

   THIS IS POSSIBLE BECAUSE THE LINE-NOT DRUM READ OR WRITE SELECT-IS NOT BROUGHT INTO THE CKTS. 1036R + 1036S ON 5.01.07.
   A ONE WORD RECORD IS WRITTEN ON TAPE 1-CHANNEL A WHEN DRUM 1 HAS BEEN WRITE SELECTED.
   THE SAME WORD IS ALSO WRITTEN WITH A READ DRUM SELECT LINE UP.

9. LOCATION 305-320.WITH SWITCH 4 DOWN CHECK THAT A DRUM MAY BE SELECTED WITH A CHANNEL IN USE.

   WITH THIS SWITCH DOWN THERE IS A HTR AT LOCATION 307. AT TIS POINT TAPE UNIT 1 CHANNEL A MUST BE TAKEN OUT OF READY STATUS IN ORDER TO KEEP CHANNEL A SELECTED .
   WHEN THE START BUTTON IS DEPRESSED THE PROGRAM WILL LOOP BETWEEN THE DRUM 1 READ AND WRITE SELECTS AND CAN BE SEEN BY SCOPING THE INDICATED POINTS. WITH SWITCH 4 BACK UP THERE IS A HTR AT LOCATION 320 TO ALLOW TAPE UNIT 1-CHANNEL A TO BE PUT BACK INTO READY STATUS.
   IF SWITCH 4 IS NEVER DEPRESSED THE PROGRAM WILL BYPASS THIS SECTION.

10. LOCATIONS 321-341.WITH SWITCH 5 DOWN CHECK INTERRUPT AND TRAP TO 00004.

    WHEN DOWN THERE IS A HTR AT LOCATION 323 WHICH ALLOWS A JUMPER TO BE INSTALLED FROM MF4-AD TO MF4-37J. THIS ALLOWS THE UNIT ADDRESS 1 LINE ON PAGE 5.01.02 TO CONDITION INTERRUPT DEMAND ON 2.07.75.
    CHECKING INTERRUPT WITH A DRUM SELECTED, WE SHOULD NOT BE ABLE TO TRAP. IF WE DO SO THE MACHINE WILL HALT AT 00004.
    CHECKING INTERRUPT WHEN A DRUM IS NOT SELECTED SHOULD TRAP TO 00004 AND TRANSFER BACK TO THE PROGRAM. IF WE FAIL TO TRAP THE MACHINE WILL HALT AT LOCATION 334. AS LONG AS SWT. 5 IS DOWN WE WILL LOOP IN THIS AREA AND THE INTERRUP LINE MY BE SCOPED AT PANEL PIN MF4--R37-6.
    WHEN SWT 5 IS BACK UP THE MACHINE WILL HALT AT 341 AND THE JUMPER MUST BE REMOVED.

11. LOCATIONS 342-351.IF SWITCH 6 IS DOWN THE PROGRAM WILL REPEAT. WHEN IT IS UP THE NEXT PROGRAM WILL BE READ IN FROM THE CARD READER.

12. LOCATIONS 352-370.CONSTANTS.

C. AREA OF MACHINE REQUIRED.

1. MF, CF, CR, DSU, TU1
2. STORAGE LOCATIONS 00000-00370

D. PROGRAM CONTROL

| | | |
|---|---|---|
| 1.DECK | 00 | 9LD01A LOW END LOADER |
| | 01-11 | 9A01A SPECIAL FEATURE PROGRAM |
| | 12 | TRANSFER CARD-TRA TO 00030 |
| | 13-14 | 2 BLANK CARDS |

2. SENSE SWITCH CONTROL

A. SWITCH 1 UP - MAKES ONE PASS + CONTINUES TO NEXT ROUTINE.
SWITCH 1 DOWN - LOOPS THE 16 DRUM SELECTS-CHECK BY SCOPING -7.04

B. SWITCH 2 UP - MAKES ONE PASS + CONTINUES TO NEXT ROUTINE.
SWITCH 2 DOWN - LOOPS THE CRT TRIGGERS-CHECK BY SCOPING-5.01.08

C. SWITCH 3 UP - BYPASSES SECTION
SWITCH 3 DOWN - CHECK HANGUP WITH MULTIPLE DRUM SELECTS.
CHECK THAT NOP DOES NOT GIVE A DIRECT
DATA DISCONNECT.
CHECK THAT A CRT INSTRUCTION WILL HANGUP
IF DRUM IS SELECTED.

