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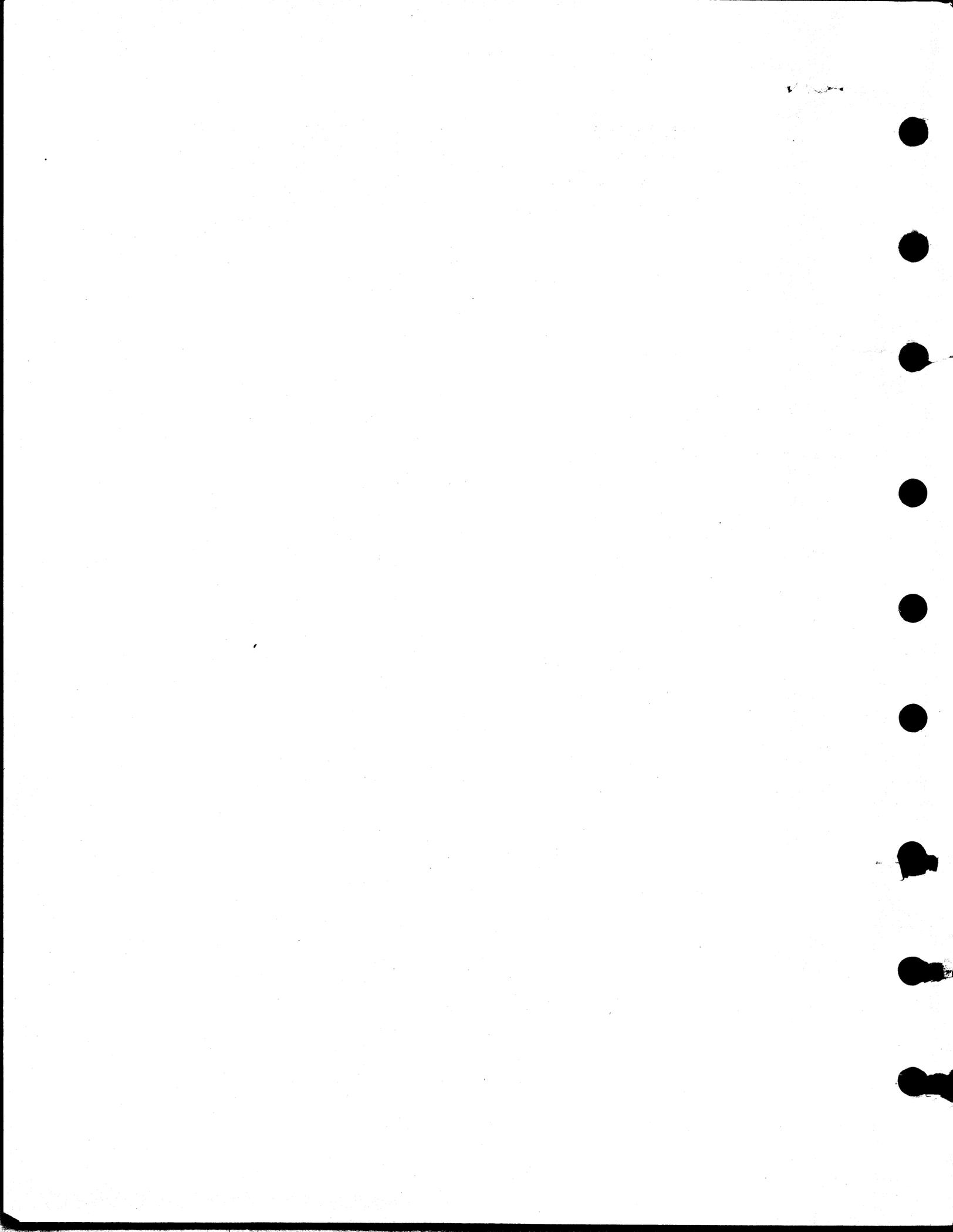
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MAP NUMBER	MDI MAP	HC	MAP TITLE	PART NUMBER
00XX			MISCELLANEOUS	
0000		X	Map Table of Contents	4237434
0011		X	Map Description	4237435
01XX			SYSTEM ENTRY MAPS	
0101		X	First System Entry MAP	4237436
0105		X	Good Machine Path 1	4237437
0107		X	Good Machine Path 2	4237438
0109		X	Good Machine Path 3	4237439
0149		X	CSIPL Failure	4237440
0153		X	CSIPL Fails From Diskette	4237441
0159		X	Wrap Error	4237442
0173		X	CSIPL Tests Failed From Disk	4237443
0175		X	CSIPL Failure	4237444
0179		X	System Entry MAP Diskette	4237446
0181		X	Line Printer	4237447
0183		X	Data Communication	4237448
0184		X	Data Communication (MLCA)	8265989
0190		X	Main Storage Processor	4237449
0199		X	Good Machine Path 4	4237450
03XX			CS AND MS INITIAL PROGRAM LOAD MAPS	
0303		X	CSIPL Not Disk	4237451
0305		X	CSIPL Not Diskette	4237452
0311		X	Initialize Ctrl Storage	4237453
0313		X	CSIPL Ctrl Storage Card Swap	4237454
0315		X	CSIPL MSP Isolation	4237455

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4110		X	Data Bus Wrap Bit 4	4237917
4111		X	Data Bus Wrap Bit 5	4237918
4112		X	Data Bus Wrap Bit 6	4237919
4113		X	Data Bus Wrap Bit 7	4237920
4114		X	Data Bus Wrap Bit P	4237921
4115		X	Data Bus Wrap Multi Bit Failure	4237922
4118		X	Controller SAR, IAR	4237923
4122		X	REG/AUX Reg Selection	4237924
4125		X	Controller ALU Zero Ind	4237925
4126		X	Controller ALU Non-Zero Ind	4237926
4127		X	Controller ALU Carry Ind	4237927
4131		X	Controller Is Stopped	4237928
4132		X	Transit Routing Field Valid	4237929
4133		X	Account Number Field Valid	4237930
4134		X	I-0 Ready	4237931
4135		X	External I-0 Light	4237932
4136		X	Read Call	4237933
4137		X	Document Under Read Head	4237934
4138		X	Document To Be Read	4237935
4139		X	Engage	4237936
4140		X	Field Seven Valid	4237937
4141		X	Disengage	4237938
4142		X	Auto Select	4237939
4143		X	Serial Number Field Valid	4237940
4144		X	Service Response	4237941
4145		X	Amount Field Valid	4237942
4146		X	Process Control Field Valid	4237943
4147		X	I-0 Disconnect	4237944
4148		X	Allow Service Request	4237945
4149		X	1255 Data Bit 5	4237946
4150		X	1255 Data Bit 6	4237947
4151		X	1255 Data Bit 7	4237948
4152		X	End Transmission	4237949
4153		X	Service Request	4237950
4154		X	1255 Data Parity Bit	4237951
4155		X	1255 Data Bit 0	4237952
4156		X	1255 Data Bit 1	4237953
4157		X	1255 Data Bit 2	4237954
4158		X	1255 Data Bit 3	4237955
4159		X	Sorter Is Stopped	4237956
4160		X	Field 6 Valid	4237957
4161		X	1255 Data Bit 4	4237958
4162		X	Stacker 0 Bit	4237959
4163		X	Stacker 1 Bit	4237960

```
 MAP   |MDI|
NUMBER|MAP|MAP DESCRIPTION
------+---+-----------------------------------------------
 01XX |   |SYSTEM ENTRY MAPs
      |   |
 0101 |   |  This MAP supplies a shortcut to other MAPs based on
      |   |  the major system indicators.
      |   |
 0105 |   |  This MAP is part of the good machine path through the
      |   |  System Entry MAPs. It does a CE panel checkout,
      |   |  checks the load and stop keys, CSIPL's from the disk
      |   |  (Loading SSP), and reviews the status of the machine
      |   |  after the CSIPL sequence completes.
      |   |
 0107 |   |  This MAP is part of the good machine path through the
      |   |  System Entry MAPs. It attempts to CSIPL from the
      |   |  diskette and print the console menu on the printer if
      |   |  this system has a printer.
      |   |
 0109 |   |  This MAP is part of the good machine path for the
      |   |  machine. It checks the two devices that were not
      |   |  used in the good machine path to this point, which are
      |   |  data communications and 1255 MICR. It also loads SSP
      |   |  and requests the CE to interpret the error logs to
      |   |  aid in determining the problem.
      |   |
 0149 |   |  This MAP attempts to sort out the reason the
      |   |  machine failed during CSIPL. It uses the indicators
      |   |  shown in NOTE 1.
      |   |
 0153 |   |  This MAP instructs the CE to run the MDI tests for
      |   |  the diskette.
      |   |
 0159 |   |  This is a Wrap Error MAP.
      |   |
 0173 |   |  This MAP attempts to sort out the reason the
      |   |  machine failed during CSIPL.
      |   |
 0175 |   |  This MAP runs some of the device MDI MAPs to
      |   |  isolate the reason the machine failed during CSIPL.
      |   |
 0179 |   |  This MAP instructs the CE to run the MDI tests for
      |   |  the diskette.
      |   |
```

0181 | | This MAP instructs the CE to do some preparatory checks on the printer and to run the MDI tests for the printer.

0183 | | This MAP instructs the CE to run the MDI tests for the data communications.

0184 | | This MAP instructs the CE to run the MDI tests for the data communications (MLCA).

0190 | | This MAP instructs the CE to run the MSP tests.

0199 | | This MAP supplies a MAP index to run all the MDI MAPs in the system. It also has a laundry list of other diagnostic tests that can be run to aid in isolating system problems.

03XX | | CONTROL AND MAIN STORAGE PROCESSOR MAPs

0303 | | This MAP determines the CSIPL problem (Load light stays on) when CSIPL completes normally from the diskette but not from the disk.

0305 | | This MAP determines the CSIPL problem (Load light stays on) when CSIPL completes normally from the disk but not from the diskette.

0311 | | This MAP initializes control storage with X'FFFF' and X'0000' using the CE panel.

0313 | | This MAP swaps control storage cards with main storage cards attempting to find a bad control storage card.

0315 | | This MAP determines if the MSP is causing a CSIPL problem.

0321 | | This MAP isolates the attachments from the CP to determine if they are causing the CSIPL problem. NOTE: This MAP requires nine jumpers.

0323 | | This MAP isolates which I/O attachment is causing the CSIPL problem.

0331 | | This MAP determines if the MSP is causing a CSIPL

problem.

0341 This MAP exchanges control storage cards with main storage cards attempting to find a bad control storage card.

0351 This MAP isolates the CE panel from the CP to check if the CP and its associated cables are causing the CSIPL problem.

05XX POWER MAPs

0500 This MAP determines the general type of power failure and sends the CE to the correct MAP.

0501 This MAP determines the cause of the control supply status indicators not on.

0502 This MAP checks fuses, CB1 and other causes of a dead machine.

0510 This MAP records power fault information and sends the CE to each Power MAP.

0511 This MAP determines the type of problem and sends the CE to the correct power section.

0512 This MAP determines if the cause of the failure is in the AC box, controller, or supplies.

0513 This MAP locates the source of bad information after the logic has been reset.

0514 This MAP determines if the cause of the failure is in the AC box, controller, or supply.

0515 This MAP records power fault information and sends the CE to a suitable Power MAP.

0516 This MAP determines if the cause of the failure is in the AC box, controller, or supply.

0517 This MAP records UV power fault information for the base regulator levels and sends the CE to a suitable

		Power MAP.
0518		This MAP records UV power fault information for the base levels and sends the CE to a suitable Power MAP.
0519		This MAP verifies a short in the load.
0520		This MAP isolates a short in the load.
0521		This MAP leads to the failing FRU (inside the AC box) that caused the dead machine (part 1).
0522		This MAP leads to the failing FRU (inside the AC box) that caused the all levels UV indication on the CE panel.
0523		This MAP leads to the failing FRU (inside the AC box) that caused the no AC to disks symptom.
0524		This MAP leads to the failing FRU that caused the no AC to diskette, power fan and gate fan symptom.
0525		This MAP leads you to the failing FRU that caused the all levels UV indication on the CE panel on system.
0526		This MAP leads to the failing FRU (inside the AC box) that does not permit the machine to power off.
0527		This MAP leads the CE to the failing FRU (inside or on the AC box) that caused a Feature A all levels UV indication on the CE panel.
0528		This MAP leads the CE to the failing FRU (inside or on the AC box) that caused a Feature B all levels UV indication on the CE panel.
0529		This MAP leads the CE to the failing FRU (inside or on the AC box) that caused a Feature C UV indication on the CE panel.
0530		This MAP guides the CE to the failing FRU (inside or on the AC box) that caused a Feature D UV indication on the CE panel.

