ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	2	001
2370	B	4	013
2370	C	5	018
3880	D	7	024
3880	E	10	037
3880	F	14	063
3880	LB	9	030
3880	LK	14	060
3880	SG	15	066

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	009	147C	A

MAP 1071-2

001
(ENTRY POINT A)

THIS IS A PAPER ONLY MAP.
THERE IS NO ASSOCIATED MAP PROGRAM.
(SEE MAP 0010, SECTION 05.00.00).

- POWER OFF THE SYSTEM.

REFERENCE THE CONSOLE MLD PA100 FOR LOCATION
AND WIRING WHEN INSTRUCTED TO REMOVE CABLE(S).
REFERENCE THE PROCESSING UNIT THEORY DIAGRAMS,
'ROW AND COLUMN OPERATION', AND MLD PA1XX FOR
AN UNDERSTANDING OF THE CONSOLE.

SEE THE TABLE ----------------------->
USE THIS TABLE WITH CONSOLE MLD(S) PA1XX.
IT IS PRINTED THROUGHOUT THE MAP FOR YOUR USE.
INSPECT THE CABLE CONNECTOR(S) FOR CORRECT
SEATING ON THE PROCESSING UNIT END.

THE CHART BELOW IS FOR YOUR USE.
IT INDICATES THE TOP CARD CONNECTOR PINS AND
THE THE CABLE PINS CONNECTED TO THEM.

PROCESSING TOP CARD CONNECTOR PIN	S L T CABLE PIN
*22	B02
*33	B13
*02	D02
*13	D13

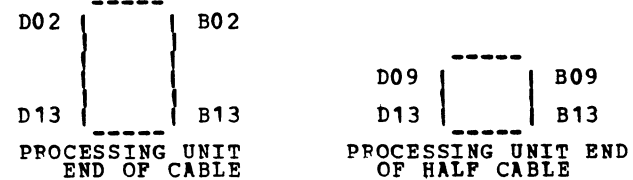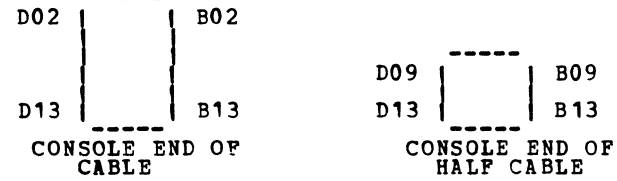* W, X, Y, OR Z (PROCESSING TOP CARD CONNECTOR)

THIS TABLE MAY BE USED FOR CABLE REFERENCE
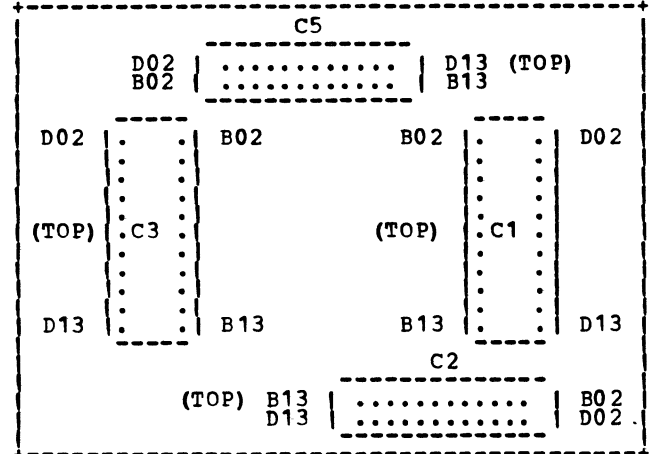
4955 PROCESSING UNIT CABLE LOCATION(S)

PROCESSING CARD	CONNECTOR ON THE CARD	CABLE NUMBER	CONNECTOR ON THE CONSOLE
DATA	X	C1	C1
ADDRESS	WL	C2	C2
ROS	W	C3	C3
ON THE BASIC CONSOLE - C5 TO C6			

4952 OR 4953 PROCESSING UNIT CABLE LOCATION

4952/53 PROCESSING TOP CARD CONNECTOR	X YL W	C1 C2 C3	C1 C2 C3 C5 TO C6

```
D02 |-----| B02
    |     |
    |     |
D13 |_____| B13
 CONSOLE END OF
    CABLE

D02 |-----| B02
    |     |
    |     |
D13 |_____| B13
 PROCESSING UNIT
   END OF CABLE
```

```
          D09 |-----| B09
              |     |
          D13 |_____| B13
          CONSOLE END OF
             HALF CABLE

          D09 |-----| B09
              |     |
          D13 |_____| B13
         PROCESSING UNIT END
            OF HALF CABLE
```

PROGRAMMER CONSOLE CABLE AND PIN LOCATION.

```
+------------------------------------------------+
|                       C5                        |
|         D02  -----------------  D13 (TOP)        |
|         B02 |:::::::::::::| B13                  |
|              -----------------                   |
|  D02 |- -| B02        B02 |- -| D02              |
|      |:   :|              |:   :|                 |
|      |: C3 :|             |: C1 :|                |
| (TOP)|:   :|        (TOP) |:   :|                 |
|      |:   :|              |:   :|                 |
|  D13 |:___:| B13      B13 |:___:| D13            |
|                       C2                         |
|         (TOP) B13  -----------------  B02         |
|               D13 |:::::::::::::| D02             |
|                    -----------------             |
+------------------------------------------------+
```

'TOP' IS PIN ROW NEAR BOARD.