D. SWITCH 4 UP - BYPASSES SECTION
SWITCH 4 DOWN - TEST THAT A DRUM MAY BE SELECTED WITH A CHANNEL
IN USE.

E. SWITCH 5 UP - BYPASSES SECTION
SWITCH 5 DOWN - CHECK INTERRUPT AFTER A JUMPER HAS BEEN INSTALLED.

F. SWITCH 6 UP - BRINGS IN NEXT PROGRAM FROM CARD READER
SWITCH 6 DOWN - REPEATS PROGRAM

E. NORMAL STOPS

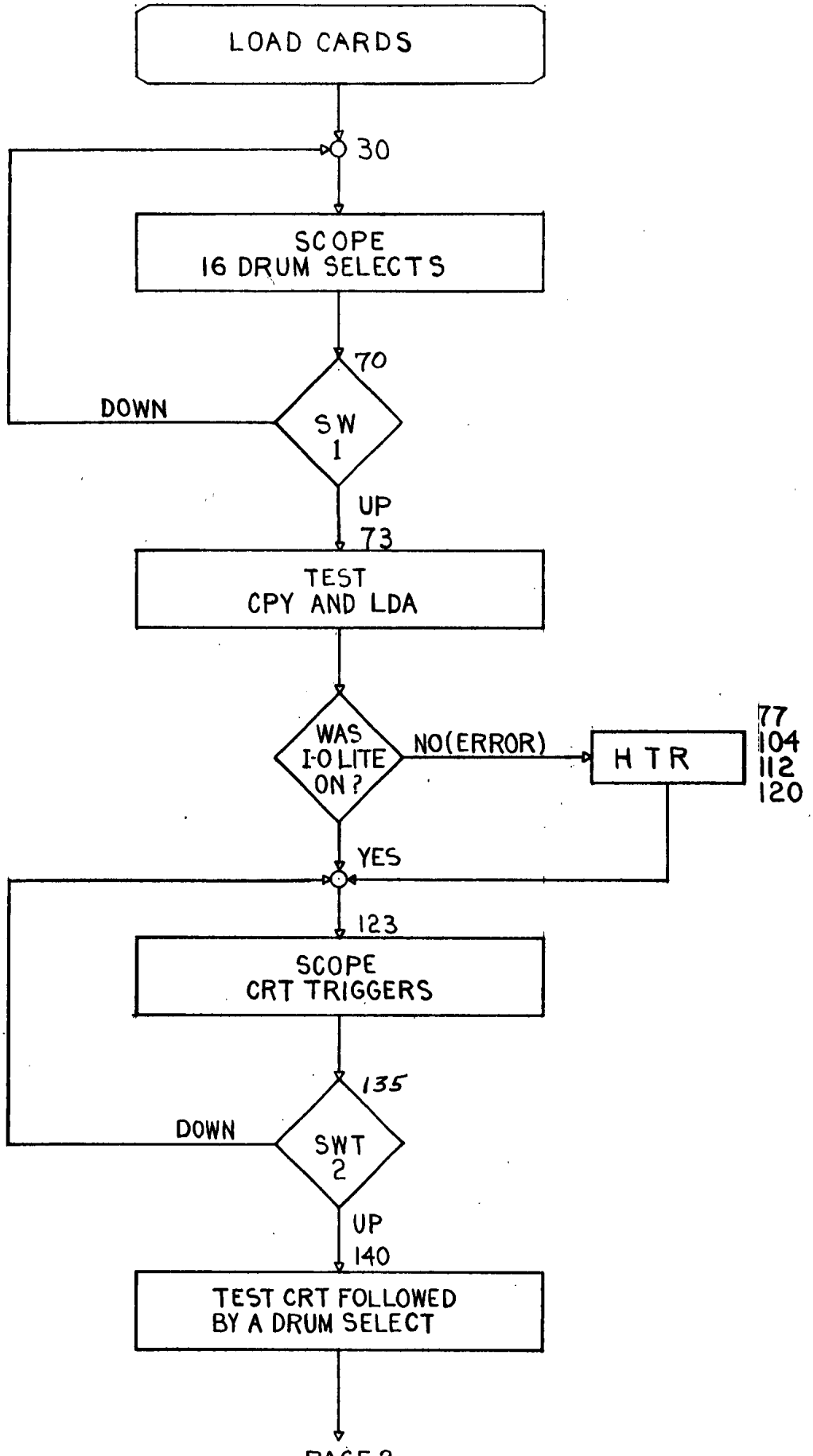
| | |
|---|---|
| 1. SWITCH 3 DOWN | 165,175,205,215,231- RESET + PRESS START<br>240,250,260,270-RESET + PRESS START |
| 2. SWITCH 4 DOWN | 307-TAKE TAPE OUT OF READ STATUS + START |
| 3. SWITCH 4 DOWN THEN UP | 320-PUT TAPE BACK INTO READY STATUS + START |
| 4. SWITCH 5 DOWN | 323-INSTALL JUMPER AND PRESS START |
| 5. SWITCH 6 DOWN THEN UP | 341-REMOVE JUMPER AND PRESS START |