0531 This MAP leads you to the failing FRU that caused the following symptom: While the IPO switch is on and the base ferroresonant transformer is disconnected from TB1, fuse F301 blows.

0532 This MAP leads you to the failing FRU that caused the following symptom: CB1 trips when the Power switch is set to 1 unless the IPO switch is set to 0.

0533 This MAP leads to the failing FRU (inside the AC box) that caused the following symptom: The 24 Vdc fuse on the control supply blows. No short was found in the control supply and the cable connecting the relays K1 and K2 inside the AC box with the control supply.

0534 This MAP leads you to the failing FRU (inside the AC box) that caused the power outage.

0535 This MAP leads to the failing FRU (inside the AC box) that caused the dead machine (part 2).

0536 This MAP leads the CE to the failing FRU (inside the AC box) that caused the dead machine (part 3).

0540 This MAP locates a failing FRU in the base DC power section or exit to the protection MAP.

0541 This MAP locates a failing FRU in the base DC power section or goes to a protection MAP if no fault exists.

0542 This MAP locates a failing FRU in the base DC power section when fuse F301 is bad.

0543 This MAP locates a failing FRU in the base DC power section or goes to the protection MAP if no fault exists.

0544 This MAP locates a failing FRU in the base DC power section (Base +24V level UV) or goes to the protection MAP if no fault exists.

0545　This MAP locates a failing FRU in the base DC power section (Base -24V level UV) or goes to the protection MAP if no fault exists.

0546　This MAP locates a failing FRU in the base DC power section (Base +8.5V level UV) or goes to the protection MAP if no fault exists.

0547　This MAP locates a failing FRU in the base DC power section (Base +6V level UV) or goes to the protection MAP if no fault exists.

0548　This MAP locates a failing FRU in the base DC power section (Base -5V level UV) or goes to the protection MAP if no fault exists.

0549　This MAP locates a failing FRU in the base DC power section (Base -4V level UV) or goes to the protection MAP if no fault exists.

0550　This MAP will locate a failing FRU in the base DC power section for (multiple base OV or UV).

0551　This MAP locates a failing FRU in the base DC power section (Base +5V level OV) or goes to the the protection MAP if no fault exists.

0552　This MAP locates a failing FRU in the base DC power section (Base +6V level OV) or goes to the protection MAP if no fault exists.

0553　This MAP locates a failing FRU in the base DC power section (Base -5V level OV) or goes to the protection MAP if no fault exists.

0554　This MAP locates a failing FRU in the base DC power section (Base -4V level OV) or goes to the protection MAP if no fault exist.

0555　This MAP determines if the cause of the failure is in the AC box, controller, or supply.

0556　This MAP locates the failing FRU that causes the

		Feature C OV.
0557		This MAP determines the cause of an OC power check.
0558		This MAP determines if the cause of the failure is in the AC box, the controller, or the supply.
0559		This MAP locates the failing FRU that causes the OV error.
0560		This MAP determines the cause of an OC power check.
0561		This MAP isolates a short circuit in the load.
0562		This MAP locates a failing FRU for feature power supply B (+5V level OV) or goes to the protection MAP if no fault exists.
0563		This MAP locates a failing FRU for feature power supply A (all levels UV) or goes to the protection MAP if no fault exists.
0564		This MAP locates a failing FRU for feature power supply B (+5V level UV) or goes to the protection MAP if no fault exists.
0565		This MAP locates a failing FRU for feature power supply A (+12V level UV) or goes to the protection MAP if no fault exists.
0566		This MAP locates a failing FRU for feature power supply A (-12V level UV) or goes to the protection MAP if no fault exists.
0567		This MAP locates a failing FRU for feature power supply A (-12V level OV) or goes to the protection MAP if no fault exists.
0568		This MAP determines if the board or card C-A1C4 is bad
0569		This MAP verifies that the sense card C-A1C4 is missing or repairs the problem.
0570		This MAP verifies that the sense card C-A1C5 is

missing or repairs the problem.

0571 This MAP determines the cause of the control supply
status indicator not working when Lamp test is
pressed.

0572 This MAP isolates the cause of a bad fuse.

0573 This MAP determines the cause of a previous display
failure.

0574 This MAP checks the contactor control line for an open
before assuming the module is bad.

0575 This MAP checks for a connection to a working switch.

0576 This MAP checks the power on reset to card C-A1B2,
then checks for a connection to a working switch.

0577 This MAP checks for a short circuit.

0578 This MAP checks the lamp test circuit.

0579 This MAP checks the printer power signal line between
the cards on the power logic board to determine which
card is bad.

0580 This MAP traces the voltage sense lines to the power
logic board.

0581 This MAP verifies that the cables are connected or
repairs the problem.

0582 This MAP verifies the thermal sensor.

0583 This MAP checks the drive circuit for the K2 relay.

0584 This MAP tests for a failing lamp test switch or lamp
circuit.

0585 This MAP determines if the cause of the failure is in
the cable to Feature Power Supply C or in the supply.

0586 This MAP determines if the cause of the failure is in

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          |   |   the cable to Feature Power Supply D or in the supply.
          |   |
  0590    |   |   This MAP guides the CE to the failing FRU (inside or
          |   |   on the feature AC box) that caused a feature G UV
          |   |   indication on the CE panel.
          |   |
  0591    |   |   This MAP determines if the cause of the failure is in
          |   |   the AC box, the controller, or the supply.
          |   |
  0592    |   |   This MAP locates the failing FRU that causes the OV
          |   |   error.
          |   |
  0593    |   |   This MAP determines the cause of an OC power check.
          |   |
  0594    |   |   This MAP determines if the cause of the failure is in
          |   |   the cable to feature power G or in the supply.
          |   |
  0595    |   |   This MAP checks the drive circuit for relay K4.
          |   |
  07XX    |   |5211 PRINTER MAPs
          |   |
  0700    |   |   This is the printer error symptom MAP. It goes to the
          |   |   correct MAP for the symptom indicated.
          |   |
  0701    |   |   This is a printer entry MAP. This MAP aids in
          |   |   determining the correct action to take in diagnosing
          |   |   the printer and printer attachment.
          |   |
  0705    |   |   This is a print quality analysis MAP.
          |   |
  0707    |   |   This MAP aids you in determining the cause of the
          |   |   printer power problems.
          |   |
  0709    |   |   This is the entry to the work station MDI diagnostics.
          |   |
  0711    | X |   Printer adapter good machine path. This MAP tests the
          |   |   System/Adapter interface. This MAP also finds the
          |   |   failing FRU or goes to another MAP if necessary.
          |   |
  0713    | X |   Printer adapter good machine path. This MAP tests a
          |   |   portion of printer controller card A-A2S2. It
          |   |   includes all the storage addressing and data wrap
          |   |   tests. It finds the failing FRU or goes to
          |   |   another MAP if necessary.
```

0715 | X | Printer adapter good machine path. This MAP tests the remaining portion of the printer controller card A-A2S2. This MAP finds the failing FRU or goes to another MAP if necessary.

0717 | X | Printer adapter good machine path. This MAP performs a software lamp test for the 5211 Printer unit console. This MAP does not include a test for the printer unit power on indicator. If you suspect a problem in this area, go to Hardmap 0707, Entry Point A.

0719 | X | Printer adapter good machine path. This MAP will test all the various printer control registers on the adapter card A-A2T2 and will test the remaining printer interface lines. It also finds the failing FRU or goes to the correct printer box MAP if necessary.

0720 | X | Printer adapter good machine path. This MAP will test all the various printer control registers on the adapter card A-A2T2 and will test the remaining printer interface lines. It also finds the failing FRU or goes to the correct printer box MAP if necessary.

0721 | X | Printer adapter good machine path. This MAP finds the failing FRU or goes to the printer box MAP if necessary.

0723 | X | This MAP is the throat interlock/end of forms switch MAP.

0725 | X | Printer adapter good machine path. This MAP finds the failing FRU or goes to the 5211 printer entry MAP if necessary.

0731 | X | This MAP will decode the error status as it is returned to the diagnostic function test being run. This is the same status that is reported to the system and recorded in the error log. The error MAPs and descriptions should be used to diagnose the error.

0732 | X | This MAP will decode the error status as it is

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        |   |  returned to the diagnostic function test being run.
        |   |  This is the same status that is reported to the system
        |   |  and recorded in the error log. The error MAPs and
        |   |  descriptions should be used to diagnose the
        |   |  error.
        |   |
0733    | X |  There is a failure in the printer data interface.
        |   |  This MAP determines if the problem exists in the
        |   |  printer interface or the printer I/O controller.
        |   |
0735    | X |  There is a failure in the printer console interface.
        |   |  This MAP identifies the failing line or FRU.
        |   |
0740    |   |  This is the printer console light error MAP. This MAP
        |   |  finds the failing FRU or, if necessary, goes to the
        |   |  5211 line printer entry MAP.
        |   |
0741    | X |  There is a failure in the printer/adapter interface.
        |   |  This MAP identifies the failing interface line and
        |   |  goes to a MAP which isolates the error to one of the
        |   |  following:
        |   |  1. Printer adapter card.
        |   |  2. Printer cables (system or interface).
        |   |  3. Printer unit.
        |   |
0742    |   |  This is the printer console switch error MAP. This MAP
        |   |  finds the failing FRU or goes to the correct printer
        |   |  box MAP if necessary.
        |   |
0743    | X |  There is a failure in the printer/adapter interface.
        |   |  This MAP identifies the failing line and FRU.
        |   |
0744    |   |  This is a printer control switch error MAP. This MAP
        |   |  finds the failing FRU or goes to the 5211 line
        |   |  printer entry MAP.
        |   |
0745    | X |  There is a failure in the printer/adapter interface.
        |   |  This MAP identifies the failing line or FRU.
        |   |
0746    |   |  Printer CTL wrap error MAP. This MAP finds the failing
        |   |  FRU or if necessary, goes to the 5211 line printer
        |   |  entry MAP.
        |   |
0747    | X |  There is a failure in the printer console interface.
```

		This MAP identifies the failing line or FRU.
0748		Printer belt up to speed ribbon check and printer busy error test MAP. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0749	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0750		Printer data parity check and power problem MAP. This MAP finds the failing FRU, or if necessary, goes to the 5211 line printer entry MAP.
0755	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0757	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0760		This is the printer adapter hard copy entry MAP. It will indicate the correct diagnostic procedure to use in the event concurrent maintenance is being used or dedicated maintenance is being used.
0761	X	There is a failure in the printer console interface. This MAP identifies the failing line or FRU.
0762		This is the fire tier (1-5) and belt interface wrap error MAP. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0763	X	There is a failure in the printer console interface. This MAP identifies the failing line or FRU.
0764		This is the printer carriage advance test. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0767	X	There is a failure in the printer console carriage interface. This MAP identifies the failing line or FRU.
0770		This is the print data bit (0-7,P) wrap error MAP.

			This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0771	X		There is a failure in the printer/adapter interface. This MAP will identify the failing interface line and exit to a MAP which isolates the error to one of the following: 1. Printer adapter card. 2. Printer cables (system or interface). 3. Printer unit.
0772			This is the printer forms jam test MAP. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0774			This is the printer hammer echo return test MAP. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0776			This is the printer reset test MAP. This MAP finds the failing FRU or, if necessary, goes to the 5211 line printer entry MAP.
0778			This MAP is the hammer sample test MAP. This MAP finds the failing FRU, or if necessary, goes to the 5211 line printer entry MAP.
0780			This is the Cable Interlock MAP. This MAP aids you in locating the cause of a cable interlock problem between the line printer and the attachment.
0782			This MAP will call for the failing hammer test to be run in TU select mode. It will display on the console, the number of the failing hammers in result byte 1 and the first failing hammers in result byte 2. The numbers will be displayed in hex.
08XX			3262 PRINTER MAPs
0800			This is the printer error symptom MAP. It goes to the correct MAP for the symptom indicated.
0801			This is the printer entry MAP. This MAP aids in determining the correct action to take in diagnosing

failures in the printer and the printer attachment.

0802   This MAP will determine if the print transport mechanism is operating properly. It will also analyze the print qulaity of the output.

0804   This MAP aids you in determining the cause of the printer power problems.

0806   This is the printer controller MAP. It will find the failing FRU by swapping the work station controller card (A-A2N2) and the printer controller card (A-A2S2) if they are the same part number.

0808   This is the printer console light error MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0810   This is the printer console key error MAP. This MAP finds the failing FRU or goes to the correct printer box MAP if necessary.

