

002
1.0 PURPOSE

THE PURPOSE OF THIS MAP IS TO DETERMINE FROM A SYSTEM POSITION HOW TO LOCATE A PROBLEM WHEN:
(A) THE IPL WAS NOT CORRECT.
(B) THE PROCESSING UNIT TEST FOUND AN ERROR BEFORE LOADING DCP.

--- NOTE ---

BEFORE USING THIS MAP, ENSURE THAT THE DISKETTE UNIT ATTACHMENT CARD IS JUMPERED AS AN IPL SOURCE. SELECT THE SAME IPL SOURCE, PRIMARY OR ALTERNATE, ON THE BASIC CONSOLE SWITCH. ALSO MAKE NOTE OF THE DEVICE ADDRESS IT IS JUMPERED FOR. SEE MAINTENANCE INFORMATION MANUAL PARA. A2.7

1.1 USE

SOME HAND LOOP ROUTINES ARE USED IN THIS MAP TO DETERMINE IF THE DISKETTE UNIT IS THE FAILING UNIT.

DID ANOTHER MAP SEND YOU HERE TO EXECUTE A HAND LOOP?
Y N

003.
(ENTRY POINT F)
SEE NOTE TO RIGHT.

USING THE GENERAL LOGIC PROBE. (GLP)

THE POWER FOR THE GLP CAN BE OBTAINED FROM ANY PROCESSING UNIT OR EXPANSION BOARD ON THE SYSTEM.
THERE IS A SIX (6) FOOT POWER CABLE SUPPLIED WITH THE GENERAL LOGIC PROBE. THIS IS LONG ENOUGH TO REACH THE DISKETTE UNIT WHEN PROBING.
THE MINUS (BLACK LEAD) IS CONNECTED TO ANY D08, J08, P08 OR S08 PIN.
THE PLUS (RED LEAD) IS CONNECTED TO ANY D03, J03, P03 OR S03 PIN.

IF DISKETTE UNIT SIDE COVER IS REMOVED DURING PROBING, VOLTAGE FOR THE GLP CAN BE OBTAINED ON THE DCC (DRIVE CONTROL CARD).
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF140.
THE MINUS (BLACK LEAD) IS CONNECTED TO THE GROUND PIN.
THE PLUS (RED LEAD) IS CONNECTED TO THE +5V PIN.

REFERENCE 'DIAGNOSTIC SERVICE GUIDE'
SEC.11.00.00.,
'GENERAL LOGIC PROBE SUMMARY'.

DO THE DATA LAMPS CONTAIN '00E5'?
Y N

004
WHEN HEXADECIMAL '0CE0' IS IN THE DATA LAMPS, THE PROCESSING UNIT SENT OUT THE IPL SEQUENCE AND HAS NOT RECEIVED A RESPONSE FROM THE LOAD SOURCE
PROBE IPL LINE (S04) AT THE IPL DISKETTE UNIT ATTACHMENT CARD INTERFACE.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
IS IT UP (NOT ACTIVE)?
Y N

005
IPL LINE WAS GENERATED BUT THE PROCESSING UNIT DID NOT RECOGNIZE IT.
GO TO MAP 2070, ENTRY POINT IP.

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006
PROBE IIPL LINE (P07) AT THE IPL DISKETTE UNIT
ATTACHMENT CARD INTERFACE.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
IS IT DOWN (ACTIVE)?
Y N

007
PROBE IIPL (P07) AT THE PROCESSING UNIT
INTERFACE.
SEE PROCESSING UNIT MAINTENANCE LOGIC
DIAGRAM VOL 1.
IS IT DOWN (ACTIVE)?
Y N

008
IIPL NOT AT PROCESSING UNIT OUTPUT.
GO TO MAP 2070, ENTRY POINT IP.

009
THE IIPL LINE (P07) IS PRESENT AT THE
PROCESSING UNIT, BUT NOT AT THE DISKETTE
UNIT ATTACHMENT CARD POSITION.

REFERENCE CORRECT PROCESSING UNIT OR
EXPANSION BOARD LOGIC IN MAINTENANCE LOGIC
DIAGRAM VOL. ONE (1).

PROBE THE LINE, STARTING AT THE PROCESSING
UNIT AND WORKING TOWARD THE DISKETTE UNIT
ATTACHMENT CARD POSITION.

DETERMINE WHERE LINE IS LOST AND MAKE
REPAIR.

IF TWO CHANNEL SWITCH IS INSTALLED OR:
IF CHANNEL REPOWER CARD IS INSTALLED:

PROBE THE SUSPECT PIN LINE IN THE CORRECT
CARD POSITION
ALSO ANY SUITABLE TOP CARD CONNECTORS.

VERIFY THE REPAIR.

010
VERIFY THAT THE PRIMARY/ALTERNATE SWITCH IS
GOOD.
GO TO MAP 1071, ENTRY POINT E.
IF NO REPAIR, RETURN HERE AND CONTINUE.

PROBE THE CORRECT STATUS BUS BIT (0 OR 1) AT
THE IPL DISKETTE UNIT ATTACHMENT CARD
INTERFACE. PRIMARY=BIT 0 (J13) AND
ALTERNATE=BIT 1 (G13).
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
IS THE CORRECT BIT DOWN (ACTIVE)?
Y N

011
VERIFY THAT DISKETTE UNIT ATTACHMENT CARD
IPL JUMPERS COMPARE WITH CONSOLE IPL SOURCE
SELECTION
SEE MAINTENANCE INFORMATION MANUAL PARA.
A2.6.
DO THEY COMPARE?
Y N

012
CORRECT IT AND DO IPL SEQUENCE AGAIN.
GO TO MAP 0020, ENTRY POINT A.

013
PROBE THE CORRECT STATUS BUS BIT (0 OR 1) AT
THE PROCESSING UNIT INTERFACE.
SEE PROCESSING UNIT MAINTENANCE LOGIC
DIAGRAM VOL 1.
IS THE CORRECT BIT DOWN (ACTIVE) THERE?
Y N

014
STATUS BITS 0/1 NOT CORRECT FROM
PROCESSING UNIT.
GO TO MAP 2070, ENTRY POINT IP.

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015

STATUS BIT 0 (J13) OR BIT 1 (G13) IS PRESENT AT THE PROCESSING UNIT, BUT NOT AT THE DISKETTE UNIT ATTACHMENT CARD POSITION.

REFERENCE CORRECT PROCESSING UNIT OR EXPANSION BOARD LOGIC IN MAINTENANCE LOGIC DIAGRAM VOL. ONE (1).

PROBE THE LINE, STARTING AT THE PROCESSING UNIT AND WORKING TOWARD THE DISKETTE UNIT ATTACHMENT CARD POSITION.

DETERMINE WHERE LINE IS LOST AND MAKE REPAIR.

IF TWO CHANNEL SWITCH IS INSTALLED OR:
IF CHANNEL REPOWER CARD IS INSTALLED:

PROBE THE SUSPECT PIN LINE IN THE CORRECT CARD POSITION
ALSO ANY SUITABLE TOP CARD CONNECTORS.

VERIFY THE REPAIR.