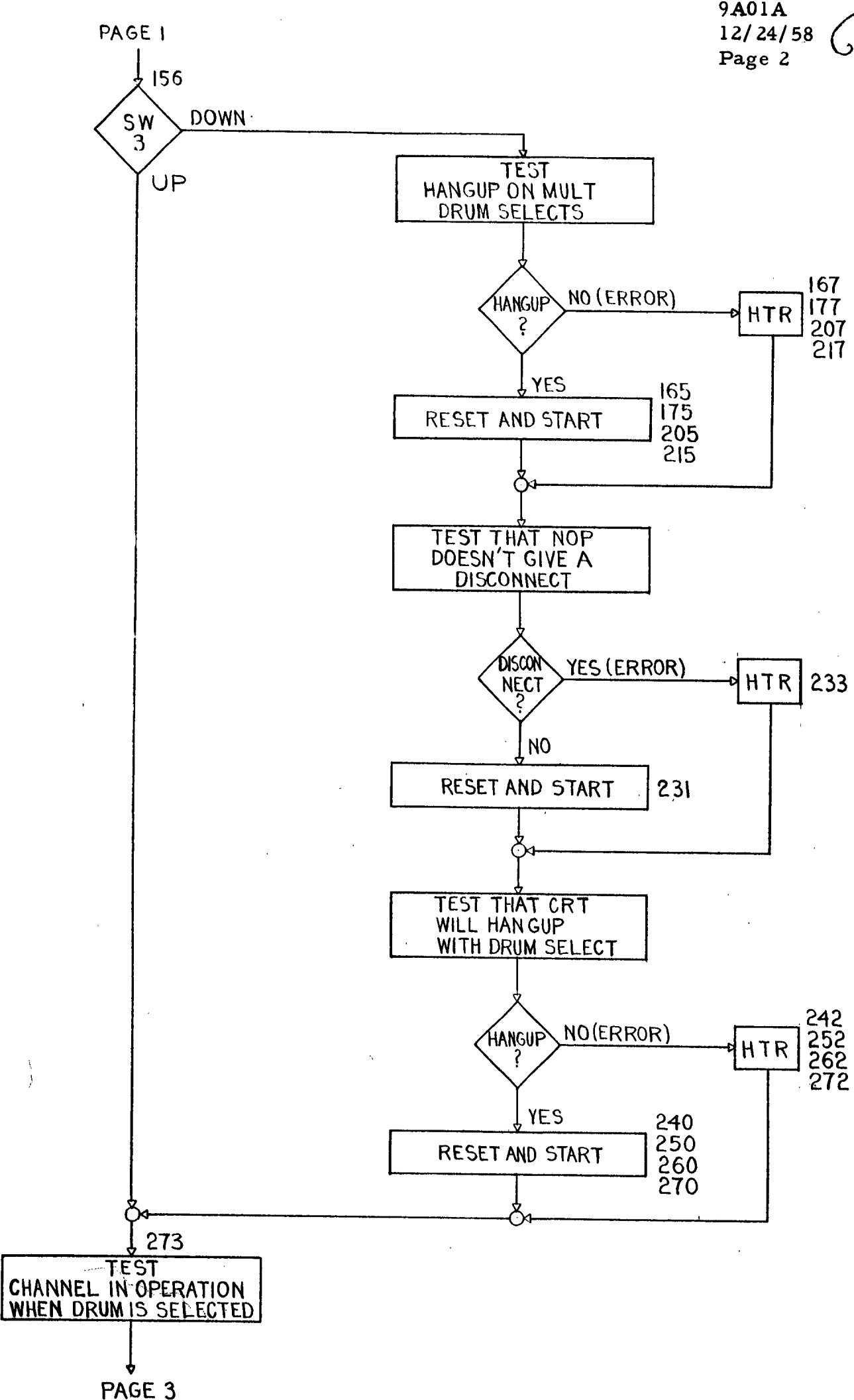
F. ERROR STOPS

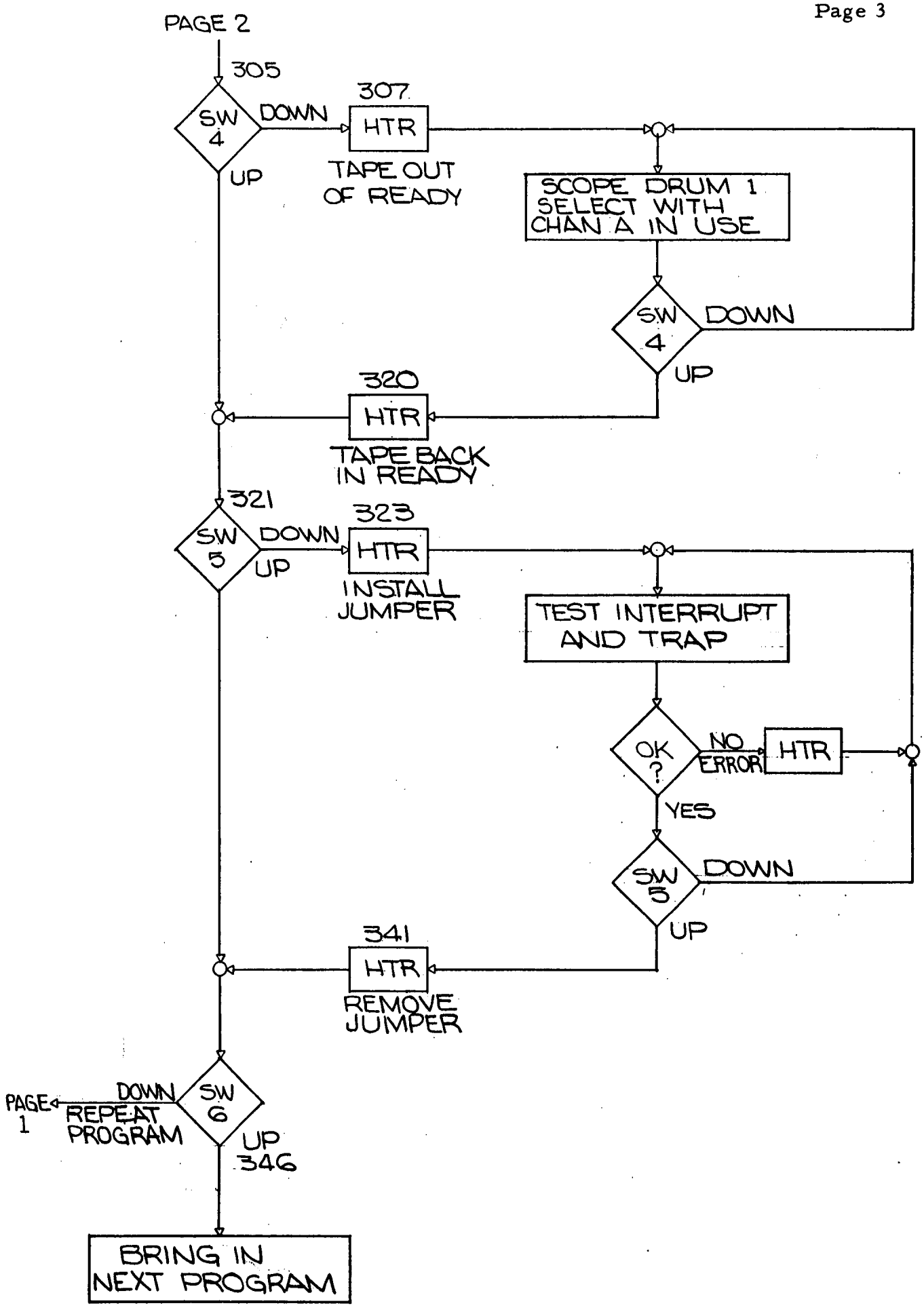
1. ALL STOPS ARE HTR AND MAY BE FOUND IN THE
PROGRAM OR THE FLOW CHARTS FOR EACH SECTION.
2. ERRORS MAY ALSO BE OBSERVED BY SCOPING.

File Attachments: Source Cards Deck

5


LOAD CARDS
30
SCOPE
16 DRUM SELECTS
70
SW
1
DOWN
UP
73
TEST
CPY AND LDA
WAS
I-O LITE
ON?
NO(ERROR)
H T R
77
104
112
120
YES
123
SCOPE
CRT TRIGGERS
135
SWT
2
DOWN
UP
140
TEST CRT FOLLOWED
BY A DRUM SELECT
PAGE 2


PAGE 1
156
SW 3
DOWN
UP
TEST HANGUP ON MULT DRUM SELECTS
HANGUP ?
NO (ERROR)
HTR
167
177
207
217
YES
RESET AND START
165
175
205
215
TEST THAT NOP DOESN'T GIVE A DISCONNECT
DISCON NECT ?
YES (ERROR)
HTR
233
NO
RESET AND START
231
TEST THAT CRT WILL HANGUP WITH DRUM SELECT
HANGUP ?
NO (ERROR)
HTR
242
252
262
272
YES
RESET AND START
240
250
260
270
273
TEST CHANNEL IN OPERATION WHEN DRUM IS SELECTED
PAGE 3