0812   This is the printer control switch error MAP. This MAP finds the failing FRU or goes to the 3262 line printer entry MAP.

0814   This is the printer cltwrap error MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0816   This is the printer belt up to speed, ribbon check and printer busy error test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0818   This is the printer data parity check and power problem MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0820   This is the printer adapter hard copy entry MAP. It will indicate the correct diagnostic procedure to use in the event concurrent maintenance is being used or dedicated maintenance is being used.

0822 | | This MAP is the fire tier (1-5) and belt interface wrap error Map. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0824 | | This is the printer carriage advance test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0826 | | This is the data bit (0-7) and parity bit wrap error MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0828 | | This is the printer forms jam test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0830 | | This is the printer hammer echo return test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0832 | | This is the printer reset test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0834 | | This is the hammer sample test MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0836 | | This is the cable interlock MAP. This MAP aids you in locating the cause of a cable interlock problem between the line printer and the attachment.

0840 | | This MAP tests the possibility that one of three interface lines -hammer echo return, +power on reset or -close contactor is open. If necessary it will go to the 3262 line printer entry MAP.

0842 | | This is the thermal check and carriage pedestal check MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 line printer entry MAP.

0851 | X | Printer adapter good machine path. This MAP tests the system/adapter interface. This MAP also finds the failing FRU or goes to another MAP if necessary.

0853	X	Printer adapter good machine path. This MAP tests a portion of printer controller card A-A2S2. It includes all the storage addressing and data wrap tests.
0855	X	Printer adapter good machine path. This MAP tests the remaining portion of printer controller card A-A2S2. This MAP finds the failing FRU or goes to another MAP if necessary.
0857	X	Printer adapter good machine path. This MAP performs a software lamp test for the 3262 printer unit console. This MAP does not include a test for the printer unit power on indicator. If you suspect a problem in this area, go to HARDMAP 0804, Entry Point A.
0859	X	Printer adapter good machine path. This MAP will test all the various printer control registers on the adapter card A-A2T2 and will test the remaining printer interface lines. It also finds the failing FRU or goes to the correct printer box MAP if necessary.
0861	X	Printer adapter good machine path. This MAP will test all the various printer control registers on the adapter card A-A2T2 and will test the remaining printer interface lines. It also finds the failing FRU or goes to the correct printer box MAP if necessary.
0863	X	Printer adapter good machine path. This MAP runs the following printer functions: hammer matrix print test, H pattern print test, T pattern print test and carriage space/skip test. If an error occurs, it will be displayed on the screen along with the corrective action to take.
0865	X	This MAP is the throat interlock/end of forms switch MAP.
0867	X	Printer adapter good machine path. This MAP finds the failing FRU or goes to the 3262 printer entry MAP if necessary.
0869	X	This MAP will decode the error status as it is returned to the diagnostic function test being run.

		This is the same status that is reported to the system and recorded in the error log. The error MAPs and descriptions should be used to diagnose the error.
0871	X	This MAP will decode the error status as it is returned to the diagnostic function test being run. This is the same status that is reported to the system and recorded in the error log. The error MAPs and descriptions should be used to diagnose the error.
0873	X	Printer adapter good machine path. This MAP tests a portion of the state processor card A-A2U2. It finds the failing FRU or goes to another MAP if necessary.
0875	X	There is a failure in the printer console interface. This MAP identifies the failing line or FRU.
0877	X	There is a failure in the printer/adapter interface. This MAP identifies the failing interface line and goes to a MAP which isolates the error to one of the following: printer adapter card, printer cables (system or interface) or printer unit.
0879	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0881	X	There ia s failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0883	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0885	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0887	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0889	X	There is a failure in the printer/adapter interface. This MAP identifies the failing line or FRU.
0895	X	There is a failure in the printer carriage interface. This MAP identifies the failing line or FRU.

0897	X	There is a failure in the printer/adapter interface. This MAP will identify the failing interface line and exit to a MAP which isolates the error to one of the following: printer adapter card, printer cables (system or interface) or printer unit.
09XX		DISK MAPs (62EH)
0900		This MAP instructs the CE to run the MDI tests for the disk.
0901	X	This MAP runs diagnostics on the 62EH disk drive.
0902	X	This MAP continues running the diagnostics on the 62EH disk drive.
0904	X	Disk first command check out.
0905	X	Disk first command check out and buffer register test.
0910	X	This MAP checks for a brake failure on the disk drive motor.
0915	X	This MAP checks that the disk is turning at the correct speed.
0918	X	Check the interface between the disk and the attachment cards.
0919	X	This MAP checks out the disk too fast condition.
0922	X	This MAP checks the disk status with power on delay action.
0923	X	This MAP checks the disk status at kick single shot time.
0924	X	This MAP checks the status of the disk between kick single shot and before home is expected.
0925	X	This MAP checks the status of the disk when the arm is at the home and ready position.
0926	X	This MAP checks that the access arm recalibrates.

0928	X	This MAP runs the recalibrate and seek tests for the access arm on the disk.
0932	X	This MAP runs the digital to analog convert test on the disk.
0934	X	This MAP checks the disk file interface commands.
0936	X	This MAP checks the disk file operations commands.
0937	X	This MAP checks the disk set/reset and interrupt timeout.
0938	X	This MAP checks the disk sector and index.
0939	X	This MAP checks the data operation end interrupt and the sector and index timeout interrupts.
0940	X	This MAP checks for unsafes and attachment equipment checks.
0941	X	This MAP checks the disk read functions.
0943	X	This MAP checks for a write unsafe condition on the disk.
0950	X	This is the disk clock step MAP. This MAP checks the read ID and write ID commands, the read data and write data commands and the read verify command.
0955	X	This is the disk seek check out MAP.
0965	X	This MAP checks the disk for read/write checks.
0966	X	This MAP checks the disk for read checks.
0967	X	This MAP loops on test units TAB01-TA031, TA003-TA00B, TA034, TA036, TA030, TA037, and TA052 until an error occurs or the Attn key is pressed. If an intermittent error occurs during the testing, the suspected cards are called out, and the error bytes are displayed part 1.

0970 | | | Disk drive A is not ready at check point No. 2.

0971 | | | Disk drive A DE cable continuity checks.

0974 | | | Disk drive A read/write HARDMAPs.

0975 | | | Disk drive A data unsafe MAP.

0980 | X | This MAP contains the definitions of the bytes turned on during the disk intermittent failure tests and calls out the possible bad cards that can cause the failure part 2.

0981 | X | This MAP describes the bits that are turned on in the status bytes when there is an intermittent MAP failure and calls out those cards that are most probable to cause the failure part 3.

0982 | X | This MAP gives the byte definition of the bytes that are turned on during an intermittent failure and calls out the most probable card failure.

0983 | X | This MAP contains the definitions of the bytes that are turned on during the disk intermittent failure tests and calls out the possible bad cards that can cause the failure part 4.

0984 | X | This MAP contains the definitions of the bytes turned on during the disk intermittent failure tests and calls out the possible bad cards that can cause the failure part 5.

0985 | | | Disk drive A cable MAP.

0986 | X | This MAP contains the definitions of the bytes that are turned on during the disk intermittent failure tests and calls out the possible bad cards that can cause the failure part 6.

0987 | X | This MAP contains the definitions of the bytes that are turned on during the disk intermittent failure tests and calls out the possible bad cards that can cause the failure part 7.

0990 | | Disk drive A voltage check MAP. This MAP checks the disk voltages on the A drive.

0991 | | Check disk drive A status at kick single shot time.

0992 | | Disk drive B DE cable continuity checks.

0993 | | Disk drive B is not ready at check point No. 2.

0994 | | Check disk drive B status at kick single shot time.

0995 | | Disk drive B data unsafe MAP.

0997 | | Disk drive B read/write HARDMAPs.

0998 | | Disk drive B voltage check MAP. This MAP checks the disk voltages on the B drive.

0999 | | Disk drive B cable MAP.

10XX | |DISK MAPs (62PC)

1000 | | This MAP instructs the CE to run the MDI tests for the disk.

1001 | X | This the starting point of the 62PC disk MAPs. This MAP tests the 62PC channel adapter.

1003 | | This MAP isolates the failing FRU from errors found in MAP 1001.

1005 | X | This MAP isolates channel adapter card failures.

1007 | X | This MAP tests the interface lines between the channel adapter and common adapter.

1009 | | This MAP isolates the failing FRU from errors found in MAP 1007.

1011 | | This MAP isolates the FRU that caused a cycle failure in MAP 1007.

1012 | X | Test the results from MAP 1015 to determine the failing FRU.

1013		This MAP isolates disk problems that affect CSIPL.
1014	X	This MAP isolates errors from other MAPs.
1015	X	This MAP test the common adapter for correct operation.
1016	X	This MAP isolates a common adapter failure from the disk drives.
1017	X	Analyzes the results from MAP 1015 to determine the failing FRU.
1018	X	Analyzes the results from MAP 1015 to determine the failing FRU.
1019	X	Analyzes the results from MAP 1015 to determine the failing FRU.
1020		This MAP isolates failures that prevent the disk drive from rotating or cause the rotational speed to go out of tolerance.
1021		This MAP isolates failures causing no communication between the disk and the common adapter.
1022		This MAP isolates data unsafe problems caused by sample servo failures.
1024		This MAP isolates the disk power supply problems.
1025		This MAP is a FRU Isolation MAP.
1026		This MAP is a FRU Isolation MAP.
1027		This MAP is a FRU Isolation MAP.
1028		This MAP is a FRU Isolation MAP.
1029		This MAP is a FRU Isolation MAP.
1030		This MAP isolates failures that prevent the disk drive from turning or cause the rotational speed to go out

			of tolerance.
1031			This MAP isolates failures causing no communication between the disk and the common adapter. of tolerance.
1032			This MAP isolates data unsafe problems caused by sample servo failures.
1034			This MAP isolates disk power supply problems.
1035			This MAP is a FRU Isolation MAP.
1036			This MAP is a FRU Isolation MAP.
1037			This MAP is a FRU Isolation MAP.
1038			This MAP is a FRU Isolation MAP.
1039			This MAP is a FRU Isolation MAP.
1040	X		This is the first part of the good machine path MAP for the 62PC disk drive.
1041	X		This is the second part of the good machine path MAP for the 62PC disk drive.
1042	X		This is the third part of the good machine path MAP for the 62PC disk drive.
1044	X		This MAP is a disk drive FRU isolation MAP.
1045	X		This MAP is a disk drive FRU isolation MAP.
1046	X		This MAP is a disk drive FRU isolation MAP.
1047	X		This MAP is a disk drive FRU isolation MAP.
1048	X		This MAP is a disk drive FRU isolation MAP.
1049	X		This MAP is a disk drive FRU isolation MAP.
1050	X		This MAP is a disk drive FRU isolation MAP.

1051 | X | This MAP is a disk drive FRU isolation MAP.

1052 | X | This MAP is a disk drive FRU isolation MAP.

1053 | X | This MAP is a disk drive FRU isolation MAP.

1054 | X | This MAP is a disk drive FRU isolation MAP.

1055 | X | This MAP is a disk drive FRU isolation MAP.

1056 | X | This MAP is a disk drive FRU isolation MAP.

1057 | X | This MAP is a disk drive FRU isolation MAP.

1058 | X | This MAP runs tests to find intermittent disk
problems.

1060 | X | This MAP is a FRU isolation Map with probing.

1061 | X | This MAP is a FRU isolation MAP with probing.

1062 | X | This MAP is a FRU isolation MAP with probing.

1063 | X | This MAP is a FRU isolation MAP with probing.

1064 | X | This MAP is a FRU isolation MAP with probing.

1065 | X | This MAP is a FRU isolation MAP with probing.

1066 | X | This MAP is a FRU isolation MAP with probing.

1067 | X | This MAP is A FRU isolation MAP with probing.

1068 | X | This MAP isolates the failures causing the wrong
diagnostic sense or warp errors during the disk
good machine path MAP.

1069 | X | The MAP isolates the failures causing the wrong
diagnostic sense or warp errors during the disk good
machine path MAP.

1070 | X | FRU isolation for seek failures.

1071 | X | FRU isolation for seek failures.