ARE THE CABLE(S) CORRECTLY SEATED?
Y N

| 002
| - RESEAT THE CABLE(S).
| - GO TO THE MAP AND STEP THAT SENT YOU HERE
| TO SEE IF THE FAILING PART OR LED IS
| REPAIRED.
| IF NO REPAIR, RETURN TO THIS MAP.
| GO TO STEP 001, ENTRY POINT A.

3
A

MAP 1071-2

003
- POWER ON THE SYSTEM.

ENSURE AT LEAST ONE LED IS 'ON', ON THE BASIC
CONSOLE.
ENSURE AT LEAST ONE LED IS 'ON', ON THE OTHER
CONSOLE.
EACH CONSOLE MUST HAVE AT LEAST ONE LED 'ON',
TO ENSURE POWER IS GOOD TO THE CONSOLE
BOARD(S).

DO YOU SUSPECT A POWER PROBLEM TO EITHER
CONSOLE?
Y N

004
GO TO PAGE 4, STEP 013, ENTRY POINT B.

005
SEE THE CONSOLE MLD(S) PA1XX FOR THE LOCATION
OF THE VOLTAGE PINS.
THE VOLTAGE PINS ARE CONNECTED TO A STANDARD
VOLTAGE CONNECTOR, WHICH HAVE A HOUSING.
- REMOVE THE HOUSING AND USE A RELAY PROBE
  WITH A TEST LEAD TO MAKE CONNECTIONS.
- SET THE C.E. MULTIMETER TO THE CORRECT D C
  VOLT.

- MEASURE THE VOLTAGE BETWEEN +5V AND GROUND
  PINS ON EACH CONSOLE.

IS +5V DC MEASURED ON EACH CONSOLE?
Y N

006

IS +5V MEASURED ON THE BASIC CONSOLE?
Y N

007
- POWER OFF THE SYSTEM.

THE PROBLEM IS IN THE POWER CABLE(S) TO
THE CONSOLE OR THE POWER SUPPLY.
REFERENCE THE POWER ALDS AND CONSOLE
MLD(S) PA1XX.
DO A POINT TO POINT RESISTANCE TEST OF THE
POWER CABLE(S) TO THE CONSOLE ON THE
SYSTEM.
IF THE BASIC CONSOLE POWER CABLE IS
SUSPECTED, ENSURE YOU TEST THE CORRECT
POWER CABLE.

ARE THE POWER CABLE(S) TO THE CONSOLE(S)
O.K.?
Y N

008
REPAIR OR EXCHANGE THE FAILING POWER
CABLE.
- VERIFY THE REPAIR.

009
GO TO MAP 1470, ENTRY POINT A.

010
THERE IS +5V TO BASIC CONSOLE, BUT NOT TO
OTHER CONSOLE.
- POWER OFF THE SYSTEM.

DO A POINT TO POINT RESISTANCE TEST OF THE
VOLTAGE CABLE FROM THE BASIC TO THE OTHER
CONSOLE.
IF THE BASIC CONSOLE CABLE IS SUSPECTED,
ENSURE YOU TEST THE CORRECT POWER CABLE.

IS THE POWER CABLE O.K.?
Y N

011
REPAIR OR EXCHANGE THE FAILING CABLE.
- VERIFY THE REPAIR.

4 4
B C

        PAGE   4 OF 16

012
THE   VOLTAGE NETWORK ON THE BASIC CONSOLE IS OPEN.
REPAIR OR EXCHANGE THE BASIC CONSOLE BOARD.

013
(ENTRY POINT B)

IF YOU WANT TO   TEST   THE   KEY(S),   LED(S)   OR SWITCHES ON THE BASIC CONSOLE, THEY ARE TESTED OUT SEPARATELY IN THIS MAP.

DO   YOU   WANT   TO VERIFY ANY PART OF THE BASIC CONSOLE?
Y N

   014
   'AUDIBLE DEVICE' - THE UNIT ON   THE   CONSOLE THAT IS SOUNDED WHEN A KEY IS PRESSED.

   DO   YOU   WANT   TO   VERIFY   ANY   LED   OR   THE 'AUDIBLE DEVICE'?
   Y N

     015
     DO   YOU   WANT   TO   VERIFY   ANY   PROGRAMMER CONSOLE KEY(S)?
     Y N

       016
       DO   YOU   WANT   TO   VERIFY   THE   C.E. MAINTENANCE CONSOLE?
       Y N

         017
         GO TO PAGE 14, STEP 063,
         ENTRY POINT F.

018
(ENTRY POINT C)
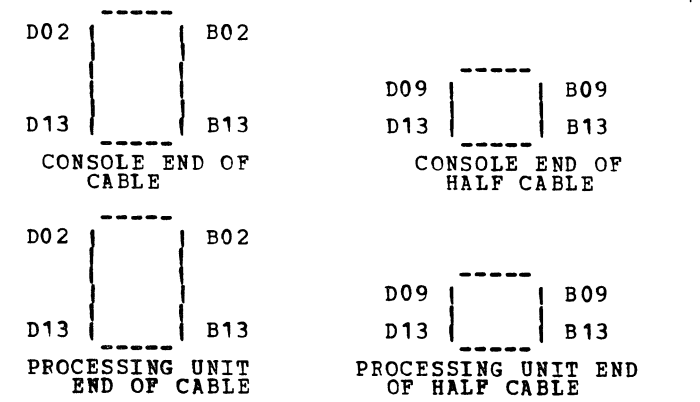- POWER OFF THE SYSTEM.

FIND THE KEY(S) TO BE VERIFIED IN THE TABLE
BELOW.
NOTE THE PIN NUMBER(S) OF THE KEY(S) TO BE
VERIFIED.
USE THE PIN NUMBER(S) INDICATED IN THE TABLE
ON THE CABLE(S) REMOVED FROM THE PROCESSING
UNIT END.
THE TEST PROCEDURE FOLLOWS THE END OF THE
TABLE.