PAGE 2
305
SW 4
DOWN
307
HTR
TAPE OUT OF READY
UP
SCOPE DRUM 1 SELECT WITH CHAN A IN USE
SW 4
DOWN
UP
320
HTR
TAPE BACK IN READY
321
SW 5
DOWN
323
HTR
INSTALL JUMPER
UP
TEST INTERRUPT AND TRAP
OK ?
NO ERROR
HTR
YES
SW 5
DOWN
UP
341
HTR
REMOVE JUMPER
PAGE 1
DOWN
REPEAT PROGRAM
SW 6
UP
346
BRING IN NEXT PROGRAM

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*                    9A01A
*DIAGNOSTIC TEST FOR SPECIAL READ TIME CONTROLS


                00030        ORG 24

*CHECK THAT THE 16 DRUM SELECTS ON PAGE 7.04 ARE WORKING PROPERLY

*WITH SWT 1 DOWN-SYNC ON READ SELECT 1 N08-4 AND SCOPE
*EACH LINE IN ORDER AT THE INDICATED PANEL PINS

*OCT-7610000000 IS A DIRECT DATA DISCONNECT INSTRUCTION-5.01.08-
*WHICH BRINGS UP RESET DRUM INTERLOCK-5.09.02-AT A0-D4

*THIS LINE COMMING UP TURNS OFF THE DRUM READ AND WRITE SELECT
*TRIGGER ON 5.01.03, THE TWO CRT SELECT TRIGGERS ON 5.01.08, AND
*THE UNIT SELECT TRIGGERS ON 7.01.


00030  0762 00 0 00301  A1     RDR 1          N08-4
00031 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00032  0766 00 0 00301         WDR 1          N08-8
00033 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00034  0762 00 0 00302         RDR 2          P08-2
00035 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00036  0766 00 0 00302         WDR 2          P08-6
00037 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00040  0762 00 0 00303         RDR 3          Q08-3
00041 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00042  0766 00 0 00303         WDR 3          Q08-7
00043 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00044  0762 00 0 00304         RDR 4          Q08-4
00045 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00046  0766 00 0 00304         WDR 4          R08-5
00047 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00050  0762 00 0 00305         RDR 5          N10-4
00051 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00052  0766 00 0 00305         WDR 5          N10-8
00053 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00054  0762 00 0 00306         RDR 6          P10-2
00055 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00056  0766 00 0 00306         WDR 6          P10-6
00057 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00060  0762 00 0 00307         RDR 7          Q10-3
00061 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00062  0766 00 0 00307         WDR 7          Q10-7
00063 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00064  0762 00 0 00310         RDR 8          Q10-4
00065 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00066  0766 00 0 00310         WDR 8          R10-5
00067 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT


00070  0760 00 0 00161         SWT 1          LOOP THE 16 DRUM SELECTS
00071  0020 00 0 00073         TRA *+2        IF DOWN
00072  0020 00 0 00030         TRA A1
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*CHECK THAT THE CPY AND LDA INSTRUCTIONS TURN ON THE
*I-O CHECK LIGHT AND END OPERATION PAGE 5.03.01

*TOP LEG OF 1146-D AND MIDDLE LEG OF 1146-G ARE ALWAYS UP
*SO THAT WHENEVER CPY OR LDA WHICH IS PRI. OPN. 46 ARE GIVEN
*THE LINE-I/O CHECK END OPN. CNTL.-COMES UP.


00073 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00074  0700 00 0 00353         CPY K1          OCT 0
00075  0760 00 0 00005         IOT
00076  0020 00 0 00100         TRA *+2
00077  0000 00 0 00100         HTR *+1         FAILED TO I-O CHECK ON CPY
00100 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT

00101  0460 00 0 00355         LDA X           OCT 77777777777
00102  0760 00 0 00005         IOT
00103  0020 00 0 00105         TRA *+2
00104  0000 00 0 00105         HTR *+1         FAILED TO I-O CHECK ON LDA
00105 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT

00106  0766 00 0 00301         WDR 1
00107  0700 00 0 00353         CPY K1          OCT 0
00110  0760 00 0 00005         IOT
00111  0020 00 0 00113         TRA *+2
00112  0000 00 0 00113         HTR *+1         FAILED TO I-O CHECK ON
                                               CPY AFTER WRITE SELECT