1072	X	This MAP analyzes the sense bits from ERAP or MAP 1058 to determine the failing FRU.
1073	X	This MAP analyzes the sense bytes from ERAP or MAP 1058 to determine the failing FRU.
1074	X	This MAP analyzes the sense bytes from ERAP or MAP 1058 to determine the failing FRU.
1076		This MAP isolates disk cable continuity failures. disk.
1077		This MAP contains a list of the disk drive nets.
1080		This MAP isolates failures that prevent the disk drive from rotating or cause the rotation speed to go out of tolerance.
1081		This MAP isolates failures causing no communication between the disk and the disk common adapter.
1082		This MAP isolates data unsafe problems caused by sample servo failures.
1083		This MAP isolates errors on the disk drive bus cable interface.
1084		This MAP isolates disk power supply problems.
1085		This MAP is a FRU isolation MAP.
1086		This MAP is a FRU isolation MAP.
1087		This MAP is a FRU isolation MAP.
1088		This MAP is a FRU isolation MAP.
1089		This MAP is a FRU isolation MAP.
1090		This MAP isolates failures that prevent the disk drive from turning or cause the rotational speed to go out of tolerance.

1091			This MAP isolates failures causing no communications between the disk and the disk common adapter.
1092			This MAP isolates data unsafe problems caused by sample servo failures.
1094			This MAP isolates disk power supply problems.
1095			This MAP is a FRU isolation MAP.
1096			This MAP is a FRU isolation MAP.
1097			This MAP is a FRU isolation MAP.
1098			This MAP is a FRU isolation MAP.
1099			This MAP is a FRU isolation MAP.
11XX			WORK STATION MAPs
1101	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.
1103	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide, 99-064.
1105	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.
1107	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.
1109	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.
1111	X		This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1113 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1115 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1116 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1117 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1121 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1122 | | This MAP isolates the failure of the adapter reset function to either the controller card or the attachment card. All lines except one, the controller error, have already been eliminated.

1125 | | This MAP isolates the failure of the controller load latch to either the A-A2M2 card (work station attachment) or the A-A2N2 card (work station controller).

1127 | | This MAP isolates the failure of the single cycle latch to either the A-A2M2 card (work station attachment) or the A-A2N2 card (work station controller).

1129 | | This MAP isolates the failure of the controller reset latch to either the A-A2M2 card (work station attachment) or the A-A2N2 card (work station controller).

1130 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1131 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1132 | | A single bit failure has been found in the work station controller's data bus (bit 0).

1133 | | A single bit failure has been discovered in the work station controller's data bus (bit 1).

1134 | | A single bit failure has been found in the work station controller's data bus (bit 2).

1135 | | A single bit failure has been found in the work station controller's data bus (bit 3).

1136 | | A single bit failure has been found in the work station controller's data bus (bit 4).

1137 | | A single bit failure has been found in the work station controller's data bus (bit 5).

1138 | | A single bit failure has been found in the work station controller's data bus (bit 6).

1139 | | A single bit failure has been found in the work station controller's data bus (bit 7).

1140 | | A single bit failure has been found in the work station controller's data bus (bit P).

1141 | | The data bus wrap has failed with more than one bit stuck on or off.

1143 | | The interrupt level 4 micro interrupt request has failed. The general procedure is to isolate the failure to one of the cards that use it. The cards are:
   A-A2M2 card (work station attachment)
   A-A1L2 card (command processor multiplex port 0)
   A-A2S2 card (5211 attachment)

1145 | | A wrap of the work station controller's storage address register has failed.

1147 | The controller is failing to run with a microprogram loaded into it. The probable failure is the A-A2N2 card (work station controller), but other possibilities are:
A-A2M2 card (work station attachment)
A-A2P4 card (base storage)
A-A2Q4 card (expanded storage)
A-A2R4 card (feature storage card if installed).

1149 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1160 | X | This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special TU select described in the Diagnostic Service Guide 99-064.

1161 | The console has failed to respond to a poll command from the work station controller.

1162 | The synchronization between the work station controller and the serializer/deserializer has failed.

1163 | The work station controller has sensed bad parity or a transmission from the terminal in response to a poll.

1164 | The work station controller has sensed a multiple frame response to a poll when the terminal should be reset.

1180 | This MAP supplies you with the information necessary to run and interpret the local network analysis program (COC1). This program is designed to present you with the status of the network as it is, and to permit you to compare this with your knowledge of the way it should be. Because there is no way for the MAP writer to know your specific terminal configuration , your knowledge and interpretation of results are the primary ingredients of this MAP.

1181 | The MAP tests cable 0 for opens, shorts and reversal of leads in cable D-A0 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is

terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohm per 1000 feet. The lead to shield resistance is 14 ohm per 1000 feet.

1182 The MAP tests cable 1 for opens, shorts and reversal of leads in cable D-A1 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohm per 1000 feet. The lead to shield resistance is 14 ohm per 1000 feet.

1183 The MAP tests cable 2 for opens, shorts and reversal of leads in cable D-A2 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohm per 1000 feet. The lead to shield resistance is 14 ohm per 1000 feet.

1184 The MAP tests cable 3 for opens, shorts and reversal of leads in cable D-A3 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohm per 1000 feet. The lead to shield resistance is 14 ohm per 1000 feet.

1193 This is the entry MAP to the terminal subsystem.

1194 Terminal subsystem entry MAP.

1195 Tests the console check driver.

1197 This MAP is used to verify fixes made to the work station controller.

1198 Entry to the work station attachments MDI MAPs.
For instructions on running the softmap for the work station attachment, see the Diagnostic Service Guide 99-062.
The softmaps will either fail (find the bug), or pass through to the no trouble found point. In either case,

```
 |   |  the system will stop with all lights off except P1.
 |   |  The contents of registers X'01' and X'02' will
 |   |  direct you to the stop point in your copy of
 |   |  the softmaps. (For instructions on how to get the data
 |   |  in these registers, see the Diagnostic Service Guide
 |   |  99-062).
 |   |  That step in the softmaps will direct you to either
 |   |  perform a repair or go to another MAP. The MAP you are
 |   |  directed to go to will either direct you in
 |   |  further diagnosing the problem or, in the case of the
 |   |  no trouble found point, describe your alternatives.
 |   |
1199 |   |  No trouble found. Description of options.
 |   |
12XX |   |WORK STATION MAPs (Ideographic Feature)
 |   |
1201 | X |  Good Machine Path. This MAP finds the failing FRU or
 |   |  goes to another MAP if necessary.
 |   |
1203 | X |  This MDI is the second MAP of three MDI Good Machine
 |   |  Path. This MAP finds the failing FRU or goes to
 |   |  another MAP if necessary.
 |   |
1228 | X |  This is the third MDI MAP of a three MDI MAP Good
 |   |  Machine Path for the work station attachment. This
 |   |  MDI MAP is to be referenced from the CE panel when
 |   |  using the special MDI procedure described in the
 |   |  Diagnostic Service Guide 99-062.
 |   |
1230 |   |  This MDI is the fourth MAP of a four MDI MAP good
 |   |  machine path. This MAP finds the failing FRU or goes
 |   |  to another MAP if necessary. This MAP is to be
 |   |  referenced from the CE panel when using the special
 |   |  MDI procedure described in the Diagnostic Service
 |   |  Guide 99-062.
 |   |
1242 |   |  This MAP provides FRU isolation when a failure occurs
 |   |  during the Interrupt Controls test (T100B). This MAP
 |   |  finds the failing FRU. This MAP requires the use of
 |   |  of the special TU Select feature described in the
 |   |  Diagnostic Service Guide 99-064.
 |   |
1244 |   |  This MAP provides FRU isolation when a failure occurs
 |   |  during the Three Second Timeout Check test (T100A).
```

		This MAP finds the failing FRU.
1246	X	This MAP provides FRU isolation when a failure occurs during the Attachment Processor U-Pro Load test (T1006). This MAP finds the failing FRU or goes to another MAP if necessary. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.
1248		This MAP is a continuation of T1006 FRU Isolation MAP A. This MAP provides isolation when a controller proc check occurs or when the controller fails to interrupt the control processor on interrupt level A. This MAP finds the failing FRU or goes another MAP if necessary. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.
1250		This MAP is a continuation of T1006 FRU Isolation MAP B. This MAP will check signals needed to start executing code in the controller. This MAP finds the failing FRU or goes to another MAP if necessary. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.
1251		This MAP is a continuation of T1006 FRU Isolation MAP C. This MAP will check signals needed to execute I/O instructions in the work station. This MAP finds the failing FRU or goes to another MAP if necessary. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.
1252	X	This MAP provides FRU isolation when a failure occurs during the Cycle Steal/Storage Refresh test (T100F). This MAP finds the failing FRU or goes to another MAP if necessary.
1253		This MAP is a continuation of T1005 FRU isolation MAP A. This MAP provides FRU isolation for problems related to cycle steals to the controller resulting from a failure in T1005. This MAP finds the failing FRU or goes to another MAP if necessary. This MAP

requires the use of the special TU Select described in
the Diagnostic Service Guide 99-064.

1254   This MAP is a continuation of T1005 FRU isolation MAP
A. This MAP provides FRU isolation when a data mis-
compare was detected in the data transferred from the
controller to the CSP processor. This MAP finds the
failing FRU or goes to another MAP if necessary. This
MAP requires the use of the special TU Select
described in the Diagnostic Service Guide 99-064.

1255   This MAP is a continuation of T1005 FRU isolation MAP
B. This MAP finds the failing FRU or goes to another
MAP if necessary. This MAP requires the use of the
special TU Select described in the Diagnostic Service
Guide 99-064.

1256   This MAP is a continuation of T1005 FRU Isolation MAP
A. The MAP provides FRU isolation when an op end
interrupt did not occur while trying to cycle steal
data from the controller to the CSP processor. This
MAP finds the failing FRU or goes to another MAP if
necessary. This MAP requires the use of the special
TU Select feature described in the Diagnostic Service
Guide 99-064.

1257   This MAP is a continuation of T1005 FRU Isolation MAP
D. This MAP finds the failing FRU or goes to another
MAP if necessary. This MAP requires the use of the
special TU Select feature described in the Diagnostic
Service Guide 99-064.

1258   This MAP is a continuation of T1005 FRU Isolation MAP
E. This MAP finds the failing FRU or goes to another
MAP if necessary. This MAP requires the use of the
special TU Select feature described in the Diagnostic
Service Guide 99-064.

1259   This MAP provides board pin locations to check for
continuity on the channel lines. This MAP may be used
to trace cable problems or for free-lance trouble
shooting.

1265   This MAP provides FRU isolation when a failure occurs

during the PPI Initial Address Load test (T1001). This
MAP finds the failing FRU. This MAP requires the use
of the special TU Select feature described in the
Diagnostic Service Guide 99-064.

1267 This MAP provides FRU isolation when a failure occurs
during the Load Sense PPI Data Buffers test (T1002)
or the PPI/CNTL processor Intrpt test (T1004). This
MAP finds the failing FRU. This MAP requires the use
of the special TU Select feature described in the
Diagnostic Service Guide 99-064.

1268 This MAP provides FRU isolation when a failure occurs
during the Cycle Steal test (T1005). This MAP finds
the failing FRU.

1269 This MAP provides FRU isolation when a failure occurs
during the Channel/Processor Check tests (T1015). This
MAP finds the failing FRU.

1270 This MAP provides FRU isolation when a failure occurs
during the Branch Instruction tests (T1010),
Arithmetic Instruction tests (T1012) or Storage tests
(T1016). This MAP tests the storage address lines
(Sars 2 - 10). This MAP finds the failing FRU. This
MAP requires the use of the special TU Select feature
described in the Diagnostic Service Guide 99-064.

1271 This MAP provides FRU isolation when a failure occurs
during the Cycle Steal Pacer test (T1009). This MAP
finds the failing FRU.

1272 This MAP provides FRU isolation when the attachment
controller TUs fail with the work station adapter card
installed. It finds the failing FRU or goes to another
MAP if necessary. This MAP requires the use of the
special TU Select feature described in the Diagnostic
Service Guide 99-064.

1273 This MAP provides FRU isolation when a failure occurs
with the I/O channel control lines. It finds the
failing FRU or goes to another MAP if necessary. This
MAP requires the use of the special TU Select feature
described in the Diagnostic Service Guide 99-064.

1274 | This MAP provides FRU isolation when a failure occurs with the I/O DBI or when the host console check fails. This MAP finds the failing FRU. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.

1275 | This MAP provides FRU isolation when the I/O Interrupt Structure fails. This MAP finds the failing FRU. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.

1276 | This MAP provides FRU isolation when the I/O Base Cycle Steal Structure fails. This MAP finds the failing FRU. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.

1277 | This MAP provides FRU isolation when a failure occurs while the work station controller is attempting to poll the system console. It finds the failing FRU or goes to another MAP if necessary. This MAP requires the use of the special TU Select feature described in the Diagnostic Service Guide 99-064.