CONSOLE KEY	ROW *	COL **	FROM PIN *	TO PIN **
AKR	C	6	C3B04	C2D13
CHECK RESTART	C	7	C3B04	C1D11
CIAR	B	3	C3B03	C2D10
CONSOLE INTERRUPT	B	1	C3B03	C1D10
DATA BUFFER	A	1	C3B10	C1D10
0	A	8	C3B10	C3B08
1	B	8	C3B03	C3B08
2	C	8	C3B04	C3B08
3	D	8	C3B05	C3B08
4	A	9	C3B10	C3B12
5	B	9	C3B03	C3B12
6	C	9	C3B04	C3B12
7	D	9	C3B05	C3B12
8	A	10	C3B10	C3B13
9	B	10	C3B03	C3B13
A	C	10	C3B04	C3B13
B	D	10	C3B05	C3B13
C	A	11	C3B10	C3D02
D	B	11	C3B03	C3D02
E	C	11	C3B04	C3D02
F	D	11	C3B05	C3D02
IAR	B	6	C3B03	C2D13
INSTRUCTION STEP	B	7	C3B03	C1D11
LEVEL 0	D	2	C3B05	C2B13
LEVEL 1	C	2	C3B04	C2B13
LEVEL 2	B	2	C3B03	C2B13
LEVEL 3	A	2	C3B10	C2B13
LOAD	D	0	C3B05	C3D03
LSR	D	6	C3B05	C2D13
MAIN STORAGE	A	6	C3B10	C2D13
OP REGISTER	C	3	C3B04	C2D10
PSW	D	3	C3B05	C2D10
R0	D	4	C3B05	C2D11
R1	C	4	C3B04	C2D11
R2	B	4	C3B03	C2D11
R3	A	4	C3B10	C2D11
R4	D	5	C3B05	C2D12
R5	C	5	C3B04	C2D12
R6	B	5	C3B03	C2D12
R7	A	5	C3B10	C2D12
RESET	C	0	C3B04	C3D03
SAR	A	3	C3B10	C2D10
KEY NOT USED	B	0	C3B03	C3D03
START	C	1	C3B04	C1D10
STOP	D	1	C3B05	C1D10
STOP ON ADDRESS	A	7	C3B10	C1D11
STOP ON ERROR	D	7	C3B05	C1D11
STORE	A	0	C3B10	C3D03

REFERENCE THE PROCESSING UNIT THEORY DIAGRAMS,
'ROW AND COLUMN OPERATION', FOR THE CONSOLE
WIRING MATRIX.

DISCONNECT THE CABLE INDICATED ABOVE AT THE
PROCESSING CARD END.
SET THE C.E. MULTIMETER TO THE 'X1
RESISTANCE'.
ON THE CABLE REMOVED FROM THE PROCESSING CARD
END FIND THE PINS INDICATED IN THE TABLE.
MEASURE THE RESISTANCE BETWEEN THE PINS IN THE
'FROM' AND THE 'TO' COLUMN OF THE KEY TO BE
TESTED.
THE C. E. MULTIMETER WILL INDICATE AN OPEN
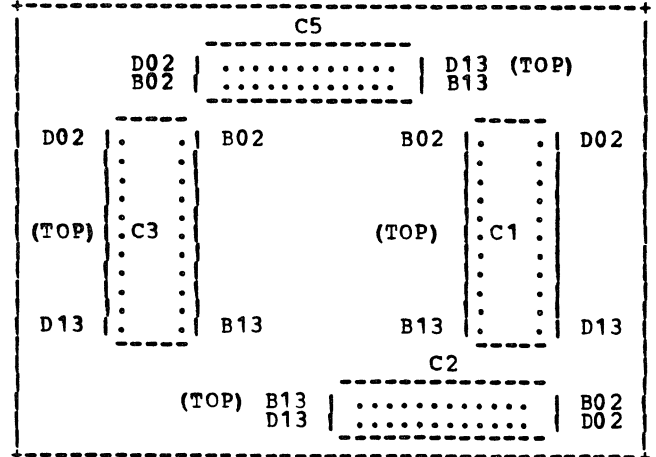CIRCUIT.
(STEP 018 CONTINUES)

THIS TABLE MAY BE USED FOR CABLE REFERENCE

4955 PROCESSING UNIT CABLE LOCATION(S)

PROCESSING CARD	CONNECTOR ON THE CARD	CABLE NUMBER	CONNECTOR ON THE CONSOLE
DATA	X	C1	C1
ADDRESS	WL	C2	C2
ROS	W	C3	C3
ON THE BASIC CONSOLE - C5 TO C6			

4952 OR 4953 PROCESSING UNIT CABLE LOCATION

4952/53 PROCESSING TOP CARD CONNECTOR	X YL W	C1 C2 C3	C1 C2 C3 C5 TO C6

```
D02 |-----|  B02

D13 |_____|  B13
CONSOLE END OF
    CABLE

D02 |-----|  B02

D13 |_____|  B13
PROCESSING UNIT
  END OF CABLE
```

```
         -----
D09 |          | B09
D13 |_____| B13
CONSOLE END OF
 HALF CABLE

         -----
D09 |          | B09
D13 |_____| B13
PROCESSING UNIT END
   OF HALF CABLE
```

PROGRAMMER CONSOLE CABLE AND PIN LOCATION.

```
+--------------------------------------------+
|                    C5                      |
|              ---------------               |
|         D02 |:::::::::::::| D13 (TOP)       |
|         B02 |:::::::::::::| B13             |
|              ---------------               |
|         -----              -----           |
| D02 |.   .| B02       B02 |.   .| D02      |
|     | .   |               | .   |          |
|     | .   |               | .   |          |
|(TOP)|.C3 .|       (TOP)   |.C1 .|          |
|     | .   |               | .   |          |
|     | .   |               | .   |          |
| D13 |.   .| B13       B13 |.   .| D13      |
|      -----                 -----           |
|                    C2                      |
|              ---------------               |
|   (TOP) B13 |:::::::::::::| B02            |
|         D13 |:::::::::::::| D02            |
|              ---------------               |
+--------------------------------------------+
```

'TOP' IS PIN ROW NEAR BOARD.