016

PROBE SYSTEM RESET AT DISKETTE UNIT ATTACHMENT CARD INTERFACE (PIN M05).

OBSERVE PROBE.

PRESS RESET KEY.

SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.

DID SYSTEM RESET PULSE?

Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
SET OTHER SWITCH TO MULTI-LEVEL.

017

CHECK FOR SAME CONDITION AT PROCESSING UNIT INTERFACE.

SEE PROCESSING UNIT MAINTENANCE LOGIC DIAGRAM VOL 1.

OBSERVE PROBE.

PRESS RESET KEY.

DID SYSTEM RESET PULSE?

Y N

018

PROCESSING UNIT PROBLEM.

SYSTEM RESET NOT CORRECT FROM PROCESSING UNIT.

GO TO MAP 2070, ENTRY POINT IP.

019

SYSTEM RESET (M05) IS PRESENT AT THE PROCESSING UNIT, BUT NOT AT THE DISKETTE UNIT ATTACHMENT CARD POSITION.

PRESS RESET KEY AND CHECK FOR PULSING OF SYSTEM RESET LINE IN FOLLOWING INSTRUCTIONS.

REFERENCE CORRECT PROCESSING UNIT OR EXPANSION BOARD LOGIC IN MAINTENANCE LOGIC DIAGRAM VOL. ONE (1).

PROBE THE LINE, STARTING AT THE PROCESSING UNIT AND WORKING TOWARD THE DISKETTE UNIT ATTACHMENT CARD POSITION.

DETERMINE WHERE LINE IS LOST AND MAKE REPAIR.

IF TWO CHANNEL SWITCH IS INSTALLED OR:
IF CHANNEL REPOWER CARD IS INSTALLED:

PROBE THE SUSPECT PIN LINE IN THE CORRECT CARD POSITION
ALSO ANY SUITABLE TOP CARD CONNECTORS.

VERIFY THE REPAIR.

020

EXCHANGE DISKETTE UNIT ATTACH CARD
VERIFY THE REPAIR.

25JUN79 PN1635094

EC375475 PEC755551

MAP 0170-4

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021
DISPLAY MAIN STORAGE LOCATION HEXADECIMAL
'0000' AS FOLLOWS:
PRESS RESET KEY.
PRESS SAR KEY.
ENTER '0000' IN CONSOLE DATA KEYS.
PRESS STORE KEY.
PRESS MAIN STORAGE KEY.
CONTENTS OF LOCATION '0000' IS DISPLAYED IN
DATA LAMPS.
DOES MAIN STORAGE LOCATION '0000' CONTAIN
'64XX'?

Y N

022
DOES MAIN STORAGE LOCATION '0000' CONTAIN
'FFFF'?

Y N

023
GO TO PAGE 8, STEP 055,
ENTRY POINT E.

024
OPEN THE DISKETTE DOOR, THEN POWER OFF
SYSTEM.
DISCONNECT THE PROCESSING UNIT CARD FILE
FROM THE REMAINDER OF THE SYSTEM
REMOVE ALL I/O CARDS FROM THE PROCESSING
UNIT CARD FILE (ALSO REMOVE FLOATING POINT
CARD IF THE FLOATING POINT FEATURE IS
INSTALLED).
INSTALL IPL DISKETTE UNIT IN THE SOCKET
NEAREST TO THE PROCESSING UNIT IN THE CARD
FILE
POWER SYSTEM ON AND CLOSE THE DISKETTE DOOR
WAIT 12 SECONDS., THEN PRESS RESET KEY AND
LOAD KEY.
ARE ALL ERROR SYMPTOMS THE SAME AS BEFORE?

Y N

025
RETURN SYSTEM TO ORIGINAL CONFIGURATION.
GO TO MAP 0070, ENTRY POINT A.

026
PRESS RESET KEY.
THIS WILL RESET ALL STATUS, IPL AND RESET
LINES.
OBSERVE PROBE.
PROBE ALL RESET, IIPL, IPL AND THE STATUS
BUS LINES. (BITS 0, 1, 2 AND 3)
THESE AND ALL OTHER PROBING SHOULD BE DONE
AT THE DISKETTE UNIT ATTACHMENT CARD
INTERFACE.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
ARE THEY ALL UP (NOT ACTIVE)?

Y N

027
GO TO MAP 2070, ENTRY POINT IP.

028
PROBE IIPL (P07) ON THE DISKETTE UNIT
ATTACHMENT CARD INTERFACE
OBSERVE PROBE.
PRESS LOAD KEY.
PRESS RESET KEY.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
DID IIPL PULSE?

Y N

029
IIPL LINE NOT PULSING WHEN LOAD IS
PRESSED.
DATA LAMPS EQUAL '00E5'.
GO TO MAP 2070, ENTRY POINT IP.

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
SET OTHER SWITCH FOR MULTI-LEVEL.

030
 PROBE IPL (S04) ON THE DISKETTE UNIT
 ATTACHMENT CARD INTERFACE
 PRESS LOAD KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 IS LINE DOWN AFTER PRESSING LOAD KEY?
 Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
 SET OTHER SWITCH FOR MULTI-LEVEL.

031
 EXCHANGE DISKETTE UNIT ATTACHMENT CARD
 VERIFY THE REPAIR.

032
 WITH PROBE STILL ON IPL(S04) ON THE DISKETTE
 UNIT ATTACHMENT CARD INTERFACE.
 PRESS RESET KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 IS LINE UP AFTER PRESSING RESET KEY?
 Y N

033
 EXCHANGE DISKETTE UNIT ATTACHMENT CARD.
 VERIFY THE REPAIR.

034
 WITH THE PROBE STILL ON IPL (S04) ON THE
 DISKETTE UNIT INTERFACE:
 OBSERVE PROBE.
 PRESS RESET KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 IS LINE UP AFTER RESET?
 Y N

035
 EXCHANGE DISKETTE UNIT ATTACHMENT CARD
 VERIFY THE REPAIR.

036
 PROBE STATUS BUS BIT 02 (M03) ON THE DISKETTE
 UNIT ATTACHMENT CARD INTERFACE.
 OBSERVE PROBE.
 PRESS LOAD KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 IS IT ALWAYS UP (NOT ACTIVE)?
 Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
 SET OTHER SWITCH FOR MULTI-LEVEL.

037
 STATUS BUS BIT 02 PULSING WHEN LOAD/SYSTEM
 RESET IS PRESSED. DISPLAY EQUAL TO '00E5'.
 GO TO MAP 2070, ENTRY POINT IP.

038
 PROBE STATUS BUS BIT 3 (P02) ON THE DISKETTE
 UNIT INTERFACE..
 OBSERVE PROBE..
 PRESS LOAD KEY.
 PRESS RESET KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 IS IT ALWAYS UP (NOT ACTIVE)?
 Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
 SET OTHER SWITCH FOR MULTI-LEVEL.

039
 EXCHANGE DISKETTE UNIT ATTACHMENT CARD
 VERIFY THE REPAIR.

040
 PROBE C/S REQUEST (M02) ON THE DISKETTE UNIT
 ATTACHMENT CARD INTERFACE.
 OBSERVE PROBE.
 PRESS LOAD KEY.
 SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
 DOES IT PULSE WHEN THE LOAD KEY IS PRESSED?
 Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
 SET OTHER SWITCH FOR MULTI-LEVEL.