1279 | This MAP supplies you with the information necessary to run and interpret the local network analysis program TC152. This program is designed to present you with the status of the network as it is, and to permit you to compare this with your knowledge of the way it should be. Because there is no way for the MAP writer to know your specific terminal configuration, your knowledge and interpretation of results are the primary ingredients of this MAP.

1285 | This MAP tests cable 0 for opens, shorts, and reversal of leads in cable D-A0 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohms per 1000 feet. The lead to shield resistance is 14 ohms per 1000 feet.

1286 | This MAP tests cable 1 for opens, shorts, and reversal

of leads in cable D-A1 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohms per 1000 feet. The lead to shield resistance is 14 ohms per 1000 feet.

1287 This MAP tests cable 2 for opens, shorts, and reversal of leads in cable D-A2 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohms per 1000 feet. The lead to shield resistance is 14 ohms per 1000 feet.

1288 This MAP tests cable 3 for opens, shorts, and reversal of leads in cable D-A3 and cable A-A2V2. The cable has two internal leads and a shield. Each internal lead is terminated at each end of the cable with a 55 ohm resistor to ground. The lead to lead resistance is 20 ohms per 1000 feet. The lead to shield resistance is 14 ohms per 1000 feet.

1289 System Console Subsystem Entry MAP.

1290 Terminal Subsystem Entry MAP.

1291 This MAP tests the console check driver.

1292 Entry to the work station attachments MDI MAPs. For instructions on running the SOFTMAPs for the work station attachment, see the Diagnostic Service Guide 99-062. The SOFTMAPs will either fail (find the bug), or pass through to the no trouble found point. In either case the system will stop with all lights off except P1 (CE panel). The contents of WR1 and WR2 will direct you to the correct MAP to begin diagnosing your problem (for instructions on how to get the data in WR1 and WR2, see the Diagnostic Service Guide 99-062). The MAP you are directed to will either direct you in further diagnosing the problem or, in the case of the no trouble found point, describe your alternatives.

1296 | | No trouble found. Description of options.

13XX | |CE PANEL MAPs

1301 | | This MAP checks out the CE panel functions.

1303 | | This MAP checks out the Display lights on the CE
     | | panel.

1305 | | This MAP checks out the CE panel lamp test.

1307 | | This MAP determines why CE reset (CE panel) does
     | | not initialize the CE panel, CE subpanel, and operator
     | | panel correctly.

1309 | | This MAP determines why Display light P1 (CE
     | | panel) did not turn on when the machine was powered
     | | on.

15XX | |CONTROL PROCESSOR MAPs

1501 | | This MAP swaps control storage cards with main storage
     | | cards attempting to find a bad control storage card.

1505 | | This MAP uses Display lights byte 0 bits 2, 3, and
     | | 4 and Display lights byte 1 (CE panel) to
     | | determine why CSIPL did not complete correctly.

1507 | | This MAP uses Display lights byte 0 bit 2 ,3
     | | and 4 and WR3(L) to determine why CSIPL stops
     | | with Display lights byte 0 bit 2 , 3 and 4
     | | still on.

1511 | | This MAP swaps control storage cards with main storage
     | | cards attempting to find a bad control storage card.

1513 | | This MAP determines which MS or CP processor cards
     | | should change when all Interrupt lights are on.

1515 | | This MAP isolates which I/O attachment is causing the
     | | CSIPL problem.

1550 | | Sense the PSR expecting a machine check.

1551 | | Write X'AA' into OP1(H), X'55' into XR1(H) and sense OP1(H).

1552 | | Load OP1 with X'55', OP2 with X'AA', and sense OP1.

1555 | | A main storage address register (MSAR) parity check occurred. This register is located on card A-A1P2 and its output is used on the A-A1N2, A-A1Q2 and all main storage cards.

1557 | | Sense the PSR.

1558 | | Load and sense OP2(H) with X'00'.

1560 | | Load and sense OP2(L) with X'FF'.

1562 | | Sense the PSR expecting a machine check.

1569 | | This MAP determines why the MSAR parity checker on the A-A1Q2 card cannot detect bad parity.

1571 | | A main storage data parity check occurred while attempting to write data to main storage from the control processor. The data path is from the control processor through A-A1P2 to the main storage cards and then from the main storage cards through A-A1N2 back to the control processor.

1572 | | This MSP MDI found a main storage addressing problem. This can be caused by a faulty main storage card or card A-A1Q2.

1573 | | The control processor is unable to sense proper data from card A-A1Q2. Some of the control logic is located on cards A-A1F2 and A-A1N2.

1574 | | A machine check occurred while attempting to store into a main storage card. This fault can be caused by either a bad bit in one of the storage cards or an addressing problem. This MAP determines which fault occurred and corrects the fault if it is a bad bit. If not, you are instructed to go to MAP 1576.

1575 | The MSP MDI found a main storage addressing problem. This can be caused by a faulty storage card or card A-A1Q2.

1576 | A main storage addressing test failed. This can be caused by card A-A1Q2 or any bad main storage cards. This MAP determines exactly which card is bad. Card A-A1R2 location is used as a card test location. The main storage cards are inserted into this location one at a time and tested. If it is determined that they are all good, card A-A1Q2 is bad.

1579 | The Mini-MDI found a bad A-A1Q2 or main storage card. This MAP determines exactly which card is bad. Card A-A1R2 location is used as a card test location. The main storage cards are inserted into this location one at a time and tested. If it is determined that they are all good, then the bad card is card A-A1Q2.

1581 | T0292, T0293, T0294 and T0295 execute an MVC command in various translate modes. These same commands have been executed in non-translated mode and worked OK. This means translate is not working correctly.

1582 | This MAP determines why an incorrect value is being sensed from the Q register.

1584 | This MAP determines why an incorrect value is being sensed from the PSR.

1585 | The MSP is unable to execute an MSP instruction properly.

1586 | The MAP MDI has detected an error while loading and sensing the registers on cards A-A1N2 and A-A1P2 (part 1).

1587 | The MSP MDI has detected an error while loading and sensing the register on cards A-A1N2 and A-A1P2 (part 2).

1588 | The MSP MDI has detected an error while loading and sensing the registers on cards A-A1N2 and A-A1P2

		(part 3).
1589		The MSP MDI has detected an error while loading and sensing the registers on cards A-A1N2 and A-A1P2 (part 4).
17XX		CONTROLLER MAPs (MLCA)
1701	X	Controller Good Machine Path MAP. This MAP finds the failing FRU or goes to another MAP if necessary.
1703	X	This MAP provides FRU isolation when a failure occurs during the Attachment Processor U-Prog Load test (T1006). This MAP finds the failing FRU or goes to another MAP if necessary.
1704	X	This MAP is a continuation of U-Prog Load and Execute Test MAP A. This MAP provides isolation when a controller proc check occurs or when the controller fails to interrupt the control processor with condition A on level A. This MAP finds the failing FRU or goes to another MAP if necessary.
1705	X	This MAP is a continuation of U-Prog Load and Execute Test MAP B. This MAP will check signals needed to start executing code in the controller. This MAP finds the failing FRU or goes to another MAP if necessary.
1706	X	This MAP is a continuation of U-Prog Load and Execute Test MAP C. This MAP will check signals needed to execute I/0 instructions in the controller. This MAP finds the failing FRU or goes to another MAP if necessary.
1708	X	This MAP provides FRU isolation when a failure occurs during the Cycle Steal/Storage Refresh test (T100F). This MAP finds the failing FRU or goes to another MAP if necessary.
1709	X	This MAP is a continuation of Cycle Steal FRU isolation MAP A. This MAP provides FRU isolation for problems related to cycle steals to the controller resulting from a failure in T1005. This MAP finds the failing FRU or goes to another MAP if necessary.

170A | X | This MAP is a continuation of Cycle Steal FRU isolation MAP A. This MAP provides FRU isolation when a data compare was detected in the data transferred from the controller to the CSP processor. This MAP finds the failing FRU or goes to another MAP if necessary.

170B | X | This MAP is a continuation of Cycle Steal FRU isolation MAP B. This MAP finds the failing FRU or goes to another MAP if necessary.

170C | X | This MAP is a continuation of Cycle Steal FRU isolation MAP A. This MAP provides FRU isolation when an Op End Interrupt did not occur while trying to cycle steal data from the controller to the CSP processor. This MAP finds the failing FRU or goes to another MAP if necessary.

170D | X | This MAP is a continuation of Cycle Steal FRU isolation MAP D. This MAP finds the failing FRU or goes to another MAP if necessary.

170E | X | This MAP is a continuation of Cycle Steal FRU isolation MAP E. This MAP finds the failing FRU or goes to another MAP if necessary.

171A | X | This MAP provides FRU isolation when a failure occurs during the Cycle Steal Pacer test (T1009). This MAP finds the failing FRU.

171B | X | This MAP provides FRU isolation when a failure occurs during the Three Second Timeout Check test (T100A). This MAP finds the failing FRU.

171C | X | This MAP provides FRU isolation when a failure occurs during the Interrupt Controls Test (T100B). This MAP finds the failing FRU.

171D | X | This MAP provides FRU isolation when a failure occurs during the Channel/Processor Check tests (T1015). This MAP finds the failing FRU.

171E | X | This MAP provides FRU isolation when a failure occurs during the Branch Instruction tests (T1010), Arithmetic Instruction tests (T1012) or Storage Tests

		(T1016). This MAP tests the storage address lines (SARs 2 - 10). This MAP finds the failing FRU.
1715		This MAP provides board pin locations to check for continuity on the host channel lines. This MAP may be used to trace cable problems or for free-lance trouble shooting.
1716		This MAP provides FRU isolation when a failure occurs during the PPI Initial Address Load test (T1001). This MAP finds the failing FRU.
1717		This MAP provides FRU isolation when a failure occurs during the Load/Sense PPI Data Buffers test (T1004) or the PPI/CNTL Processor Intrpt test (T1004). This MAP finds the failing FRU.
1719		This MAP provides FRU isolation when a failure occurs during the Cycle Steal test (T1005). This MAP finds finds the failing FRU.
21XX		OP PANEL MAPs
2101		This is an operator and CE subpanel check out MAP.
2103		This MAP determines why Load (operator panel) does not turn on during CSIPL.
2105		This MAP determines why stop (CE subpanel) does not turn on when the machine is on and why the 'MSP' (CE subpanel) did not stay off when the machine was powered on.
23XX		DISKETTE MAPs (33FD/53FD)
2301	X	This is the diskette MDI entry MAP. This MAP tests attachment card logic functions.
2302	X	This MAP tests the attachment card logic functions.
2303	X	This MAP tests the diskette index and the drive speed.
2304	X	This MAP tests the diskette need function in FM mode.

2305 | X | This MAP tests the diskette seek function and analyzes any stepper motor pole circuit failures.

2306 | X | This MAP analyzes seek function failures.

2307 | X | This MAP tests the FM write function dynamically and tests the MFM write function at the attachment card.

2309 | X | This MAP tests the modified frequency modulated (MFM) read/write function dynamically and diskette DIAGB1 for a good CSIPL track.

27XX | | DISKETTE MAPs (72MD)

2701 | X | This is the diskette MDI Entry MAP. This MAP verifies diskette configuration (level 2).

2702 | X | This MAP tests the attachment card logic functions (level 2).

2703 | X | This MAP tests the attachment card logic functions (level 2).

2704 | X | This MAP tests the autoloader orient function (level 2).

2705 | X | This MAP tests the picker and bed operations (level 2).

2706 | X | This MAP isolates attachment/autoloader control logic interface errors (level 2).

2707 | X | This MAP isolates attachment/autoloader control logic interface errors (level 2).

2708 | X | This MAP isolates attachment/autoloader control logic interface errors (level 2).

2709 | X | This MAP tests the diskette index and the drive speed (level 2).

2711 | X | This MAP tests the diskette read function in FM mode (level 2).

2712	X	This MAP tests the diskette seek function and analyzes any stepper motor pole circuit failures (level 2).
2713	X	This MAP analyzes seek function failures (level 2).
2714	X	This MAP tests the FM write function and tests the MFM write function at the attachment card (level 2).
2716	X	This MAP tests the modified frequency modulated (MFM) read/write function and the DIAGB1 diskette for a good CSIP1 track (level 2).
2718		This MAP isolates the carriage bed failures (72MD).
2719		This MAP isolates the picker failures (72MD).
30XX		DATA COMMUNICATIONS MAPs (MLCA)
3021	X	This MAP exercises and tests the communication adapter card for good operation.
3022	X	This MAP exercises and tests the communication adapter card and internal clock card if installed for good operation.
3023	X	This MAP tests the communication adapter card and the display lights driven by the adapter card for good operation.
3024	X	This MAP tests and exercises the adapter card, EIA card, internal cable and external cable that make up an EIA configuration for good operation. Wraps are made to the end of the exit cable.
3025	X	This MAP tests and exercises the communication adapter card and internal clock card if installed for good operation.
3026	X	This MAP wraps the following signals: Data terminal ready to data set ready, request-to-send to ring indicate, send data to clear-to-send, rate select to serial clock transmit, wrap to receive data, standby to receive clock.