MAP 1071-5

(STEP 018 CONTINUED)
MEASURE FOR A SHORT WHEN THE KEY IS PRESSED.
REPEAT FOR ALL THE SUSPECT KEY(S).

DID ALL THE KEY(S) TEST O.K.?
Y N

```
| | 019
| | THE  PROBLEM  IS  IN  THE  CABLE  OR   THE
| | CONSOLE.
| | DO A POINT TO POINT RESISTANCE TEST OF THE
| | SUSPECT CABLE(S).
| |
| | DO THE CABLE(S) TEST OUT CORRECTLY?
| | Y N
| |
| | | 020
| | | REPAIR OR EXCHANGE THE CABLE.
| |
| | 021
| | REPAIR OR EXCHANGE THE CONSOLE.
|
| 022
| GO TO PAGE 14, STEP 063, ENTRY POINT F.
|
023
GO TO PAGE 5, STEP 018, ENTRY POINT C.
```

        PAPER ONLY MAP
        PAGE   7 OF 16

024
(ENTRY POINT D)

NOTE THE PINS FOR THE AUDIBLE DEVICE OR THE
LED TO BE VERIFIED PER THE CHART.
THE TEST PROCEDURE FOLLOWS THE END OF THE
TABLE.

| LED(S) ON THE | PUT GROUND LEAD ON PIN: | |
CONSOLE	OTHER CONSOLE	BASIC CONSOLE
AUDIBLE DEVICE	C3B11	
CHECK	C3D13	
CHECK RESTART	C3B07	
DATA BIT 00	C1B02	
DATA BIT 01	C1B03	
DATA BIT 02	C1B04	
DATA BIT 03	C1B05	
DATA BIT 04	C1D06	
DATA BIT 05	C1B07	
DATA BIT 06	C1B08	
DATA BIT 07	C1B09	
DATA BIT 08	C1B10	
DATA BIT 09	C1D07	
DATA BIT 10	C1B12	
DATA BIT 11	C1B13	
DATA BIT 12	C1D02	
DATA BIT 13	C1D09	
DATA BIT 14	C1D04	
DATA BIT 15	C1D05	
INSTRUCTION STEP	C3D11	
LEVEL 00	C2B09	
LEVEL 01	C2B10	
LEVEL 02	C2B11	
LEVEL 03	C2B12	
LOAD	C3D06	C6D06
POWER ON (NOT +) OR DOT SIDE OF LED		
RUN	C3D04	C6D04
STOP	C3D10	
STOP ON ADDRESS	C3D12	
STOP ON ERROR	C3B06	
WAIT LED	C3D05	C6D05

- POWER OFF THE SYSTEM.

REFERENCE THE CONSOLE MLD(S) PA1XX FOR +5V ON
BOARD.

IS THE PROBLEM 'LED ON' OR AUDIBLE DEVICE
'SOUNDING'?
Y N
|
| 025
| GO TO PAGE 9, STEP 030, ENTRY POINT LB.
|
026
DISCONNECT THE CABLE(S) C1, C2 AND C3 AT THE
PROCESSING CARD END.
CONNECT A TEST LEAD TO ANY D08 GROUND PIN.
FRAME GROUND CAN BE USED INSTEAD OF D08 PIN.
TOUCH THE TEST LEAD TO ONE OF THE CABLE LOGIC
GROUND PINS (D08).

- POWER ON THE SYSTEM.

ALL LEDS OFF, AUDIBLE DEVICE SILENT, AND
'POWER ON' LED ON?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
9 8
H J

027
THERE IS A LED ON OR THE AUDIBLE DEVICE IS
SOUNDING.
- POWER OFF THE SYSTEM.

REMOVE CABLE(S)   C1, C2 AND C3 ON THE CONSOLE
END.
TOUCH TEST LEAD TO ONE OF THE D08 PINS ON THE
CONSOLE.

- POWER ON THE SYSTEM.

ALL LEDS OFF, AUDIBLE DEVICE SILENT, AND
'POWER ON' LED ON?
Y N

  028
  THERE IS A LED ON OR THE AUDIBLE DEVICE IS
  SOUNDING.
  THE CONSOLE BOARD FAILED.
  EXCHANGE THE CONSOLE BOARD.

029
ONE OF THE CABLE(S) C1, C2 OR C3 FAILED.

030
(ENTRY POINT LB)

- POWER OFF THE SYSTEM.

CONNECT A TEST LEAD TO ANY D08 GROUND PIN.
FRAME GROUND CAN BE USED INSTEAD OF D08 PIN.

- POWER ON THE SYSTEM.

TOUCH TEST LEAD (GROUND) TO AUDIBLE DEVICE OR
PIN OF LED(S) TO BE VERIFIED AT PROCESSING
CARD END OF THE CABLE.
LED(S) TESTED WILL GO ON.
AUDIBLE DEVICE TESTED WILL SOUND.
REPEAT FOR ALL SUSPECT LED(S).