041
 EXCHANGE DISKETTE UNIT ATTACHMENT CARD
 VERIFY THE REPAIR.

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042

OBSERVE PROBE.
PRESS RESET KEY.
PROBE POLL I.D. BIT 0 (P11) ON THE DISKETTE
UNIT INTERFACE.
PRESS LOAD KEY.
PRESS RESET KEY.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
IS IT ALWAYS DOWN?

USE GENERAL LOGIC PROBE IN 'LATCH UP' MODE.
SET OTHER SWITCH FOR MULTI-LEVEL.

Y N

043

(ENTRY POINT Y)
POLL ID BITS ARE NOT BEING GENERATED BY
PROCESSING UNIT WHEN LOAD KEY AND THEN RESET
KEY ARE PRESSED.
DATA LAMPS EQUAL '00E5'.
GO TO MAP 2070, ENTRY POINT IP.

044

PROBE POLL I.D. BITS 3 AND 4 (P12 AND P13) ON
THE DISKETTE UNIT ATTACHMENT CARD INTERFACE.
OBSERVE PROBE.
PRESS LOAD
BOTH PINS SHOULD BE DOWN OR PULSING AFTER
LOAD.
BOTH PINS CORRECT AFTER LOAD?

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
SET OTHER SWITCH FOR MULTI-LEVEL.

Y N

045

GO TO STEP 043, ENTRY POINT Y.

046

PROBE POLL I.D. BITS 3 AND 4, (P12 AND P13)
ON THE DISKETTE UNIT ATTACHMENT CARD
INTERFACE.
OBSERVE PROBE.
PRESS RESET KEY.
BOTH PINS SHOULD BE UP AFTER RESET.
BOTH PINS CORRECT AFTER RESET?

Y N

047

GO TO STEP 043, ENTRY POINT Y.

048

PROBE +POLL AND +POLL PRIME (PINS M12 AND M13)
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.

USE GENERAL LOGIC PROBE IN 'LATCH UP' MODE.
SET OTHER SWITCH FOR MULTI-LEVEL.

OBSERVE PROBE.
PRESS LOAD KEY.
PRESS RESET KEY.
PROBE AT THE CARD SOCKET WHERE THE IPL
DISKETTE UNIT ATTACHMENT CARD IS NOW SEATED.

IF THE IPL DISKETTE UNIT ATTACHMENT CARD IS IN
THE FIRST SOCKET (NEXT TO THE PROCESSING
UNIT), AND THE SECOND SOCKET IS EMPTY, PIN M12
SHOULD BE UP OR PULSING UP AND M13 SHOULD BE
UP.

IF THE IPL DISKETTE UNIT ATTACHMENT CARD IS IN
THE SECOND SOCKET AND THE FIRST SOCKET IS
EMPTY, PIN M12 SHOULD BE UP AND M13 SHOULD BE
UP OR PULSING UP.

IF THE IPL DISKETTE UNIT ATTACHMENT CARD IS IN
THE SECOND SOCKET AND ANOTHER DEVICE IS
PLUGGED IN THE FIRST SOCKET, PIN M12 SHOULD BE
DOWN AND M13 SHOULD BE PULSING.
BOTH PINS O.K.?

Y N

049

POLL AND POLL PRIME FROM PROCESSING UNIT
MISSING.
DATA LAMPS EQUAL '00E5'.
GO TO MAP 2070, ENTRY POINT IP.

050
PROBE POLL RETURN (M04) ON THE DISKETTE UNIT
ATTACHMENT CARD INTERFACE.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
DOES IT PULSE DOWN (ACTIVE) WHEN PRESSING
LOAD KEY?

Y N

051
EXCHANGE DISKETTE UNIT ATTACHMENT CARD
VERIFY THE REPAIR..

052
PROBE SERVICE GATE (P05) ON THE DISKETTE
UNIT ATTACHMENT CARD INTERFACE.
OBSERVE PROBE.
PRESS LOAD KEY.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
DOES IT PULSE DOWN WHEN PRESSING LOAD KEY?

Y N

053
GO TO MAP 2070, ENTRY POINT IP.

054
SERVICE GATE NOT COMING ON WHEN LOAD/SYSTEM
RESET IS PRESSED.
DATA LAMPS EQUAL '00E5'.
EXCHANGE DISKETTE UNIT ATTACHMENT CARD
VERIFY THE REPAIR.

055
(ENTRY POINT E)

THE FOLLOWING STOP CODES ARE PUT IN LOCATION
'0000' BY A CYCLE STEAL.
IS IT EQUAL TO '6410'? (DISKETTE UNIT STOP
CODE)

Y N

056
IS IT EQUAL TO '6411'? (DISKETTE UNIT STOP
CODE)

Y N

057
IS IT EQUAL TO '6412'? (DISKETTE UNIT STOP
CODE)

Y N

058
IS IT EQUAL TO '6420'? (DISKETTE UNIT
STOP CODE)

Y N

059
IS IT EQUAL TO '6421'? (DISKETTE UNIT
STOP CODE)

Y N

1 1 1 1 1
9 8 7 7 0 9
M N P Q R S

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060
DISPLAY AND NOTE THE CONTENTS OF THE FOLLOWING
LOCATIONS:
HEXADECIMAL '4000', '8000' OR 'C000'.
PRESS RESET KEY.
PRESS SAR KEY.
ENTER 'XXXX' IN CONSOLE KEYS.
(XXXX EQUAL TO A LOCATION ABOVE)
PRESS STORE KEY.
PRESS MAIN STORAGE KEY.
CONTENTS OF LOCATION 'XXXX' IS DISPLAYED IN
DATA LAMPS.

COMPARE CONTENTS FOR ONE OF THE FOLLOWING.
HEXADECIMAL 'FFFF', '6410', '6411', '6412',
'6420' OR '6421'.
COULD YOU FIND ONE OF THEM?
Y N

061
EXCHANGE DISKETTE UNIT ATTACHMENT CARD
VERIFY THE REPAIR.

062
PROBE ADDRESS BUS BIT 00 (B02) OR 01 (B03) FOR
A DOWN LEVEL (ACTIVE) AT THE PROCESSING UNIT
INTERFACE.
SEE PROCESSING UNIT MAINTENANCE LOGIC DIAGRAM
VOL 1.
IS IT DOWN?
Y N

063
GO TO MAP 2070, ENTRY POINT IP.

064
PROBE SAME LINE AT DISKETTE UNIT ATTACHMENT
CARD INTERFACE.
SEE MAINTENANCE LOGIC DIAGRAM VOL.1 SF 100.
IS IT DOWN (ACTIVE)?
Y N

065
CHECK ALL CABLES AND CARDS BETWEEN DISKETTE
UNIT AND PROCESSING UNIT FOR CORRECT
SEATING.
ADDRESS BUS BIT 00 (B02) OR ADDRESS BUS BIT
01 (B03) IS PRESENT AT THE PROCESSING UNIT,
BUT NOT AT THE DISKETTE UNIT ATTACHMENT CARD
POSITION.