3027	X	This MAP wraps the following signals: Data terminal ready to data set ready, request-to-send to ring indicate, send data to clear-to-send, rate select to serial clock transmit, wrap to receive data, standby to receive clock (Module 2).
3028	X	This MAP exercises and tests an IBM stand-alone modem with wrap capability for good operation.
3029	X	This MAP exercises and tests the 1200 integrated modem for good operation.
3030	X	1200 Modem Error Module No. 1. This MAP troubleshoots a failing test unit that was found to be failing in MAP 3029.
3031	X	1200 Modem Error Module No. 2. This MAP troubleshoots a failing test unit that was found to be failing in MAPs 3029 and 3030.
3032	X	This MAP exercises and tests the DDSA hardware for good operation by wrapping data.
3033	X	This MAP exercises and tests the DDSA hardware for good operation by wrapping data. The hardware is tested up to the end of the system exit cable.
3034	X	DDSA Error Module No. 1. This MAP troubleshoots a DDSA card data wrap problem that was indicated by a failing test unit in MAP 3032.
3035	X	DDSA Error Module No. 2. This MAP troubleshoots a problem in the DDSA data wrap to the end of the exit cable.
3036	X	This MAP exercises and tests the 4800 IM Location A hardware for good operation by executing a remote LPDA self test.
3037	X	This MAP exercises and tests the 4800 IM Location B hardware for good operation by executing a remote LPDA self test.

3039 | X | Wideband MDI No. 1. This MAP checks out the wideband configuration by wrapping all the signals out to the end of the external cable.

303A | X | This MAP isolates a hardware failure between the comm adapter card, line adapter card or discrete wires between the two cards.

303B | | This MAP will explain how to run the manual loop transmit test (LTT) on a 4800 non-switched point to point configuration using the 4800 modem operator panel.

303C | | This MAP will explain how to run the manual loop transmit test (LTT) on a 4800 non-switched multipoint configuration using the 4800 modem operator panel.

303D | | This MAP will explain how to run the manual loop transmit test (LTT) on a 4800 switched configuration using the 4800 modem operator panel.

303E | | This MAP will test the 4800 incorporated protective coupler connection to the telephone network.

303F | | This MAP will test the 4800 and coupler adapter connection to the telephone network.

303G | | This MAP will test the 4800 and World Trade coupler connection to the telephone network.

303H | | This MAP describes how to run the 4800 Local and Remote Status report by using the TU Select option. These tests will check the relative quality of the telephone line by counting the number of quadratic errors during the last 256 bauds received by the 4800 modem.
The results of these tests are not absolute. Instead they provide a relative indication of telephone line quality.

3040 | X | This MAP tests and exercises the adapter card, autocall card, internal/external cables that make up the autocall line only. Wraps are made to the end of the external cable. The dialing portion of the autocall unit is checked to see if it can dial a

		nearby phone and cause it to ring.
3042	X	Wrap Error Module No. 1. This MAP attempts to isolate a hardware failure in the wideband configuration.
3046		The charts in this MAP show the 4800 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow for 4800 IM line 1.
3047		The charts in this MAP show the 4800 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow for 4800 IM line 2.
3048		The charts in this MAP show the 4800 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow for 4800 IM line 3.
3049		The charts in this MAP show the 4800 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow for 4800 IM line 4.
304A	X	This MAP exercises and tests the 4800 IM Location A hardware for good operation by executing an LPDA local self test.
304B	X	This MAP exercises and tests the 4800 IM Location B hardware for good operation by executing a remote LPDA self test.
304C	X	This MAP exercises standalone 3863, 3864,3865 modems by executing an LPDA self test.
3050		This MAP is used to verify the discrete board wires added for the 4800 modem A or B.
3055		This is the Data Communications Entry MAP.

3056 | | This MAP troubleshoots a data communications display
light problem (line 1).

3057 | | This MAP troubleshoots a data communications display
light problem (line 2).

3058 | | This MAP troubleshoots a data communications display
light problem (line 3).

3059 | | This MAP troubleshoots a data communications display
light problem (line 4).

3060 | | This MAP is an EIA/CCITT interface chart. It shows all
the interface pins or the logic cards and cables
supplying the interface. The chart can be used to
trace cable problems and free-lance scoping.

3061 | | This MAP runs the online test.

3062 | | This MAP tests the auto-answer function of the 1200
BPS Integrated Modem (line 1).

3063 | | This MAP tests the auto-answer function of the 1200
BPS Integrated Modem (line 2).

3064 | | This MAP tests the auto-answer function of the 1200
BPS Integrated Modem (line 3).

3065 | | This MAP attempts to establish an online test with a
remote system.

3066 | | The charts in this MAP show the 1200 BPS integrated
modem board and cable interface wiring. Use these
charts for continuity checking and as a free-lance
tool in troubleshooting trace signals and data flow
for 1200 IM line 1.

3067 | | The charts in this MAP show the 1200 BPS integrated
modem board and cable interface wiring. Use these
charts for continuity checking and as a free-lance
tool in troubleshooting trace signals and data flow
for 1200 IM line 2.

3068 | | The charts in this MAP show the 1200 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signals and data flow for 1200 IM line 3.

3069 | | The charts in this MAP show the 1200 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signals and data flow for 1200 IM line 4.

3070 | | This MAP checks out the World Trade Public switched network (PSN) 1200 integrated modem connection to the telephone network (line 1).

3071 | | This MAP checks out the World Trade Public switched network (PSN) 1200 integrated modem connection to the telephone network (line 2).

3072 | | This MAP checks out the World Trade Public switched network (PSN) 1200 integrated modem connection to the telephone network (line 3).

3073 | | This MAP checks out the World Trade Public switched network (PSN) 1200 integrated modem connection to the telephone network (line 4).

3074 | | This MAP tests the remote DDSA loop-back test. Do not use this MAP on a multipoint network. This test requires aid from a remote system.

3075 | | This MAP contains DDSA interface charts. It shows all the interface pins on the logic cards and cables supplying the interface. Use the charts to trace cable problems and to free-lance scoping (line 1).

3076 | | This MAP contains DDSA interface charts. It shows all the interface pins on the logic cards and cables supplying the interface. Use the charts to trace cable problems and to free-lance scoping (line 2).

3077 | | This MAP contains DDSA interface charts. It shows all the interface pins on the logic cards and cables

		supplying the interface. Use the charts to trace cable problems and to free-lance scoping (line 3).
3078		This MAP contains DDSA interface charts. It shows all the interface pins on the logic cards and cables supplying the interface. Use the charts to trace cable problems and to free-lance scoping (line 4).
3079		This MAP runs the DDSA online test.
3080		You were directed to this MAP because Communications TU T8224 failed which indicates that the communications controller did not recognize an interrupt level request.
3081		This MAP instructs the CE to analyze the data communications error logs. This MAP also instructs the CE to attempt a trap or obtain a trace of the transmitted and received data while attempting to duplicate an error condition. This MAP also lists definable communications failures that are assumed to have a feature visibility, some of them during trapping or tracing.
3082		This MAP is used for 1200 LL and 4800 LL configurations.
3083		This MAP tests the auto-answer function of the 1200 BPS integrated modem (line 4).
3084		This MAP attempts to find why no answer tone is supplied to incoming calls (line 1).
3085		This MAP attempts to find why no answer tone is supplied to incoming calls (line 2).
3086		This MAP attempts to find why no answer tone is supplied to incoming calls (line 3).
3087		This MAP attempts to find why no answer tone is supplied to incoming calls (line 4).
3088		This MAP attempts to find why the system does not answer incoming calls (line 1).

3089 | | This MAP attempts to find why the system does not answer incoming calls (line 2).

3090 | | This MAP attempts to find why the system does not answer incoming calls (line 3).

3091 | | This MAP attempts to find why the system does not answer incoming calls (line 4).

3092 | | This MAP explains how to install the diagnostic wrap card on the communications logic board for line 1 problems.

3093 | | This MAP explains how to install the diagnostic wrap card on the communications logic board for line 2 problems.

3094 | | This MAP explains how to install the diagnostic wrap card on the communications logic board for line 3 problems.

3095 | | This MAP explains how to install the diagnostic wrap card on the communications logic board for line 4 problems.

3096 | | This MAP is an analog wideband interface chart. It shows all the interface pins or the logic cards and cables supplying the interface. The chart can be used to trace cable problems and free-lance scoping.

3097 | | This MAP is an autocall wideband interface chart. It shows all the interface pins or the logic cards and cables supplying the interface. The chart can be used to trace cable problems and free-lance scoping.

31XX | |DATA COMMUNICATIONS MAPs (2-line)

3101 | X | This MAP exercises and tests the communication adapter card for good operation.

3102 | X | This MAP exercises and tests the communication adapter card and internal clock card if installed for good operation.

3103	X	This MAP tests the communication adapter card and the display lights driven by the adapter card for good operation.
3104	X	This MAP tests and exercises the adapter card, EIA card, internal cable and external cable that make up an EIA configuration for good operation. Wraps are made to the end of the exit cable.
3105	X	EIA error module no. 1. This MAP attempts to isolate an EIA hardware failure indicated by a failing test unit in MAP 3104 or 3118.
3106	X	EIA error module no. 2. This MAP attempts to isolate an EIA hardware failure indicated by a failing test unit in MAPs (3104 or 3118) and 3105.
3107	X	This MAP exercises and tests an IBM stand-alone modem with wrap capability for good operation.
3108	X	This MAP exercises and tests the integrated 2400 modem and the internal cable between it and the communication adapter for good operation by wrapping test lines and test data.
3109	X	2400 modem error module no. 1. This MAP troubleshoots a failing internal cable wrap problem.
3110	X	2400 modem error module no. 2. This MAP troubleshoots a modem failure to wrap data.
3111	X	2400 modem error module no. 3. This MAP troubleshoots a modem failure to wrap data.
3112	X	This MAP exercises and tests the 1200 integrated modem for good operation.
3113	X	1200 modem error module No 1. This MAP troubleshoots a failing test unit that was found to be failing in MAP 3112.
3114	X	1200 modem error module No 2. This MAP troubleshoots a

			failing test unit that was found to be failing in MAPs 3112 and 3113.
3115	X		This MAP exercises and tests the DDSA hardware for good operation by wrapping data.
3116	X		DDSA error module no. 1. This MAP troubleshoots a DDSA card data wrap problem that was indicated by a failing test unit in MAP 3115.
3117	X		DDSA error module no. 2. This MAP troubleshoots a problem in the DDSA data wrap to the end of the exit cable.
3118	X		This MAP tests and exercises the adapter card, EIA card, internal cable and external cable that make up an EIA configuration for good operation. Wraps are made to the end of the exit cable.
3119	X		This MAP exercises and tests the integrated 2400 modem and the communication adapter for good operation by wrapping test lines and test data.
3120	X		This MAP exercises and tests the DDSA hardware for good operation by wrapping data. The hardware is tested up to the end of the system exit cable.
3121			This is the data communications entry MAP.
3122			This MAP troubleshoots a data communication Display light problem.
3123			This is the data communications entry MAP for Line 2.
3124			This MAP troubleshoots a data communication Display light problem (Line 2).
3201			This MAP is an EIA/CCITT interface chart. It shows all the interface pins or the logic cards and cables supplying the interface. The chart can be used to trace cable problems and free-lance scoping.
3202			This MAP runs the online test.

3301 | | This MAP is an EIA/CCITT interface chart. It shows all the interface pins or the logic cards and cables supplying the interface. The chart can be used to trace cable problems and free-lance scoping (line 2).

3302 | | This MAP runs the online test (for line 2).

3401 | | This MAP tests the auto-answer function of the 1200 BPS Integrated Modem.

3402 | | This MAP attempts to find why no answer tone is supplied to incoming calls.

3403 | | This MAP attempts to find out why the system does not answer incoming calls.

3404 | | This MAP attempts to establish an online test with a remote system.

3405 | | The following charts show the 1200 BPS Integrated Modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow.