THIS TABLE MAY BE USED FOR CABLE REFERENCE

4955 PROCESSING UNIT CABLE LOCATION(S)

PROCESSING CARD	CONNECTOR ON THE CARD	CABLE NUMBER	CONNECTOR ON THE CONSOLE
DATA	X	C1	C1
ADDRESS	WL	C2	C2
ROS	W	C3	C3
ON THE BASIC CONSOLE -		C5 TO	C6

4952 OR 4953 PROCESSING UNIT CABLE LOCATION

4952/53 PROCESSING TOP CARD CONNECTOR	X YL W	C1 C2 C3	C1 C2 C3 C5 TO C6

```
D02 |-----| B02
    |     |
    |     |
    |     |
D13 |_____| B13
  CONSOLE END OF
      CABLE

              D09 |-----| B09
                  |     |
              D13 |_____| B13
              CONSOLE END OF
               HALF CABLE

D02 |-----| B02
    |     |
    |     |
D13 |_____| B13
 PROCESSING UNIT
  END OF CABLE

              D09 |-----| B09
                  |     |
              D13 |_____| B13
              PROCESSING UNIT END
               OF HALF CABLE
```

PROGRAMMER CONSOLE CABLE AND PIN LOCATION.

```
+----------------------------------------+
|                    C5                  |
|             D02 |............| D13 (TOP)|
|             B02 |............| B13      |
|                                         |
| D02 |-----| B02       B02 |-----| D02   |
|     |.   .|               |.   .|       |
|(TOP)|.C3 .|         (TOP) |.C1 .|       |
|     |.   .|               |.   .|       |
| D13 |.   .| B13       B13 |.   .| D13   |
|     |-----|               |-----|       |
|                    C2                  |
|        (TOP) B13 |..........| B02      |
|              D13 |..........| D02      |
+----------------------------------------+
```

'TOP' IS PIN ROW NEAR BOARD.

DID AUDIBLE DEVICE SOUND OR LED(S) GO ON?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
1 1
0 0
K L

031
PROBLEM IS IN THE AUDIBLE DEVICE, LED(S)
OR CABLE.
USE SAME GROUND LEAD TO TEST OUT SUSPECT
LED OR AUDIBLE DEVICE ON CONSOLE BOARD
ITSELF.

LED IS GROUNDED ON PIN SIDE MARKED WITH A
DOT, OR ON THE MINUS SIDE OF LED.
PLUS SIDE OF SOME LEDS ARE MARKED + ON
CONSOLE BOARD.
IF SUSPECT LED PIN IS NOT MARKED ON
CONSOLE BOARD, THE DOT ON ALL LEDS IS
MINUS PIN.
LED(S) TESTED WILL GO ON.
REPEAT FOR ALL SUSPECT LEDS.

AUDIBLE DEVICE IS MARKED + AND -.
GROUND MINUS SIDE OF AUDIBLE DEVICE.
AUDIBLE DEVICE WILL SOUND.

DO LED(S) OR AUDIBLE DEVICE TEST OUT O.K.?
Y N

  | 032
  | EXCHANGE THE FAILING LED(S), OR THE
  | FAILING AUDIBLE DEVICE, OR THE FAILING
  | CONSOLE BOARD.

033
PROBLEM IS IN THE CABLE.
DO POINT TO POINT TEST OF SUSPECT
CABLE(S).

DO CABLE(S) TEST CORRECTLY?
Y N

  | 034
  | REPAIR OR EXCHANGE CABLE.

035
REPAIR OR EXCHANGE CONSOLE.

036
GO TO PAGE 14, STEP 063, ENTRY POINT F.

037
(ENTRY POINT E)

VERIFY THE CUSTOMER PROGRAMMER CONSOLE IS
INSTALLED AND ITS CABLE(S) CONNECTED TO THE
SYSTEM.

IS THE PROGRAMMER CONSOLE INSTALLED AND
CONNECTED?
Y N

  | 038
  | THE C.E.   MAINTENANCE CONSOLE TOOL IS
  | INSTALLED ON THE CUSTOMER SYSTEM.
  | THE CABLE(S) TESTED OUT ARE PART OF THE C.E.
  | MAINTENANCE CONSOLE TOOL.
  | IF THE TEST INDICATES A GOOD PART, THE
  | CABLE(S) NORMALLY USED BY THE BASIC CONSOLE
  | ARE NOT CONNECTED AND WILL HAVE TO BE
  | VERIFIED WITH THE C.E. MULTIMETER.
  |
  |
  | REMEMBER, THE CABLE(S) FOR THE BASIC CONSOLE
  | ARE NOT PART OF THE TEST FOR THE SWITCHES,
  | LEDS OR SWITCHES IN THIS PART OF MAP IF THE
  | DOES NOT HAVE A PROGRAMMER CONSOLE, OR THE
  | MAINTENANCE CONSOLE IS USED.
  | CONTINUE ON THE YES COLUMN.

1
1
M

039
FIND SUSPECT KEY, LED OR SWITCH TO BE VERIFIED
IN TABLE BELOW.
NOTE PINS FOR EACH, IN TABLE BELOW.
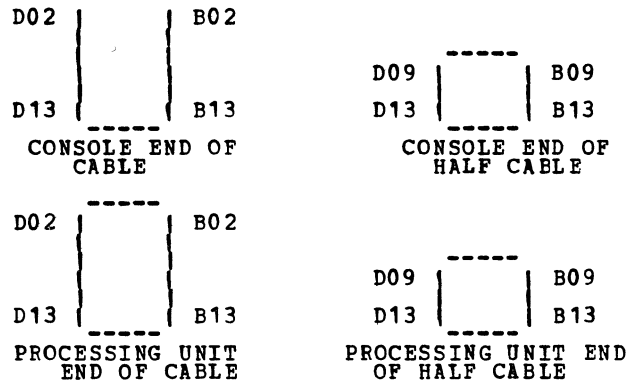TEST PROCEDURE AT END OF TABLE.