REFERENCE CORRECT PROCESSING UNIT OR
EXPANSION BOARD LOGIC IN MAINTENANCE LOGIC
DIAGRAM VOL. ONE (1).

PROBE THE LINE, STARTING AT THE PROCESSING
UNIT AND WORKING TOWARD THE DISKETTE UNIT
ATTACHMENT CARD POSITION.

DETERMINE WHERE LINE IS LOST AND MAKE
REPAIR.

IF TWO CHANNEL SWITCH IS INSTALLED OR:
IF CHANNEL REPOWER CARD IS INSTALLED:

PROBE THE SUSPECT PIN LINE IN THE CORRECT
CARD POSITION
ALSO ANY SUITABLE TOP CARD CONNECTORS.

VERIFY THE REPAIR.

066
DISCONNECT ALL EXPANSION CARD FILE CABLES AND
ALL I/O ATTACHMENT CARDS FROM PROCESSING UNIT
CARD FILE.
PROBE ADDRESS BUS BITS 00 AND 01 AGAIN.
ARE THEY BOTH UP (NOT ACTIVE)?
Y N

067
GO TO MAP 2070, ENTRY POINT IP.

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068
POWER OFF THE CARD FILE. PLUG IN IPL
DISKETTE UNIT INTO THE CARD FILE SOCKET AND
REPEAT PROBE DURING IPL.
ARE THEY BOTH UP? (NOT ACTIVE)?
Y N

069
EXCHANGE DISKETTE UNIT ATTACHMENT CARD
VERIFY THE REPAIR.

070
OTHER I/O CARD PROBLEM.
RETURN SYSTEM TO ORIGINAL CONDITION.
GO TO MAP 0070, ENTRY POINT A.

071
(ENTRY POINT B)

RECORD CONTENTS OF LOCATIONS HEXADECIMAL
'0000' THROUGH '0010' IN MAIN STORAGE
(LOCATIONS ARE DISPLAYED TWO AT A TIME). AS
MAIN STORAGE IS DISPLAYED, LOOK AT CHECK LIGHT
FOR EACH ADDRESS.
PRESS RESET KEY.
PRESS SAR KEY.
ENTER '0000' IN CONSOLE DATA KEYS.
PRESS STORE KEY.
OBSERVE 'CHECK' LAMP.
PRESS MAIN STORAGE KEY.
CONTENTS OF LOCATION 'XXXX' IS DISPLAYED IN
DATA LAMPS.
IS CHECK LAMP OFF FOR ALL OF THESE LOCATIONS?
Y N

072
GO TO MAP 2070, ENTRY POINT IP.

073
DISPLAY MAIN STORE LOCATION '0002' AS FOLLOWS:
PRESS RESET KEY.
PRESS SAR KEY.
ENTER '0002' IN CONSOLE DATA KEYS.
PRESS STORE KEY.
PRESS MAIN STORAGE KEY.
CONTENTS OF LOCATION '0002' IS DISPLAYED IN
DATA LAMPS.

CHECK BITS 01 THROUGH 07.
ANY BITS ON? (01 THROUGH 07)
Y N

074
IS BIT 00 ON?
Y N

075
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

076
DOES THE LOWER BYTE (BITS 08 TO 15) CONTAIN
THE CORRECT IPL DISKETTE UNIT DEVICE
ADDRESS?
Y N

077
POWER DOWN
REMOVE IPL DISKETTE UNIT ATTACHMENT CARD
AND VERIFY THAT THE DEVICE ADDRESS ON CARD
WILL MATCH THE DEVICE ADDRESS JUST READ IN
MAIN STORAGE
DOES IT MATCH?
Y N

078
EXCHANGE IPL DISKETTE UNIT ATTACHMENT
CARD.
VERIFY THE REPAIR.

V W
1 1
0 0

079
VISUALLY INSPECT EACH I/O CARD DEVICE
ADDRESS TO ENSURE IT WILL MATCH THE
CONFIGURATION DEVICE ADDRESS.
DO THEY ALL MATCH AND IS EACH DEVICE ADDRESS
DIFFERENT?
Y N

080
CORRECT DEVICE ADDRESS PROBLEM PER
CONFIGURATION.
GO TO MAP 0020, ENTRY POINT A.

081
USE THE UNIT DEVICE ADDRESS AS THE ERROR
INDICATION
GO TO MAP 0070, ENTRY POINT A.

082
(ENTRY POINT I)

DISPLAY MAIN STORE LOCATION '0006' AS FOLLOWS:
PRESS RESET KEY.
PRESS SAR KEY.
ENTER '0006' IN CONSOLE KEYS.
PRESS STORE KEY.
PRESS MAIN STORAGE KEY.
CONTENTS OF LOCATION '0006' IS DISPLAYED IN
DATA LAMPS.

REFERENCE BITS 01, 05, 07 AND 08. (READ
ERRORS)
ARE ANY ON?
Y N

083
IS BIT 02 ON? (OVERRUN)
Y N

084
IS BIT 03 ON? (CONTROL AM FOUND)
Y N

085
IS BIT 04 ON? (DISKETTE UNIT LOST READY)
Y N

086
IS BIT 06 ON? (END OF TRACK)
Y N

1 1 1 3 2 2
3 3 3 A A A
X Y Z A B C

B C
1 1
1 1

087
ARE BOTH BIT 13 AND 14 OFF?
(ERASE CURRENT SENSE OFF AND WRITE GATE OFF)
Y N

088
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

089
IS BIT 15 ON? (ERASE CURRENT SENSE ON)
Y N

090
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

091
PROBE +ERASE GATE AT CABLE TERMINATION CARD
(PIN B08). SEE MAINTENANCE INFORMATION
MANUAL PARA. A2.10
IS IT DOWN? (NOT ACTIVE)?
Y N

092
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

093
PROBE +ERASE CURRENT SENSE AT CABLE
TERMINATION CARD (PIN B07). SEE MAINTENANCE
INFORMATION MANUAL PARA. A2.10
IS IT UP? (ACTIVE)
Y N

094
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

095
THIS IS AN ERASE UNSAFE ERROR.
GO TO DISKETTE UNIT DEVICE ENTRY MAP 0171.

IF NO REPAIR, GO TO ERASE UNSAFE MAP.
GO TO MAP 0175, ENTRY POINT A.

096
(ENTRY POINT C)

NOTE:

YOU CAN ONLY IPL THE FOLLOWING DISKETTES

BASIC DISKETTE P/N 1635001.
SYSTEM TEST DISKETTE P/N 1635003.

- SEE THE NOTE TO THE RIGHT.
- THE DIAGNOSTIC DISKETTE INSTALLED IN THE IPL DISKETTE UNIT IS SUSPECT.
- OPEN THE DISKETTE UNIT COVER.
- REMOVE THE DIAGNOSTIC DISKETTE.
- INSERT THE SYSTEM TEST DISKETTE. (P/N 1635003)
- CLOSE THE DISKETTE UNIT COVER.
- PRESS THE LOAD KEY.
- WAIT ONE MINUTE.