3406 | | This MAP checks out the World Trade public switch network (PSN) 1200 Integrated Modem connection to the telephone network.

3501 | | This MAP tests the auto-answer function of the 1200 BPS Integrated Modem (on line 2).

3502 | | This MAP attempts to find why no answer tone is supplied to incoming calls (line 2).

3503 | | This MAP attempts to find out why the system does not answer incoming calls (line 2).

3504 | | This MAP attempts to run an online test with a remote system (line 2).

3505 | | The following charts show the 1200 BPS integrated modem board and cable interface wiring. Use these charts for continuity checking and as a free-lance tool in troubleshooting trace signal and data flow

(line 2).

3506 This MAP checks out the World Trade Public Switched Network (PSN) 1200 integrated modem connection to the telephone network (line 2).

3600 This MAP checks the rquest to send and clear to send circuitry.

3601 This MAP checks out the transmit data, received data, and transmit clock circuitry.

3602 This MAP checks the online test.

3603 This MAP probes points in the 2400 I.M. while the online test is running.

3604 This MAP sends the CE to three MAPs and attempts to locate the problem or establish that there is no problem.

3605 This MAP checks the basic transmit and receive circuits of the 2400 BPS integrated modem.

3606 This MAP checks the transmit circuitry of the 2400 BPS integrated modem.

3607 This MAP troubleshoots why the signal indicator is not on continuously in switch position T1. This was discovered in MAP 3605 and partially troubleshot there.

3608 This MAP checks the receive circuitry of the 2400 BPS Integrated Modem.

3609 This MAP checks the receive equalizer circuitry for the switched modem or SNBU (Switched Network Backup) the 2400 BPS integrated modem.

3610 This MAP checks the problem of auto equalizer for the 2400 BPS switched modem.

3611 This test checks the basic circuits of the modem between the communications line and the circuits

		tested by the test 1 diagnostic.
3612		This test checks the DTE interface receptacle, cable, and logic on the assumption that the basic transmit and receive circuits were checked by execution of the test 1 diagnostic (MAP 3605).
3613		This MAP tests the auto answer function of the 2400 integrated modem.
3614		The system telephone will not answer incoming calls.
3615		The system telephone does not answer incoming calls.
3616		This MAP contains charts that show the discrete wires that are added to the 2400 integrated modem board to define the feature type of the modem. Cable wiring is also shown in these charts. The charts are used when a problem is found in associated circuitry.
3700		This MAP checks the request to send and clear to send circuits (line 2).
3701		This MAP checks out the transmit data, received data, and transmit clock circuitry (line 2).
3702		This MAP checks to see the SDLC online test will run (line 2).
3703		Online test is failing. The MAP checks adapter to 2400 I.M. interface lines while the online test is running (line 2).
3704		This MAP sends the CE to five MAPs and attempts to locate the problem or determine that there is no problem (line 2).
3705		This MAP checks the basic transmit and receive circuits of the 2400 BPS integrated modem (line 2).
3706		This MAP checks the transmit circuits of the 2400 integrated modem (line 2).
3707		This MAP troubleshoots why the Signal light is

		not On continuously in switch position T1. This
		was found in MAP 3705 and partially trouble
		shot there (line 2).
3708		This MAP checks the receive circuits of the 2400
		integrated modem (line 2).
3709		This MAP checks the receive equalizer circuits for
		the switched modem or SNBU (switched network backup)
		of the 2400 BPS integrated modem (line 2).
3710		This MAP checks the problem of auto equalizer for
		the 2400 BPS switched modem (line 2).
3711		This test checks the basic circuits of the modem
		between the communications line and the circuits
		tested by the Test 1 diagnostic (line 2).
3712		This test checks the DTE interface socket,
		cable, and logic on the assuming that the basic
		transmit and receive circuits were checked by
		the running of Test 1 diagnostic (MAP 3705) (line 2).
3713		This MAP tests the auto answer function of the
		2400 integrated modem (line 2).
3714		This MAP attempts to find out why the system
		telephone does not answer incoming calls and
		getting answer tone (line 2).
3715		The MAP attempts to find out why the system
		telephone does not answer incoming calls (line 2).
3716		This MAP contains charts that show the discrete wires
		that are added to the 2400 integrated modem board to
		specify the feature type of the modem (line 2).
		Cable wiring is also shown in these charts.
		The charts are used for continuity checking when a
		problem is found in associated circuits.
3801		This MAP tests the remote DDSA loop-back test. Do
		Not use this MAP on a multipoint network. This test
		requires aid for remote system.

3802 | | This MAP contains DDSA interface charts. It shows all
the interface pins on the logic cards and cables
supplying the interface. Use the charts to trace cable
problems and to free-lance scoping.

3803 | | This MAP runs the online test.

3901 | | This MAP tests the remote DDSA loop-back test. Do
not use this MAP on a multipoint network. This test
needs aid for a remote system (line 2).

3902 | | This MAP contains DDSA interface charts. It shows all
the interface pins on the logic cards and cables
supplying the interface. Use the charts to trace
cable problems and to free-lance scoping (line 2).
CHART 1: This chart shows the adapter card to DDSA
card interface on board A-A2. CHART 2: This chart
shows the connection of the cable lines from
board A-A2 through the internal ribbon cable (A-A2Z3)
to the cable tower serpent connector to the exit
cable. CHART 3: This chart shows cable lines jumpered
by the DDSA wrap connector.

3903 | | This MAP runs the online test for line 2.

40XX | |1255 ATTACHMENT SOFTMAPs

4001 | X | This MAP tests the ability of the channel to
communicate with the 1255 attachment card.

4003 | X | This MAP tests the ability of the channel
to communicate with the 1255 controller via
the attachment card.

4004 | X | This MAP test the ability of the 1255 controller
to set its 1255 command latches.

4005 | X | This MAP tests the 1255 controller's internal
registers and ALU PCR bits (zero, non-zero, and
carry).

4007 | X | This MAP tests the 1255 controller's ALU status
conditions.

4009 | X | This MAP tests the 1255 controller's memory on the A-A3R2 and A-A3S2 cards.

4011 | X | This MAP tests 1255 controller branch and link and long timeout circuits.

4013 | X | This MAP tests the 1255 controller's ability to perform instructions correctly.

4015 | X | This MAP test the 1255 controller's ability to perform instructions correctly.

4017 | X | This MAP test half of the 1255 attachment drivers, receivers, and cabling.

4019 | X | This MAP test half of the 1255 attachment drivers, receivers, and cabling.

4021 | X | This MAP test the 1255's adapter for the 5340.

4023 | X | This MAP tests the 1255's adapter for the 5340.

4031 | X | This MAP tests the channel's ability to communicate with the 1255 controller.

4033 | X | This MAP test the 1255 controller's data paths.

4035 | X | This MAP isolates 1255 controller data problems to a bit or many bits.

4037 | X | This MAP isolates 1255 controller data problems to a bit or many bits.

4051 | X | This MAP determines which driver/receiver combination is always active.

4053 | X | This MAP determines which driver/receiver combination is always active.

4055 | X | This MAP determines which driver or receiver tested in T52B1 is failing.

4057 | X | This MAP determines why the first wrap test fails completely.

4058	X	A CPU is stopped wrap failure is isolated to the failing FRU.
4059	X	A start reset wrap failure is isolated to the failing FRU.
4060	X	A transit routing wrap failure is isolated to the failing FRU.
4061	X	An account number wrap failure is isolated to the failing FRU.
4062	X	An I-0 ready wrap failure is isolated to the failing FRU.
4063	X	An external I-0 light wrap failure is isolated to the failing FRU.
4065	X	This MAP determines which driver or receiver tested in T52B2 is failing.
4066	X	A read call wrap failure is isolated to the failing FRU.
4067	X	A document under read head wrap failure is isolated to the failing FRU.
4068	X	A document to be read wrap failure is isolated to the failing FRU.
4069	X	The engage wrap failure is isolated to the failing FRU.
4070	X	This MAP determines which driver or receiver tested in T52B4 is failing.
4071	X	A disengage wrap failure is isolated to the failing FRU.
4072	X	An auto select wrap failure is isolated to the failing FRU.
4073	X	A serial number field valid wrap failure is

```
         |   |  isolated to the failing FRU.
         |   |
4074 | X |  This MAP determines which driver or receiver
         |   |  tested in T52B5 is failing.
         |   |
4075 | X |  A service response wrap failure is
         |   |  isolated to the failing FRU.
         |   |
4076 | X |  An amount field valid wrap failure is
         |   |  isolated to the failing FRU.
         |   |
4077 | X |  A process control field valid wrap failure
         |   |  is isolated to the failing FRU.
         |   |
4078 | X |  The I-0 disconnect wrap failure is
         |   |  isolated to the failing FRU.
         |   |
4079 | X |  The stacker 0 wrap failure is isolated
         |   |  to the failing FRU.
         |   |
4080 | X |  The stacker 1 wrap failure is isolated to the FRU.
         |   |
4081 | X |  The stacker 2 wrap failure is isolated to the FRU.
         |   |
4082 | X |  The stacker 3 wrap failure is isolated to the FRU.
         |   |
4083 | X |  The stacker 4 wrap failure is isolated to the FRU.
         |   |
4084 | X |  The stacker 5 wrap failure is isolated to the FRU.
         |   |
4085 | X |  The stacker 6 wrap failure is isolated to the FRU.
         |   |
4086 | X |  The stacker 7 wrap failure is isolated to the FRU.
         |   |
4087 | X |  The stacker 8 wrap failure is isolated to the FRU.
         |   |
4088 | X |  The stacker 9 wrap failure is isolated to the FRU.
         |   |
4089 | X |  This MAP determines which driver or receiver
         |   |  tested in T52C7 is failing.
         |   |
4090 | X |  A stacker R wrap failure is isolated to
         |   |  the failing FRU.
         |   |
```

4091 | X | A sorter is stopped wrap failure is isolated to the failing FRU.

4092 | X | A field 6 valid wrap failure is isolated to the failing FRU.

4093 | X | The stacker A wrap failure is isolated to the failing FRU.

4094 | X | A 1255 attach stacker select failure is isolated to the failing bit.

4095 | X | The incorrect 1255 status condition at initialization time is isolated.

4096 | X | The incorrect 1255 status condition at initialization time is isolated.

4097 | X | The incorrect 1255 status following a command to feed a check without reading is analyzed to find the failing area in the 1255.

4098 | X | The 1255 incorrect status following a command to read only a single character from a check is analyzed to find the failing area in the 1255.

4099 | X | The incorrect 1255 status following a command to read two complete checks is analyzed to find the failing area in the 1255.

41XX | | 1255 ATTACHMENT HARDMAPs

4100 | | 1255 attachment entry MAP

4101 | | This MAP isolates the failure of the adapter reset function to either the controller card or the attachment card. All lines are correct except one, the controller error.

4102 | | This MAP isolates the failure of the controller load latch to either card A-A3R2 (1255 attachment) or card A-A3S2 (1255 controller).

4103 | | This MAP isolates the failure of the single cycle

	latch to either the card A-A3R2 (1255 attachment) or card A-A3S2 (1255 controller).
4104	This MAP isolates the failure of the controller reset latch to either card A-A3R2 (1255 attachment) or card A-A3S2 (1255 controller).
4106	A single bit failure has been found in the 1255 controller's data bus (bit 0).
4107	A single bit failure has been found in the 1255 controller's data bus (bit 1).
4108	A single bit failure has been found in the 1255 controller's data bus (bit 2).
4109	A single bit failure has been found in the 1255 controller's data bus (bit 3).
4110	A single bit failure has been found in the 1255 controller's data bus (bit 4).
4111	A single bit failure has been found in the 1255 controller's data bus (bit 5).
4112	A single bit failure has been found in the 1255 controller's data bus (bit 6).
4113	A single bit failure has been found in the 1255 controller's data bus (bit 7).
4114	A single bit failure has been found in the 1255 controller's data bus (bit P).
4115	This MAP isolates the failures in the data bus wrap test of more than one bit.
4118	A wrap of the 1255 controller's data buses has failed.
4122	This MAP isolates failures found in the controller register selection function.
4125	This MAP isolates a failure of the 1255 controller

		ALU zero indicator.
4126		This MAP isolates a failure of the 1255 controller ALU Non-zero indicator.
4127		This MAP isolates a failure of the 1255 controller ALU carry indicator.
4131		A wrap error has been isolated to -CPU (1255 controller) is stopped.
4132		A wrap error has been isolated to +transit routing field valid.
4133		A wrap error has been isolated to +account number field valid.
4134		A wrap error has been isolated to +I-0 ready.
4135		A wrap error has been isolated to +external I-0 light.
4136		A wrap error has been isolated to -read call.
4137		A wrap error has been isolated to +document under read head.
4138		A wrap error has been isolated to +document to be read.
4139		A wrap error has been isolated to -engage.
4140		A wrap error has been isolated to +field seven valid.
4141		A wrap error has been isolated to -disengage.
4142		A wrap error has been isolated to +auto select.
4143		A wrap error has been isolated to +serial number field valid.
4144		A wrap error has been isolated to -service response.