00113 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00114  0762 00 0 00301         RDR 1
00115  0460 00 0 00355         LDA X           OCT 77777777777
00116  0760 00 0 00005         IOT
00117  0020 00 0 00121         TRA *+2
00120  0000 00 0 00121         HTR *+1         FAILED TO I-O CHECK ON
                                               LDA AFTER READ SELECT
00121 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
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*WITH SWT 2 DOWN CHECK CRT TRIGGERS BY SCOPING-5.01.08

*EACH TRIGGER IS TURNED ON BY ITS OWN CRT WRITE SELECT AND BOTH ARE
*TURNED OFF BY-RESET DRUM INTERLOCK-WHICH IS CONDITIONED BY THE
*-DIRECT DATA DISCONNECT INSTRUCTION-5.09.02

00122 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00123  0766 00 0 00030  C     WTV            Q28-4
00124 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00125  0766 00 0 00031        WTV 1          Q28-6
00126 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00127  0766 00 0 00030        WTV
00130  0766 00 0 00031        WTV 1
00131 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00132  0766 00 0 00031        WTV 1
00133  0766 00 0 00030        WTV
00134 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT


00135  0760 00 0 00162        SWT 2
00136  0020 00 0 00140        TRA *+2
00137  0020 00 0 00123        TRA C


*CHECK THAT IF EITHER OR BOTH CRT TRIGGERS ARE SLECTED A
*DRUM READ OR WRITE SELECT MAY BE GIVEN WITHOUT HANGUP.

00140  0766 00 0 00030        WTV
00141  0766 00 0 00301        WDR 1
00142 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00143  0766 00 0 00031        WTV 1
00144  0762 00 0 00301        RDR 1
00145 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00146  0766 00 0 00030        WTV
00147  0766 00 0 00031        WTV 1
00150  0766 00 0 00301        WDR 1
00151 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
00152  0766 00 0 00030        WTV
00153  0766 00 0 00031        WTV 1
00154  0762 00 0 00301        RDR 1
00155 -076100000000           OCT -76100000000 DIRECT DATA DISCONNECT
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*WITH SWT 3 DOWN CHECK THAT WHEN MORE THAN ONE DRUM SELECT
*IS GIVEN WITHOUT A DISCONNECT THE MACHINE WILL HANGUP.

*THIS IS CAUSED BY THE SECOND DRUM SELECT FAILING TO END OPERATION
*SINCE CKT. 1197-8 IS BLOCKED BY-NOT DRUM READ OR WRITE SELECT-5.02


00156  0760 00 0 00163         SWT 3
00157  0020 00 0 00273         TRA CHA



00160 -076100000000            OCT -76100000000
00161  0500 00 0 00356         CLA B          TRA B1
00162  0601 00 0 00000         STO 0
00163  0766 00 0 00301         WDR 1
00164  0766 00 0 00302         WDR 2
00165  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00166  0761 00 0 00000         NOP
00167  0000 00 0 00170         HTR *+1        FAILED TO HANGUP

00170 -076100000000     B1     OCT -76100000000
00171  0500 00 0 00357         CLA B2         TRA B3
00172  0601 00 0 00000         STO 0
00173  0766 00 0 00301         WDR 1
00174  0762 00 0 00301         RDR 1
00175  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00176  0761 00 0 00000         NOP
00177  0000 00 0 00200         HTR *+1        FAILED TO HANGUP

00200 -076100000000     B3     OCT -76100000000
00201  0500 00 0 00360         CLA B4         TRA B5
00202  0601 00 0 00000         STO 0
00203  0762 00 0 00301         RDR 1
00204  0762 00 0 00302         RDR 2
00205  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00206  0761 00 0 00000         NOP
00207  0000 00 0 00210         HTR *+1        FAILED TO HANGUP

00210 -076100000000     B5     OCT -76100000000
00211  0500 00 0 00361         CLA B6         TRA B7
00212  0601 00 0 00000         STO 0
00213  0762 00 0 00301         RDR 1
00214  0766 00 0 00301         WDR 1
00215  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00216  0761 00 0 00000         NOP
00217  0000 00 0 00220         HTR *+1        FAILED TO HANGUP
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*CHECK THAT THE NOP INSTRUCTION DOES NOT GIVE A DIRECT DATA
*DISCONNECT-CKT 1039-G PAGE 5.01.08

00220  0761 00 0 00000         NOP
00221 -076100000000     B7     OCT -76100000000
00222  0500 00 0 00362         CLA B8         TRA B9
00223  0601 00 0 00000         STO 0
00224  0766 00 0 00301         WDR 1
00225  0761 00 0 00000         NOP
00226  0761 00 0 00000         NOP
00227  0761 00 0 00000         NOP
00230  0762 00 0 00301         RDR 1
00231  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00232  0761 00 0 00000         NOP
00233  0000 00 0 00234         HTR *+1        FAILED TO HANGUP

*ALSO WITH SWT 3 DOWN CHECK THAT IF EITHER DRUM READ OR WRITE
*SELECT TRIGGERS ARE ON EITHER CRT INSTRUCTION WILL HANGUP THE MACHINE.