IF IPL IS NEEDED, INSERT THE BASIC DISKETTE P/N 1635001, AND PRESS LOAD KEY. AT HALT '3800', INSERT THE DISKETTE WITH THE DESIRED PROGRAM.

THE SYSTEM TEST DISKETTE WILL SHOW A CORRECT IPL BY:

RDY
ENTER

OR

'34XX' IN THE DATA LAMPS.

DID THE SYSTEM TEST DISKETTE IPL CORRECTLY?

Y N
| |
| |
| |

1 1
3 3
A A
D E

X Y Z A A A MAP 0170 IPL MAP

1 1 1 A D E
1 1 1 1 1 1
1 1 1 1 2 2

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097
GO TO MAP 0070, ENTRY POINT A.

098
THE ORIGINAL DIAGNOSTIC DISKETTE IS
NOT GOOD.
OBTAIN A GOOD DIAGNOSTIC DISKETTE.

099
GO TO PAGE 18, STEP 150,
ENTRY POINT D.

100
GO TO PAGE 12, STEP 096,
ENTRY POINT C.

101
EXCHANGE THE DISKETTE UNIT ATTACHMENT CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

102
ARE BITS 08-15 OF LOCATION HEXADECIMAL '000E'
OFF?
Y N

103
EXCHANGE THE IPL DISKETTE UNIT ATTACHMENT
CARD. IF IPL STILL FAILS,
GO TO MAP 0172, ENTRY POINT D.

104
IS LOCATION HEXADECIMAL '0010' EQUAL TO
HEXADECIMAL '6E00'?
Y N

105
(ENTRY POINT J)

PRESS RESET ON THE PROGRAMMER CONSOLE.
PROBE THE FOLLOWING VARIABLE FREQUENCY
OSCILLATOR LINES ON THE CABLE TERMINATION
CARD:

PIN LINE
B12 + IGNORE WINDOW
D07 + FILE DATA DEGATE
D12 + VFO (VARIABLE FREQUENCY OSCILLATOR)
DATA SYNC
SEE MAINTENANCE INFORMATION MANUAL PARA.
A2.10
ARE THEY ALL AT A DOWN LEVEL? (NOT ACTIVE)?
Y N

106
DISCONNECT DISKETTE UNIT ATTACHMENT SOLID
LOGIC TECHNOLOGY (SLT) CABLE AND CHECK FOR
CONTINUITY OF THE FAILING LINE
IS IT OPEN?
Y N

107
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

108
EXCHANGE ATTACHMENT CABLE
VERIFY THE REPAIR.

109
PROBE THE REMAINING VFO (VARIABLE FREQUENCY
OSCILLATOR) CARD LINES AT THE CABLE
TERMINATION CARD.

PIN LINE
D06 + 4F CLOCK PHASE 1
B09 + STANDARDIZED DATA
D13 STANDARDIZED CLOCK
SEE MAINTENANCE INFORMATION MANUAL PARA.
A2.10
ARE THEY ALL PULSING?
Y N

1 1 1
5 4 4
A A A
F G H

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MAP 0170-13

110

CHECK DISKETTE UNIT ATTACHMENT SLT CABLE AND DISKETTE UNIT DEVICE CABLE ASSEMBLY FOR CONTINUITY OF LINE(S) THAT WERE NOT PULSING IN PRECEDING STEP. CHECK FROM ATTACHMENT TO CABLE TERMINATION CARD TO VARIABLE FREQUENCY CARD. SEE MAINTENANCE INFORMATION MANUAL PARA. A2.3, A2.7, A2.10 AND MAINTENANCE LOGIC DIAGRAM VOL.1 SF 110 AND SF 136.
IS A LINE(S) OPEN IN EITHER CABLE?

Y N

111

EXCHANGE VFO (VARIABLE FREQUENCY OSCILLATOR) CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA. A3.7.

VERIFY THE REPAIR.
DOES THE SAME PROBLEM STILL OCCUR?

Y N

112

VFO (VARIABLE FREQUENCY OSCILLATOR) CARD WAS BAD.

113

DISCONNECT VFO (VARIABLE FREQUENCY OSCILLATOR) CARD AND PERFORM VOLTAGE CHECK FOR +24, +5 AND GROUND ON THE VFO (VARIABLE FREQUENCY OSCILLATOR) CARD TERMINAL BLOCK.

PIN LINE

D11 +24 VOLT

D03 +5 VOLT

D08 GROUND

SEE MAINTENANCE INFORMATION MANUAL PARA.

A2.7.

IS THE VOLTAGE CORRECT?

Y N

114

GO TO MAP 4880, ENTRY POINT A.

115

GO TO MAP 0070, ENTRY POINT A.

116

EXCHANGE BAD CABLE ASSEMBLY
VERIFY THE REPAIR.

117

DISCONNECT VFO (VARIABLE FREQUENCY OSCILLATOR) CARD AND PERFORM VOLTAGE CHECK FOR +24V, +5V AND GROUND ON THE VFO (VARIABLE FREQUENCY OSCILLATOR) CARD TERMINAL BLOCK.

PIN LINE

D11 +24 VOLT

D03 +5 VOLT

D08 GROUND

SEE MAINTENANCE INFORMATION MANUAL PARA. A2.7

AND A2.7.

IS THE VOLTAGE CORRECT?

Y N

118

CHECK DISKETTE UNIT DEVICE CABLE ASSEMBLY FOR CONTINUITY.
IF NO REPAIR, GO TO POWER SUPPLY MAP.
GO TO MAP 4880, ENTRY POINT A.

119

EXCHANGE IPL DISKETTE UNIT ATTACHMENT CARD.
IF NO REPAIR, EXCHANGE VFO (VARIABLE FREQUENCY OSCILLATOR) CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA. A3.7.
VERIFY THE REPAIR.

A
F
1
3

120
PROBE THE ACCESS LINES ON THE CABLE
TERMINATION CARD FOR A VALID LOGIC LEVEL. SEE
A2.10 IN THE MAINTENANCE INFORMATION MANUAL.

PIN	LINE
B05	ACCESS LINE 0
D04	ACCESS LINE 1
B06	ACCESS LINE 2
D10	ACCESS LINE 3

ARE ALL LINES AT A VALID LOGIC LEVEL?

Y N

121
POWER OFF DISKETTE UNIT AND DISCONNECT
DISKETTE UNIT ATTACHMENT CABLE FROM
ATTACHMENT CARD END. CHECK THE FAILING LINE
BETWEEN END OF ATTACHMENT CABLE (SAME AS IN
TABLE ABOVE) AND TEST POINT LOCATED ON DRIVE
CONTROL CARD. REFERENCE MAINTENANCE LOGIC
DIAGRAM VOL. 1 SF140 FOR TEST POINT LOCATION
ON THE DRIVE CONTROL CARD.

DOES THE FAILING LINE HAVE CONTINUITY?

Y N

122
OPEN IS BETWEEN END OF SLT CABLE AND TEST
POINT ON DRIVE CONTROL CARD. PROBABLE
FIELD REPLACEABLE UNIT WILL BE SLT CABLE,
DISKETTE UNIT CABLE ASSEMBLY OR DRIVE
CONTROL CARD. ISOLATE FIELD REPLACEABLE
UNIT BY CHECKING FOR AN OPEN ON SLT CABLE,
DISKETTE UNIT DEVICE CABLE ASSEMBLY AND
THE DRIVE CONTROL CARD.
VERIFY THE REPAIR.