SWITCHES AND LED(S) ON THE BASIC CONSOLE	FROM PIN	TO PIN	C E MULTIMETER READING
AUTO IPL MODE	C3D08	C3D07	SHORT
DIAGNOSTIC MODE	C3D08	C3D09	SHORT
GROUND		C3D08	
LOAD KEY	C3D03	C3B05	SHORT
LOAD LED		C3D06	
PRIMARY SWITCH	C3D08	C3B09	OPEN
ALTERNATE SWITCH	C3D08	C3B09	SHORT
RUN LED		C3D04	
WAIT LED		C3D05	

- POWER OFF THE SYSTEM.

DISCONNECT C3 CABLE AT PROCESSING CARD END.
REFERENCE   THE   CONSOLE   MLD(S)   PA1XX   FOR
LOCATION.

THIS TABLE MAY BE USED FOR CABLE REFERENCE

4955 PROCESSING UNIT CABLE LOCATION(S)

PROCESSING CARD	CONNECTOR ON THE CARD	CABLE NUMBER	CONNECTOR ON THE CONSOLE
DATA	X	C1	C1
ADDRESS	WL	C2	C2
ROS	W	C3	C3
ON THE BASIC CONSOLE -		C5 TO	C6

4952 OR 4953 PROCESSING UNIT CABLE LOCATION

4952/53 PROCESSING TOP CARD CONNECTOR	X YL W	C1 C2 C3	C1 C2 C3 C5 TO C6

```
D02 |  ----  | B02
    |        |
    |        |
D13 |  ----  | B13
   CONSOLE END OF
       CABLE
```

```
        D09 |  ----  | B09
            |        |
        D13 |  ----  | B13
         CONSOLE END OF
           HALF CABLE
```

```
D02 |  ----  | B02
    |        |
    |        |
D13 |  ----  | B13
  PROCESSING UNIT
    END OF CABLE
```

```
        D09 |  ----  | B09
            |        |
        D13 |  ----  | B13
       PROCESSING UNIT END
          OF HALF CABLE
```

PROGRAMMER CONSOLE CABLE AND PIN LOCATION.

```
+------------------------------------------+
|                    C5                    |
|       D02 | :::::::::::::: | D13 (TOP)    |
|       B02 | :::::::::::::: | B13          |
|                                          |
| D02 | .  . | B02    B02 | .  . | D02      |
|     | :    |            | :    |          |
|(TOP)| :.C3 |      (TOP) | :.C1 |          |
|     | :    |            | :    |          |
| D13 | :  . | B13    B13 | :  . | D13      |
|                                          |
|                    C2                    |
|   (TOP) B13 | :::::::::::: | B02          |
|         D13 | :::::::::::: | D02          |
+------------------------------------------+
```

'TOP' IS PIN ROW NEAR BOARD.

DO YOU WANT TO VERIFY THE LOAD KEY?
Y N
|
| 040
| DO YOU WANT TO VERIFY ANY OF THE LEDS?
| Y N
| |
| | 041
| | DO YOU WANT TO VERIFY A SWITCH?
| | Y N
1 1 1 1
3 3 2 2
N P Q R

Q R   CONSOLE TEST   MAP 1071-12
1 1
1 1   PAPER ONLY MAP
| |
| | PAGE 12 OF 16

| |
| 042
| GO TO PAGE 14, STEP 063, ENTRY POINT F.

043
NOTE - WHEN TESTING A SWITCH, TEST EACH
POSITION OF THE SWITCH.

- SET THE C.E. MULTIMETER TO X1 RESISTANCE.

REFERENCE THE PINS IN THE TABLE ABOVE.
MEASURE THE RESISTANCE BETWEEN 'FROM' PIN AND
'TO' PIN.

- OPERATE THE SWITCH.

THE RESISTANCE READING IS IN 'C. E.
MULTIMETER READING' COLUMN.

- OPERATE THE SWITCH TO ANY OTHER POSITION.

THIS WILL CHANGE THE C. E. MULTIMETER
READING AND VERIFY THE OPERATION OF THE
SWITCH.

DID THE SWITCH OPERATE CORRECTLY?
Y N
| |
| | 044
| | NOTE - WHEN TESTING A SWITCH, TEST EACH
| | POSITION OF THE SWITCH.
| |
| | - SET THE C.E. MULTIMETER TO X1 RESISTANCE.
| | - TEST THE SUSPECT SWITCH ON THE BASIC
| | CONSOLE.
| |
| | USE A TEST LEAD TO CONNECT DIRECTLY TO EACH
| | SWITCH TERMINAL.
| | MEASURE THE RESISTANCE BETWEEN EACH SWITCH
| | TERMINAL.
| | - OPERATE THE SWITCH.
| |
| | THE RESISTANCE READING IS IN 'C. E.
| | MULTIMETER READING' COLUMN.
| | - OPERATE THE SWITCH TO ANY OTHER POSITION.
| | THIS WILL CHANGE THE C. E. MULTIMETER
| | READING AND VERIFY THE OPERATION OF THE
| | SWITCH.
| |
| | DID THE SWITCH OPERATE CORRECTLY?
| | Y N
| | | |
| | | 045
| | | THE SWITCH IS BAD.
| | | REPAIR OR EXCHANGE THE SWITCH.
| | | IF NO REPAIR, EXCHANGE THE CONSOLE.
| |
| | 046
| | PROBLEM IS IN THE CABLE OR THE CONSOLE(S).
| | DO POINT TO POINT TEST OF SUSPECT CABLE(S).
| |
| | DO THE CABLE(S) TEST CORRECTLY?
| | Y N
| | | |
| | | 047
| | | REPAIR OR EXCHANGE CABLE.
| |
| | 048
| | REPAIR OR EXCHANGE THE BASIC CONSOLE.
| | IF NO REPAIR, THE OTHER CONSOLE BOARD HAS A
| | BAD NETWORK ON IT.
| | EXCHANGE THE OTHER CONSOLE BOARD.
| | - VERIFY THE REPAIR.
|
049
GO TO PAGE 14, STEP 063, ENTRY POINT F.