*THIS IS CAUSED BY THE CRT SELECT INSTRUCTION FAILING TO END OPERATION
*WITH A DRUM SELECTED, CKT. 1039-D-PAGE 5.01.08

00234  0500 00 0 00363  B9     CLA C1         TRA C3
00235  0601 00 0 00000         STO 0
00236  0766 00 0 00301         WDR 1
00237  0766 00 0 00030         WTV
00240  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00241  0761 00 0 00000         NOP
00242  0000 00 0 00243         HTR *+1        FAILED TO HANGUP

00243 -076100000000     C2     OCT -76100000000
00244  0500 00 0 00364         CLA C3         TRA C4
00245  0601 00 0 00000         STO 0
00246  0762 00 0 00301         RDR 1
00247  0766 00 0 00030         WTV
00250  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00251  0761 00 0 00000         NOP
00252  0000 00 0 00253         HTR *+1        FAILED TO HANGUP

00253 -076100000000     C4     OCT -76100000000
00254  0500 00 0 00365         CLA C5         TRA C6
00255  0601 00 0 00000         STO 0
00256  0762 00 0 00301         RDR 1
00257  0766 00 0 00031         WTV 1
00260  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00261  0761 00 0 00000         NOP
00262  0000 00 0 00263         HTR *+1        FAILED TO HANGUP

00263 -076100000000     C6     OCT -76100000000
00264  0500 00 0 00366         CLA C7         TRA A6
00265  0601 00 0 00000         STO 0
00266  0762 00 0 00301         RDR 1
00267  0766 00 0 00031         WTV 1
00270  0761 00 0 00000         NOP            RESET AND START ON HANGUP
00271  0761 00 0 00000         NOP
00272  0000 00 0 00273         HTR *+1        FAILED TO HANGUP
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*CHECK THAT A CHANNEL CAN BE PUT INTO OPERATION AFTER A DRUM
*HAS BEEN SELECTED.

*THIS IS POSSIBLE BECAUSE THE LINE-NOT DRUM READ OR WRITE SELECT-
*IS NOT BROUGHT INTO CKTS. 1036 R AND 1036 S ON PAGE 5.01.07

00273  0766 00 0 00301  CHA    WDR 1
00274  0766 00 0 01221         WTBA 1
00275  0540 00 0 00354         RCHA CNTL      WRITE ONE WORD OF
                                               ALL ONES ON TAPE
00276  0060 00 0 00276         TCOA *
00277 -076100000000            OCT -76100000000 DRUM DISCONNECT


00300  0762 00 0 00301         RDR 1
00301  0766 00 0 01221         WTBA 1
00302  0540 00 0 00354         RCHA CNTL      WRITE ONE WORD OF
                                               ALL ONES ON TAPE
00303  0060 00 0 00303         TCOA *
00304 -076100000000            OCT -76100000000 DRUM DISCONNECT


*WITH SWT 4 DOWN CHECK THAT A DRUM MAY BE SELECTED
*WITH A CHANNEL IN USE.

*THIS IS POSSIBLE BECAUSE THE LINE-NOT READ OR WRITE SELECT-IS
*NOT USED TO TURN ON THE RD OR WR TRIGGER ON 5.02. INSTEAD THIS
*LINE HAS BEEN CHANGED TO-NOT DRUM READ OR WRITE SELECT-GOING
*TO CKT. 1197-B WHICH WILL ALLOW DRUM TO BE SELECTED WHEN A
*CHANNEL IS IN USE AND NO OTHER DRUM SELECT LINE UP.

00305  0760 00 0 00164         SWT 4           SCOPE DRUM 1 READ AND
                                               WRITE SELECTS IF DOWN
00306  0020 00 0 00321         TRA SW5


00307  0000 00 0 00310         HTR *+1        1. TAKE TAPE UNIT 1-CHAN A
                                               OUT OF READY STATUS
                                               IN ORDER TO KEEP
                                               CHANNEL A SELECTED
                                               2. PRESS START BUTTON


00310  0766 00 0 01221  A5     WTBA 1
00311  0762 00 0 00301         RDR 1          N08-4
00312 -076100000000            OCT -76100000000 DRUM DISCONNECT
00313  0766 00 0 00301         WDR 1          N08-8
00314 -076100000000            OCT -76100000000 DRUM DISCONNECT
00315  0760 00 0 00164         SWT 4
00316  0020 00 0 00320         TRA *+2
00317  0020 00 0 00311         TRA A5+1