123
EXCHANGE IPL DISKETTE UNIT ATTACHMENT CARD.
IF NO REPAIR
GO TO MAP 0070, ENTRY POINT A.

124
PROBE +ACCESS LINES 0, 1, 2 AND 3 AT CABLE
TERMINATION CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA.
A2.10

OBSERVE PROBE.
PRESS RESET KEY.
PRESS LOAD KEY.

PIN	LINE
B05	ACCESS LINE 0
D04	ACCESS LINE 1
B06	ACCESS LINE 2
D10	ACCESS LINE 3

WHEN THE LOAD KEY IS PRESSED PULSING SHOULD BE
SEEN ON EACH OF THE 4 LINES.

DO ALL LINES PULSE?

Y N

125
POWER OFF DISKETTE UNIT AND DISCONNECT
DISKETTE UNIT ATTACHMENT CABLE FROM
ATTACHMENT CARD END. CHECK THE FAILING LINE
BETWEEN END OF ATTACHMENT CABLE (SAME AS IN
TABLE ABOVE) AND TEST POINT LOCATED ON DRIVE
CONTROL CARD. SEE MAINTENANCE LOGIC DIAGRAM
VOL. 1 SF140 FOR TEST POINT LOCATIONS ON
THE DRIVE CONTROL CARD.

IS IT OPEN?

Y N

126
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD. IF NO REPAIR EXCHANGE THE DRIVE
CONTROL CARD. SEE MAINTENANCE INFORMATION
MANUAL PARAGRAPH A3.14.2.

1 1
6 6
A A
J K

A A
J K
1 1
5 5

127
OPEN IS BETWEEN END OF SLT CABLE AND TEST
POINT ON DRIVE CONTROL CARD. PROBABLE FIELD
REPLACEABLE UNIT WILL BE SLT CABLE, DISKETTE
UNIT CABLE ASSEMBLY OR DRIVE CONTROL CARD.
ISOLATE FIELD REPLACEABLE UNIT BY CHECKING
FOR AN OPEN ON SLT CABLE, DISKETTE UNIT
DEVICE CABLE ASSEMBLY AND THE DRIVE CONTROL
CARD.

128
AFTER AN IPL ATTEMPT:
+ACCESS LINES 0 & 1 (B05,D04) SHOULD BE UP,
+ACCESS LINES 2 & 3 (B06,D10) SHOULD BE DOWN.
PROBE LINES AT THE CABLE TERMINATION CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA.

A2.10
ARE THEY AT THE CORRECT LEVEL?
Y N

129
EXCHANGE THE DISKETTE UNIT ATTACHMENT CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

130
PROBE + HEAD ENGAGE LINE (D05) AT THE CABLE
TERMINATION CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA.

A2.10
OBSERVE PROBE.
PRESS LOAD KEY.
DOES IT PULSE UP WHEN LOAD IS PRESSED.
Y N

131
CHECK DISKETTE UNIT ATTACH CABLE FOR
CONTINUITY OF THE LINE NOT PULSING.
IS IT OPEN?
Y N

132
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

133
EXCHANGE DISKETTE UNIT ATTACHMENT CABLE.
VERIFY THE REPAIR.

134
PROBE + HEAD ENGAGE AND +FILE DATA DEGATE (D05
AND D07) AT THE CABLE TERMINATION CARD.
OBSERVE PROBE.
PRESS RESET KEY.
SEE MAINTENANCE INFORMATION MANUAL PARA.

A2.10
ARE THEY BOTH DOWN (NOT ACTIVE)?
Y N

135
EXCHANGE THE DISKETTE UNIT ATTACHMENT CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

136
PROBE +SELECT HEAD 1 (B04) ON CABLE
TERMINATION CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA.

A2.10
IS IT UP (ACTIVE)?
Y N

1 1
7 7
A A
L M

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MAP 0170-16

137
- SEE THE NOTE TO THE RIGHT.
THE DIAGNOSTIC DISKETTE INSTALLED IN
THE IPL DISKETTE UNIT IS SUSPECT.
- OPEN THE DISKETTE UNIT COVER.
- REMOVE THE DIAGNOSTIC DISKETTE.
- INSERT THE SYSTEM TEST DISKETTE.
(P/N 1635003)
- CLOSE THE DISKETTE UNIT COVER.
- PRESS THE LOAD KEY.
- WAIT ONE MINUTE.

THE SYSTEM TEST DISKETTE WILL SHOW A
CORRECT IPL BY:

RDY
ENTER

OR

'34XX' IN THE DATA LAMPS.

DID THE SYSTEM TEST DISKETTE IPL
CORRECTLY?
Y N

138

GO TO MAP 0070, ENTRY POINT A.

139

THE ORIGINAL DIAGNOSTIC DISKETTE IS
NOT GOOD.
OBTAIN A GOOD DIAGNOSTIC DISKETTE.

140

EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

141

ARE BITS 4, 5 OR 6 ON?

Y N

142

EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

143

STATUS BIT(S) 0,1,2 WAS ON DURING CYCLE
STEAL.
EXCHANGE THE IPL DISKETTE UNIT ATTACHMENT
CARD AND RUN THE MAP AGAIN.
IF NO REPAIR
GO TO MAP 0070, ENTRY POINT B.

144

GO TO PAGE 10, STEP 071, ENTRY POINT B.

145

DOES MAIN STORAGE LOCATION HEXADECIMAL 0004
EQUAL '0001'?

Y N

146

POWER DOWN.
CHECK + FILE DATA FOR CONTINUITY BETWEEN
DRIVE CONTROL CARD AND VFO (VARIABLE
FREQUENCY OSCILLATOR) CARD. SEE MAINTENANCE
LOGIC DIAGRAM VOL. 1 SF136 FOR DRIVE CONTROL
CARD POINT. POWER DOWN AND REMOVE THE VFO
(VARIABLE FREQUENCY OSCILLATOR) CARD AND
CHECK FROM PIN B12. SEE MAINTENANCE
INFORMATION MANUAL PARA. A2.7 AND A3.7.
DOES THE LINE HAVE CONTINUITY?

Y N

147

REPAIR OR EXCHANGE OPEN AS NECESSARY.
VERIFY THE REPAIR.

NOTE:

YOU CAN ONLY IPL THE FOLLOWING DISKETTES

BASIC DISKETTE P/N 1635001.
SYSTEM TEST DISKETTE P/N 1635003.

IF IPL IS NEEDED, INSERT THE BASIC DISKETTE
P/N 1635001, AND PRESS LOAD KEY.
AT HALT '3800' INSERT THE DISKETTE WITH THE
DESIRED PROGRAM.

N A A
8 N P
7 1 1

MAP 0170 IPL MAP

MAP 0170-18

PAGE 18 OF 22

148
EXCHANGE DRIVE CONTROL CARD.
SEE MAINTENANCE INFORMATION MANUAL PARA.
A3.14.2. IF NO REPAIR EXCHANGE THE VFO
(VARIABLE FREQUENCY OSCILLATOR) CARD. SEE
MAINTENANCE INFORMATION MANUAL PARA. A3.7
VERIFY THE REPAIR.

EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
IF IPL STILL FAILS,
GO TO MAP 0070, ENTRY POINT B

149
GO TO PAGE 10, STEP 071, ENTRY POINT B.

150
(ENTRY POINT D)

ENSURE A GOOD DISKETTE IS INSERTED AND THE
DISKETTE UNIT DOOR IS COMPLETELY CLOSED.
CHECK THAT THE DISKETTE UNIT CABLE IS SEATED
CORRECTLY AT ATTACHMENT CARD AND IN DISKETTE
UNIT.
NOW PROBE +INDEX (B11) AT THE CABLE
TERMINATION CARD. SEE MAINTENANCE INFORMATION
MANUAL PARA. A2.10
IS IT PULSING?

Y N

151
POWER DOWN DEVICE. CHECK DISKETTE UNIT
ATTACHMENT CABLE AND DISKETTE UNIT DEVICE
CABLE ASSEMBLY FOR CONTINUITY OF THE LINE
NOT PULSING (B11).
WAS EITHER CABLE OPEN?

Y N

152
WAS THEIR A SHORT CIRCUIT TO GROUND (D08)
IN EITHER CABLE?

Y N

153
EXCHANGE THE DISKETTE UNIT DRIVE CONTROL
CARD. SEE MAINTENANCE INFORMATION
MANUAL PARA. A3.14.
NOW PROBE THE +INDEX(B11) LINE ON THE
CABLE TERMINATION CARD. SEE MAINTENANCE
INFORMATION MANUAL PARA. A2.10.
IS IT PULSING?

Y N

154
EXCHANGE THE DISKETTE UNIT ATTACHMENT
CARD.
NOW PROBE THE +INDEX(B11) LINE ON THE
CABLE TERMINATION CARD. SEE
MAINTENANCE INFORMATION MANUAL PARA.
A2.10.
IS IT PULSING?

Y N

155
GO TO DISKETTE UNIT MAP 0171.

IF NO REPAIR,
GO TO MAP 0173, ENTRY POINT A.

156
DISKETTE UNIT ATTACHMENT CARD WAS BAD.

157
DISKETTE UNIT DRIVE CONTROL CARD WAS
BAD.

158
EXCHANGE THE CABLE WITH THE SHORT CIRCUIT.

159
EXCHANGE THE OPEN CABLE.

1
9
A
Q

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MAP 0170-18

M A
8 Q
8

MAP 0170 IPL MAP

MAP 0170-19

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160
WAS HEXADECIMAL '6420' OR '6421' IN MAIN
STORE LOCATION 0000?

Y N

161
HAND LOAD ROUTINE 2.
SEE 'HL' ENTRY POINT, THIS MAP.
RETURN HERE WHEN HAND LOOP IS LOADED.
PRESS RESET KEY.
SET INSTRUCTION STEP AND PRESS START KEY
THREE TIMES. THE LOCAL STORE REGISTER
BITS 0,1,2 CONTAIN THE CONDITION CODE.
IS THE CONDITION CODE '3'?

Y N

162
CHECK PROGRAM AND ATTEMPT IT AGAIN.
IF TEST STILL FAILS GO TO MAP 0070,
ENTRY POINT A.

163
IS LOCATION '0408' BETWEEN HEXADECIMAL
'5F76' AND HEXADECIMAL '6934'?

Y N

164
THIS IS A NOT READY ERROR. GO TO IPL
DISKETTE UNIT ENTRY MAP 0171.

IF NO REPAIR, GO TO DEVICE NOT READY
MAP,
GO TO MAP 0173, ENTRY POINT A.

165
EXCHANGE DISKETTE UNIT ATTACH CARD.
IF TEST STILL FAILS GO TO MAP 0070, ENTRY
POINT A.

166
DID STORAGE LOCATION HEXADECIMAL '000C'
CONTAIN DATA BETWEEN HEXADECIMAL '5F76' AND
'6934'?

Y N

167
THIS IS A NOT READY ERROR. GO TO IPL
DISKETTE UNIT ENTRY MAP 0171.

IF NO REPAIR, GO TO DEVICE NOT READY MAP,
GO TO MAP 0173, ENTRY POINT A.

168
EXCHANGE THE DISKETTE UNIT ATTACHMENT CARD
AND IPL AGAIN. IF SAME CONDITIONS OCCUR
GO TO MAP 0070, ENTRY POINT A.

169
IS THE DISKETTE UNIT THAT WAS IPL'D THE ONLY
ATTACHMENT CARD THAT WAS PLUGGED IN?

Y N

170
GO TO MAP 0070, ENTRY POINT A.

171
EXCHANGE DISKETTE UNIT ATTACHMENT CARD. IF NO
REPAIR,
GO TO MAP 0070, ENTRY POINT A.

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MAP 0170-19

172
(ENTRY POINT HL)

THIS IS THE HAND LOOP ENTRY POINT.

INSERT THE LOOP AS INSTRUCTED AND RETURN TO
MAP AND STEP THAT SENT YOU HERE.

(1) READ DEVICE ID ROUTINE. EXECUTE IN
INSTRUCTION STEP.

THIS ROUTINE WILL READ THE IPL DISKETTE UNIT
DEVICE ID. THIS VALUE SHOULD BE 0106 AND
AFTER RUNNING THE ROUTINE IT SHOULD BE IN
LOCATION 0302. IF AFTER RUNNING, 0302 IS
STILL 'FFFF', THE UNIT DID NOT RESPOND TO THE
COMMAND.

LOCATION VALUE

0000 680C OIO COMMAND
0002 0300
0004 6802 BRANCH TO LOCATION 0
0006 0000

0300 20XX (NOTE 1) READ ID IDCB
0302 FFFF (NOTE 2)

CC=7 ON A CORRECT RESPONSE BY A DEVICE.
CONDITION CODE IS BITS 00, C1 AND C2 IN LOCAL
STORE REGISTER.

NOTE 1

THE D. A. IS PLUGGED IN THE XX POSITION.

NOTE 2

DEVICE ID FOUND HERE AFTER EXECUTE.

NOTE 3

V IS EQUAL TO THE INTERRUPT VECTOR ADDRESS.
TO FIND IT TAKE THE DEVICE ADDRESS AND SHIFT
LEFT ONE BINARY POSITION. INSERT 0 IN THE
RIGHT MOST BINARY POSITION. THEN ADD 0030 TO
THIS RESULT WHICH WILL GIVE YOU THE INTERRUPT
VECTOR ADDRESS.

EXAMPLE: IF DEVICE ADDRESS = 02

DEVICE ADDRESS = 0002 = 000C 0000 0000 0010
SHIFT LEFT ONE BIT POSITION AND GET:
0004 = 0000 0000 0000 0100
ADD BASE ADDRESS 0030 = 0000 0000 0011 0000
VECTOR ADDRESS 0034 = 0000 0000 0011 0100

(2) START DIAGNOSTIC ROUTINE. EXECUTE IN
INSTRUCTION STEP.