050
REFERENCE PINS IN TABLE ABOVE.
DISCONNECT CABLE INDICATED AT THE PROCESSING
CARD END.
DO LED TEST PROCEDURE THROUGH THE CABLE.
GROUND PIN INDICATED IN TABLE TO D08 PIN OR
FRAME GROUND.
USE GROUNDED TEST LEAD TO TEST OUT SUSPECT
LED.
LED(S) TESTED WILL GO ON.
REPEAT FOR ALL SUSPECT LEDS.

DO THE LED(S) TEST GOOD THROUGH THE CABLE?
Y N

   051
   DO TEST OF LED(S) ON THE CONSOLE BOARD.
   USE GROUNDED TEST LEAD TO TEST OUT SUSPECT
   LED ON CONSOLE BOARD.
   LED IS GROUNDED ON PIN SIDE MARKED WITH A
   DOT, OR ON THE MINUS SIDE OF LED.
   PLUS SIDE OF SOME LEDS ARE MARKED + ON
   CONSOLE BOARD.
   IF SUSPECT LED PIN IS NOT MARKED ON
   CONSOLE BOARD, THE DOT ON LEDS IS THE
   MINUS PIN.
   LED(S) TESTED WILL GO ON.
   REPEAT FOR ALL SUSPECT LEDS.

   DO THE LED(S) TEST OUT O. K. ON THE
   CONSOLE BOARD?
   Y N

     052
     EXCHANGE THE FAILING LED OR THE CONSOLE
     BOARD.

   053
   DO POINT TO POINT TEST OF SUSPECT
   CABLE(S).
   SET THE C.E. MULTIMETER TO X1 RESISTANCE.
   MEASURE FOR AN OPEN OR SHORT IN THE CABLE,
   PIN TO PIN.

   DO THE CABLE(S) TEST CORRECTLY?
   Y N

     054
     REPAIR OR EXCHANGE CABLE.

   055
   REPAIR OR EXCHANGE CONSOLE.

056
GO TO PAGE 14, STEP 063, ENTRY POINT F.

057
REFERENCE THE CABLE C3 REMOVED FROM THE
PROCESSING CARD.
- SET THE C.E. MULTIMETER TO X1 RESISTANCE.
- DO NOT PRESS LOAD KEY.
TEST FOR AN OPEN BETWEEN C3B05 TO C3D03.
REFERENCE TABLE ABOVE.

DID THE LOAD KEY TEST AS AN 'OPEN'?
Y N

  058
  GO TO PAGE 14, STEP 060, ENTRY POINT LK.

059
PRESS AND HOLD LOAD KEY.
- PRESS AND HOLD THE LOAD KEY.
TEST FOR A SHORT BETWEEN C3B05 AND C3D03.

DID LOAD KEY TEST AS A SHORT?
Y N

                                            25JUN79   PN1635176
1 1   EC375475   PEC375401
4 4   MAP 1071-13
S T

060
(ENTRY POINT LK)
THE PROBLEM IS IN THE CABLE OR THE LOAD KEY.
DO A POINT TO POINT TEST OF THE SUSPECT
CABLE(S).

DO THE CABLE(S) TEST CORRECTLY?
Y N

  061
  REPAIR OR EXCHANGE THE CABLE.

062
REPAIR OR EXCHANGE THE LOAD KEY.
IF NO REPAIR, THE CONSOLE BOARD IS BAD.
- VERIFY THE REPAIR.

063
(ENTRY POINT F)

THE MAP AND STEP THAT SENT YOU HERE MAY HAVE
INSTRUCTED YOU TO VERIFY SOME OTHER PART OF A
CONSOLE.
IF MORE TESTING ON CONSOLE(S) IS NEEDED BY THE
MAP, SUCH AS OTHER KEY(S), LED(S) OR SWITCHES
ON THE PROGRAMMER CONSOLE, C.E. MAINTENANCE
CONSOLE, OR BASIC CONSOLE, DO IT NOW.

IS MORE TESTING NEEDED BY MAP THAT SENT YOU
HERE?
Y N

  064
  IF YOU SUSPECT A PROBLEM IN THE CONSOLE,
  SUCH AS:
  THE CONSTANT SOUNDING OF THE 'AUDIBLE
  DEVICE', OR A CUSTOMER PROBLEM WITH THE
  CONSOLE' THAT IS NOT REPAIRED AT THIS POINT
  IN THIS MAP, OR THERE MAY BE A SHORT CIRCUIT
  IN THE CONSOLE,
  THE FOLLOWING IS A TEST FOR A SHORT CIRCUIT
  IN THE CONSOLE WIRING.

  DO YOU WANT TO TEST THE ROW, COLUMN OR
  LED(S) WIRING FOR A SHORT CIRCUIT?
  Y N

    065
    ANY CABLE OR COVER REMOVED IN THIS MAP
    MUST BE RETURNED TO ORIGINAL CONDITION.
    RETURN TO MAP AND STEP THAT SENT YOU HERE.