00320  0000 00 0 00321         HTR *+1         1. PUT TAPE UNIT 1-CHAN A
                                               BACK INTO READY STATUS
                                               2. PRESS START BUTTON
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```
*CHECK INTERRUPT WITH SWT 5 DOWN

00321  0760 00 0 00165  SW5    SWT 5
00322  0020 00 0 00342         TRA A6
00323  0000 00 0 00324         HTR *+1        1. REMOVE DRUM SHOE
                                              2. ADD JUMPER FROM MF4-AD TO
                                                 MF4-37J
                                                 THIS ALLOWS THE UNIT ADR 1
                                                 LINE-5.01.02-TO CONDITION
                                                 INTERRUPT-2.07.75
                                              3. PRESS START
*CHECK INTERRUPT WHEN A DRUM IS SELECTED.

*WITH THIS CONDITION WE SHOULD NOT BE ABLE TO INTERRUPT
*DUE TO THE LINE-NOT DRUM RD OR WR SELECT-COMMING INTO
*CKT. 1173-D ON PAGE 2.07.75

00324  0500 00 0 00367  TR     CLA TRAP       HTR TO TR1
00325  0601 00 0 00004         STO 4
00326 -076100000000     TR1    OCT -76100000000
00327  0766 00 0 00302         WDR 2          DE-CONDITION CKT. 1173-D ON
                                              2.07.75
00330  0761 00 0 00001         NOP 1          TURNS ON INTERRUPT DEMAND
                                              TRIGGER-2.07.75-BUT SHOULD
                                              NOT INTERRUPT
                                              IF THE INTERRUPT LINE DOES
                                              COME UP THE MACHINE WILL
                                              HTR AT 00004 TO TR1

*CHECK INTERRUPT WHEN A DRUM IS NOT SELECTED.
*WITH THIS CONDITION WE SHOULD BE ABLE TO INTERRUPT AND
*TRAP TO 00004 WHENEVER A DISCONNECT INSTRUCTION IS GIVEN SINCE THE
*INTERRUPT DEMAND TRIGGER IS ALREADY ON AND CANNOT BE TURNED OFF
*UNTIL THE INTERRUPT LINE COMES UP. PAGE 2.07.75

00331  0500 00 0 00370         CLA TRAP1      TRA TO TR2
00332  0601 00 0 00004         STO 4
00333 -076100000000            OCT -76100000000 SHOULD INTERRUPT
00334  0000 00 0 00331         HTR *-3        FAILED TO INTERRUPT + TRAP
                                              TO 00004-2.0.75
                                              1. CHECK THAT JUMPER IS
                                                 INSTALLED PROPERLY
                                              2. CHECK THAT-NOT DRUM
                                                 READ OR WRITE SELECT-IS
                                                 UP-2.07.75

00335  0760 00 0 00165  TR2    SWT 5
00336  0020 00 0 00340         TRA *+2
00337  0020 00 0 00324         TRA TR         LOOP TO SCOPE INTERRUPT TEST


00340  0600 00 0 00004         STZ 4          CLEAR TRAP LOCATION
00341  0000 00 0 00342         HTR *+1        1. REMOVE JUMPER MF4-AD TO
                                                 MF4-37 J
                                              2. PRESS START
```

```
00342  0760 00 0 00166  A6     SWT 6
00343  0020 00 0 00345         TRA *+2        BRING IN NEXT PROGRAM
00344  0020 00 0 00030         TRA A1         REPEAT PROGRAM



00345 -076100000000            OCT -76100000000 DIRECT DATA DISCONNECT
00346  0762 00 0 01321         RCDA
00347  0540 00 0 00352         RCHA Z
00350  0544 00 0 00000         LCHA 0
00351  0020 00 0 00001         TRA 1



00352 -1 00003 0 00000  Z      IOCT 0,0,3
00353 +000000000000     K1     OCT 0
00354  0000 01 0 00355  CNTL   IOCD X,0,1
00355 -377777777777     X      OCT 777777777777
00356  0020 00 0 00170  B      TRA B1
00357  0020 00 0 00200  B2     TRA B3
00360  0020 00 0 00210  B4     TRA B5
00361  0020 00 0 00221  B6     TRA B7
00362  0020 00 0 00234  B8     TRA B9
00363  0020 00 0 00243  C1     TRA C2
00364  0020 00 0 00253  C3     TRA C4
00365  0020 00 0 00263  C5     TRA C6
00366  0020 00 0 00342  C7     TRA A6
00367  0000 00 0 00326  TRAP   HTR TR1
00370  0020 00 0 00335  TRAP1  TRA TR2

                 00000         END
```

EOF*