A START DIAGNOSTIC COMMAND IS EXECUTED TO THE
DISKETTE LOAD UNIT. THE RESULT IS STORED BY
THE DISKETTE UNIT BY A CYCLE STEAL IN 7
CONSECUTIVE WORDS STARTING AT LOCATION 0400.
THE FIRST TWO WORDS SHOULD BE THE ONE(S)
COMPLEMENT OF EACH OTHER. THE NEXT TWO WORDS
SHOULD ALSO BE THE ONE(S) COMPLEMENT OF EACH
OTHER. THESE 4 WORDS SEE A CHECKSUM TOTAL
SENT BACK BY THE UNIT TO VERIFY HARDWARE
OPERATION IN THE UNIT. THE 5TH WORD IS A
DISKETTE UNIT SPEED NUMBER WHICH SHOULD BE
BETWEEN 5F7C AND 6934. THE 7TH WORD IS THE
RESULT OF A DIAGNOSTIC DATA WRAP TEST. THE
VALUE SHOULD BE 6E00.

LOCATION VAL.

0000 680C OIO COMMAND
0002 0300
0004 680C OIO COMMAND
0006 0304
(STEP 172 CONTINUES)

LOCATION VAL.

0306 0340
0340 2000 START
0342 0000 DIAG.
0344 0000 DCB

```
(STEP 172 CONTINUED)
0008 6100 LVL EXIT          0346 0000
V      V+2 (NOTE 3)        0348 0000
V+2    0004 (NOTE 3)        034A 0000
0300 60XX (NOTE 1) PREP IDCB 034C 000E
0302 0001                                     034E 0400
0304 7DXX (NOTE 1) START IDCB
```

NOTE 1

THE D. A. IS PLUGGED IN THE XX POSITION.

NOTE 2

DEVICE ID FOUND HERE AFTER EXECUTE.

NOTE 3

V IS EQUAL TO THE INTERRUPT VECTOR ADDRESS. TO FIND IT TAKE THE DEVICE ADDRESS AND SHIFT LEFT ONE BINARY POSITION. INSERT 0 IN THE RIGHT MOST BINARY POSITION. THEN ADD 0030 TO THIS RESULT WHICH WILL GIVE YOU THE INTERRUPT VECTOR ADDRESS.

EXAMPLE: IF DEVICE ADDRESS = 02

```
DEVICE ADDRESS = 0002 = 0000 0000 0000 0010
SHIFT LEFT ONE BIT POSITION AND GET:
ADD BASE ADDRESS 0004 = 0000 0000 0000 0100
VECTOR ADDRESS 0034 = 0000 0000 0011 0100
```

 (3) READ SIDE 1 TEST.
 THIS ROUTINE WILL READ A SECTOR ID FROM SIDE 1 OF A TWO SIDED DISKETTE. (NOTE: ONLY A TWO SIDED DISKETTE MAY BE USED.) THIS ROUTINE IS USED TO DETERMINE IF READ ERRORS OCCUR ON HEAD 1 OR HEAD 2 OF THE DISKETTE UNIT.

LOCATION VAL.		LOCATION VAL.	
0000 680C	OIO COMMAND	0334 0000	
0002 0300		0336 0000	
0004 680C	OIO COMMAND	0338 0000	
0006 0304		033A 0000	
0008 4020		033C 0004	
000A V+2	(NOTE 3)	033E 0480	
000C 0010		0340 8005	SEEK
000E 6100	LVL EXIT	0342 0000	DCB
0010 680C	OIO COMMAND	0344 000C	
0012 0308		0346 0000	
0014 4020		0348 0100	
0016 V+2	(NOTE 3)	034A 0350	
0018 0004		034C 0000	
001A 6100	LVL EXIT	034E 0400	
0300 60XX	(NOTE 1) PREP IDCB	0350 200A	READ
0302 0001		0352 0000	SEC.
0304 70XX	(NOTE 1) START IDCB	0354 0000	I.D.
0306 0340		0356 0000	DCB
0308 7FX	(NOTE 1) START CSS	0358 0000	
030A 0330		035A 0000	
0330 2000	CSS DCB	035C 0004	
0332 0000		035E 0450	
V V+2	(NOTE 3)		
V+2 0004	(NOTE 3)		

(3A) READ SIDE 0 TEST.

THIS IS A CHANGE TO ROUTINE 3 TO READ SIDE 0 ONLY. CHANGE THE CONTENTS OF LOCATION 0348 TO 0000.

NOTE 1

THE D. A. IS PLUGGED IN THE XX POSITION.

NOTE 2

DEVICE ID FOUND HERE AFTER EXECUTE.

NOTE 3

V IS EQUAL TO THE INTERRUPT VECTOR ADDRESS. TO FIND IT TAKE THE DEVICE ADDRESS AND SHIFT LEFT ONE BINARY POSITION. INSERT 0 IN THE

(STEP 172 CONTINUES)

(STEP 172 CONTINUED)

RIGHT MOST BINARY POSITION. THEN ADD 0030 TO THIS RESULT WHICH WILL GIVE YOU THE INTERRUPT VECTOR ADDRESS.

EXAMPLE: IF DEVICE ADDRESS = 02

DEVICE ADDRESS = 0002 = 0000 0000 0000 0010
 SHIFT LEFT ONE BIT POSITION AND GET:
 0004 = 0000 0000 0000 0100
 ADD BASE ADDRESS 0030 = 0000 0000 0011 0000
 VECTOR ADDRESS 0034 = 0000 0000 0011 0100

 (4) SEEK TEST. EXECUTE IN RUN MODE.
 THIS ROUTINE WILL SEEK FORWARD TO TRACK 76
 AND THEN DO A RECALIBRATE AND LOOP BACK TO
 THE SEEK.

LOCATION VAL.	LOCATION VAL.
0000 680C OIO COMMAND	0348 0100
0002 0300	034A 0350
0004 680C OIO COMMAND	034C 0000
0006 0304	034E 0000
0008 6100 LVL EXIT	0350 0007 RECAL
0300 60XX (NOTE 1) PREP IDCB	0352 0000 DCB
0302 0001	0354 0000
0304 70XX (NOTE 1) START IDCB	0356 0000
0306 0340	0358 0100
0340 8005 SEEK DCB	035A 0000
0342 004C	035C 0000
0344 0000	035E 0400
0346 0000	

V V+2 (NOTE 3)
 V+2 0004 (NOTE 3)

(4A) SEEK TEST CHANGES. EXECUTE WITH
 INSTRUCTION STEP ON.
 THESE CHANGES CAUSE A SEEK FORWARD OF ONE
 TRACK (SIDE 1 SELECTED) FOR EACH PASS
 THROUGH.

LOCATION VAL.
 0340 0005 SEEK DCB
 0342 0001
 0348 0000

THIS IS END OF HAND LOOP ROUTINES.

IF SENT HERE FROM A STEP OUTSIDE THIS MAP,
 RETURN TO THAT STEP.

IF SENT HERE FROM A STEP IN THIS MAP, RETURN
 TO THAT STEP.

173
 GO TO MAP 0270, ENTRY POINT A.