066
(ENTRY POINT SG)

TABLE 1 IS A LIST OF PINS FOR A ROW TO ROW
TEST FOR A SHORT.

TABLE 2 TO THE RIGHT, IS A LIST OF PINS FOR A
COLUMN TO COLUMN TEST FOR A SHORT

TABLE 3 TO THE RIGHT, IS A LIST OF PINS FOR A
ROW TO COLUMN TEST FOR A SHORT.

TABLE 4 TO THE RIGHT, IS A LIST OF PINS FOR A
ROW AND COLUMN TO LED(S) TEST FOR A SHORT.

A ROW TO COLUMN SHORT (TABLE 3) IS INDICATED
BY THE CONSTANT SOUNDING OF THE 'AUDIBLE
DEVICE'.

REFERENCE THE CONSOLE MLD(S) PA1XX FOR THE PIN
LOCATION OF THE ROW AND THE COLUMN.
IF THE MAP THAT SENT YOU HERE INSTRUCTED YOU
TO CHECK FOR A SPECIFIC SHORT, USE THE TABLE
NEEDED FOR THAT SHORT.
IF NO INSTRUCTION IS GIVEN, GO THROUGH TABLES
1, 2, 3 AND 4 IN SEQUENCE.
THE TEST PROCEDURE FOLLOWS THE TABLES.

| TABLE ONE (1) |

ROW TO ROW

REFERENCE COLUMN OR ROW	TEST LEAD ON	TEST ROW(S)	
ROW A	C3B10	B TO D	
ROW B	C3B03	C TO D	
ROW C	C3B04	D ONLY	
ROW D	C3B05	PIN REFERENCE ONLY	

SET THE C.E. MULTIMETER TO X1 RESISTANCE.
USE THE PINS INDICATED IN THE TABLE(S) ABOVE.
PUT PLUS TEST LEAD ON PIN INDICATED IN 'TEST
LEAD ON' COLUMN.
THIS IS THE REFERENCE POINT FOR MEASURING FOR
A SHORT CIRCUIT.
PUT MINUS TEST LEAD ON PINS INDICATED BY
ROW(S) AND COLUMN(S).
START AT THE TOP OF THE TABLE AND TEST THE
LED, ROW OR COLUMN INDICATED IN SEQUENCE.
COLUMN 00 IS C3D03 OF CABLE DISCONNECTED FROM
PROCESSING CARD.
ROW A IS C3B10 OF CABLE DISCONNECTED FROM
PROCESSING CARD.
'TEST LEAD ON' COLUMN IS USEFUL FOR THE COLUMN
AND ROW PIN LOCATION.
THE C. E. MULTIMETER WILL INDICATE AN OPEN
CIRCUIT.
DO THIS FOR ALL 'TEST LEAD ON' PINS.

DOES THE C.E. MULTIMETER INDICATE AN OPEN
CIRCUIT FOR THE TEST?
Y N

| 067
| THE PROBLEM IS IN THE CABLE OR THE CONSOLE.
| DO A POINT TO POINT RESISTANCE TEST OF THE
| SUSPECT CABLE(S).
|
| DO THE CABLE(S) TEST OUT CORRECTLY?
| Y N
|
| | 068
| | REPAIR OR EXCHANGE THE CABLE.
|
|
|
|
|
| |
1 1
6 6
W X

| TABLE TWO (2) |

COLUMN TO COLUMN

REFERENCE COLUMN OR ROW	TEST LEAD ON		TEST COLUMN(S)
COLUMN 00	C3D03		01 TO 11
COLUMN 01	C1D10		02 TO 11
COLUMN 02	C2B13		03 TO 11
COLUMN 03	C2D10		04 TO 11
COLUMN 04	C2D11		05 TO 11
COLUMN 05	C2D12		06 TO 11
COLUMN 06	C2D13		07 TO 11
COLUMN 07	C1D11		08 TO 11
COLUMN 08	C3B08		09 TO 11
COLUMN 09	C3B12		10 TO 11
COLUMN 10	C3B13		11 ONLY
COLUMN 11	C3D02	PIN REFERENCE ONLY

| TABLE THREE (3) |

ROW TO COLUMN TEST

REFERENCE COLUMN OR ROW	TEST LEAD ON	TEST ROW(S)	TEST COLUMN(S)
ROW A	C3B10		00 TO 11
ROW B	C3B03		00 TO 11
ROW C	C3B04		00 TO 11
ROW D	C3B05		00 TO 11
COLUMN 11	C3D02	REFERENCE PIN ONLY	
LOGIC GROUND	C3D08	A TO D	00 TO 11
FRAME GROUND	FRAME	A TO D	00 TO 11

| TABLE FOUR (4) |

LED(S) TO ROW(S) AND COLUMN(S)

THE LED ON THE BASIC CONSOLE	TEST LEAD ON	TEST ROW(S)	TEST COLUMN(S)
LOAD	C3D06	A TO D	00 TO 11
RUN	C3D04	A TO D	00 TO 11
WAIT	C3D05	A TO D	00 TO 11
	FRAME	ABOVE LED(S)	

| | |
| | 069
| | EXCHANGE THE CONSOLE BOARD.

| 070
| ANY CABLE OR COVER REMOVED IN THIS MAP MUST
| BE RETURNED TO ORIGINAL CONDITION.
| RETURN TO MAP AND STEP THAT SENT YOU HERE.

071
GO TO PAGE 4, STEP C13, ENTRY POINT B.