4145 | A wrap error has been isolated to +amount field valid.

4146 | A wrap error has been isolated to +process control field valid.

4147 | A wrap error has been isolated to -I-0 disconnect.

4148 | A wrap error has been isolated to +allow service request.

4149 | A wrap error has been isolated to +1255 data bit 5.

4150 | A wrap error has been isolated to 1255 data bit 6.

4151 | A wrap error has been isolated to +1255 data bit 7.

4152 | A wrap error has been isolated to +end transmission.

4153 | A wrap error has been isolated to +service request.

4154 | A wrap error has been isolated to +1255 data parity bit.

4155 | A wrap error has been isolated to +1255 data bit 0.

4156 | A wrap error has been isolated to +1255 data bit 1.

4157 | A wrap error has been isolated to +1255 data bit 2.

4158 | A wrap error has been isolated to +1255 data bit 3.

4159 | A wrap error has been isolated to +sorter is stopped'.

•4160 | A wrap error has been isolated to +field 6 valid.

4161 | A wrap error has been isolated to +1255 data bit 4.

4162 | A wrap error has been isolated to -stacker 0 bit.

4163 | A wrap error has been isolated to -stacker 1 bit.

4164 | A wrap error has been isolated to -stacker 2 bit.

4165 | A wrap error has been isolated to -stacker 3 bit.

4171 | This MAP is used as a guide for running the 1255 exerciser to run the 1255 online.

50XX | INTERMITTENT FAILURE REPLACEMENT LIST

5001 | This MAP contains an index of all intermittent failure replacement lists and procedures of how to use them.

5002 | This MAP attempts to quickfix a problem in the CS or MS processor by identifying the symptom in the symptom list and installing the appropriate cards.

5003 | This MAP attempts to quickfix a problem in the work station controller.

5004 | This MAP attempts to quickfix a problem in the diskette logic cards area.

5005 | This MAP lists all the cards that pertain to the data communication area as well as the modem and their configurations. Since there is no specific symptom to be listed, the user can install the cards in any order he wants.

5006 | This MAP attempts to quickfix a problem in the 62EH disk area. Since there is no specific symptom listed, there is no order of cards to be installed.

5007 | | This MAP attempts to quickfix a problem in the line
     | | printer attachment area.
     | |
5008 | | This MAP attempts to quickfix a problem in the power
     | | logic area.
     | |
5009 | | This MAP attempts to quickfix a problem in the 62pc
     | | disk area. Since there is no specific symptom listed,
     | | there is no order of cards to be installed.
     | |
5010 | | This MAP attempts to quickfix a problem in the 3262
     | | Line Printer Attachment area.
     | |
5011 | | This MAP lists all the cards that pertain to the MLCA
     | | Data Communication area as well as the modem and their
     | | configurations. Since there is no specific symptom to
     | | be listed, the user can install the cards in any order
     | | he wants.
     | |
5012 | | This MAP attempts to quickfix an intermittent problem
     | | in the work station attachment when work station
     | | control expansion C is installed.
     | |
81XX | |MAIN STORAGE PROCESSOR ERROR RECORDING MAP
     | |
8101 | | This MAP finds the most probable causes of error
     | | logs recorded for the MSP.
     | |
82XX | |CONTROL PROCESSOR ERROR RECORDING MAP
     | |
8201 | | This MAP finds the most probable causes of
     | | error logs recorded for the CP.
     | |
83XX | |DISK
     | |
8300 | | Disk error log MAP.
     | |
8301 | | This MAP uses ERAP to find the FRU that is the
     | | probable cause of the disk intermittent error.
     | |
84XX | |DISKETTE ERROR RECORDING MAPs
     | |
8401 | | This MAP finds the most probable causes of the error
     | | logs recorded for the diskette (Part 1).

8402		This MAP finds the most probable causes of the error logs recorded for the diskette (Part 2).
8403		This MAP finds the most probable causes of the error logs recorded for the diskette (Part 3).
8450		This MAP lists the most probable causes of failure for diskette errors recorded in the ERAP table (level 2).
8451		This MAP lists the most probable causes of failure for diskette errors recorded in the ERAP table (level 2).
8452		This MAP lists the most probable causes of failure for diskette errors recorded in the ERAP table (level 2).
8453		This MAP lists the most probable causes of failure for diskette errors recorded in the ERAP table (level 2).
85XX		5211 PRINTER ERROR RECORDING MAPs
8501		Printer control/power check.
8503		Printer belt checks.
8505		Carriage and jam checks.
8507		Hammer parity check (ECHO).
8509		Ribbon/printer busy check.
8511		Data parity/cable intlk check.
85XX		3262 PRINTER ERROR RECORDING MAPs
8551		This MAP lists the action to take or the FRU's associated with printer unit checks and power checks if the MDI diagnostics do not find the problem.
8553		This MAP lists the action to take or the FRU's

	associated with belt related checks if the MDI diagnostics do not find the problem.
8555	This MAP lists the action to take or the FRU's associated with carriage and jam checks if the MDI diagnostics do not find the problem.
8557	This MAP lists the action to take or the FRU's associated with hammer echo or any hammer on checks if the MDI diagnostics do not find the problem.
8559	This MAP lists the action to take or the FRU's associated with ribbon and printer busy checks if the MDI diagnostics do not find the problem.
8561	This MAP lists the action to take or the FRU's associated with data parity and cable interlock checks if the MDI diagnostics do not find the problem.
8563	This MAP lists the action to take or the FRU's associated with thermal checks if the MDI diagnostics do not find the problem.
86XX	WORK STATION CONTROLLER ERROR RECORDING MAPs
8600	This MAP gives you the information necessary to interpret the Error History Table for the work controller when work station control expansion C is not installed.
8650	This MAP gives you the information necessary to interpret the Error History Table for the work station controller when work station control expansion C is installed.
87XX	WORK STATION/KEYBOARD DISPLAY ERROR RECORDING MAPs
8700	This MAP supplies you with the information necessary to interpret the Error History Table for the Keyboard/ Display when work station control expansion C is not installed.
8750	This MAP supplies you the information necessary to interpret the Error History Table for the Keyboard/

	Display when work station control expansion C is installed.
88XX	WORK STATION/SERIAL PRINTER ERROR RECORDING MAPs
8800	This MAP supplies you with the information necessary to interpret the Error History Table for the matrix printers when work station control expansion C is not installed.
8850	This MAP supplies you with the information necessary to interpret the Error History Table for the matrix printers when work station control expansion C is installed.
89XX	DATA COMMUNICATIONS RECORDING MAP
8901	This MAP instructs the CE to analyze the data communications error logs. This MAP also instructs the CE to attempt a trap or obtain a trace of the transmitted and received data while attempting to duplicate an error condition. This MAP also lists definable communications failures that are assumed to have a feature visibility, some of them during trapping or tracing.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0179	B	2	002
0181	B	2	002
0183	B	2	002
0184	B	2	002
0199	A	1	001
0900	B	2	002
1000	B	2	002
1003	B	2	002
1701	A	1	001
2101	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	020	0105	A
5	026	0105	A
6	031	0105	A
6	032	0105	A
6	037	0105	A
7	042	0105	A
7	043	0105	A
3	003	0500	A
4	013	0500	A
7	044	0500	A
5	028	0707	A
6	030	0707	A
7	039	0804	A
7	041	0804	A
4	011	1195	A
4	012	1291	A
3	009	1305	A
4	018	1309	A
4	016	2105	A

001
(Entry Point A)
The following sections in the Maintenance Manual (VOL B) should be read before going on:

```
     Safety (page 1 - 4)
  01-110 Rules for Using MAPs
  02-000 General Reference Information
```

You should also be aware of the other topics found in VOL B, Section (01-000) and (02-000).

MAPS or MDIs are designed to diagnose a solid symptom (indicator) to a fault (FRU). If the symptom is not solid, use the MAPs and MDIs to attempt isolating the problem. If the MAPs and MDIs fail to find the (Step 001 continues)

MAP DESCRIPTION:
This MAP supplies a shortcut to other MAPs based on the major system indicators.

START CONDITIONS:
This is the first entry point in the MAPs.

LOGIC CARDS TESTED:
No FRU's

MAP 0101-2

(Step 001 continued)
fault (FRU), do the following:

Reseat the cards/cables.
Use error recording (80-000).
Use intermittent failure replacement list (MAP 5001).

If the system is left with an error indication, record On/Off status of all indicators on the operator and CE panels and in the power compartment and on the printer unit console (if installed) (ensure that all switches are in the Down positions).

Record any pertinent information the system operator has observed.

Note 1: Examples of error indications are: processor check, power check, wrap error, etc.

Examples of known areas are: work station, printer, disk, diskette, data communications, power, and CE or operator panel.

Note: The yes leg of the following question is a shortcut to some major MAPs. If the problem is not found by following this path, return to this MAP and start at Entry Point B.

Was the system left with an error indication or is the failing area known (see Note 1)?
Y N

002
(Entry Point B)
We will attempt to power down the machine and power it up to see if the machine powers Up/Down normally.
- Set Power On to '0'.
- Set Power On to '1'.
Some indicators of normal power Up/Down are:

The MAPs just want an indication that some major machine parts are getting power.

There are no power or thermal checks.
The fans are blowing/not blowing.
The disk drive is turning/not turning.
The diskette drive is turning/not turning.

Any lights on at the CE or operator panels is also an indication of power Up.
Does the machine power Up/Down normally?
Y N

8 3 3
A B C

003
Go To Map 0500, Entry Point A.

004
Is the Power On indicator on?
Y N

  005
  Either the Power On light is bad or the voltage is not getting to the lamp. See FSL OP015 and FSL OP110 to correct the problem.

006
-Press and hold Lamp Test (CE panel).

All lights should be On (CE, CE subpanel and operator panel).

Are all system lights on (CE and operator panels)?
Y N

  007
  -Press and hold Lamp Test (CE panel).

  Are Power Check or Thermal Check off (operator panel)?
  Y N

    008

    Is Console Check light off (operator panel)?
    Y N

      009
      Go To Map 1305, Entry Point A.

    010
    The Console Check indicator should come on with lamp test.
    Is the card in the A-A2R2 position a single four wide card?
    Y N

The CE and Operator Panel lights should be checked so when the MAPs inquire about these indicators, the decisions will be accurate.
The line printer console indicators are not a part of system lamp test.

The driving source for these lights is in the power compartment.

The driving source for this light is on card A-A2M2 or A-A2R2.

4 4 4 4
D E F G

011
Go To Map 1195, Entry Point A.

012
The work station control expansion 'C' is installed.
Go To Map 1291, Entry Point A.

013
Go To Map 0500, Entry Point A.

014
Release the Lamp Test switch.

Is Power Check or Thermal Check on (operator panel)?
Y N

    015

    Is the Stop Light on and MSP running Off (CE subpanel)?
    Y N

       016
       Go To Map 2105, Entry Point A.

    017
    Is Display Light 'P1' on (CE panel)?
    Y N

       018
       Go To Map 1309, Entry Point A.

    019
    Is there a 5211 or 3262 Line Printer installed on the system?
    Y N

       020
       Go To Map 0105, Entry Point A.

The driving source for these lights is in the power compartment.

The Power On Reset pulse should turn the Stop Light on when the machine is powered up.

7 5
H J

021
Is there a 3262 Line Printer installed?
Y N

    022
    Is the printer Power On indicator on (printer unit
    console)?
    Y N

        023

        Is the printer Power On/Off switch in the on
        position?
        Y N

            024
            Turn the printer Power On/Off switch to on.
            Is the printer Power On light on now?
            Y N

                025
                The printer will not power up.
                Go to Step 027, Entry Point D.

            026
            The printer will power up normally.
            Go To Map 0105, Entry Point A.

        027
        (Entry Point D)
        The printer will not power up.
        Observe the printer unit console indicators when
        you do the next two steps.
        -Set Power to 0 (operator panel).
        -Set Power to 1 (operator panel).
        Did the printer console indicators come on
        momentarily, then go off?
        Y N

            028
            Go To Map 0707, Entry Point A.

A 5211 line printer is installed.

This is the main power switch on the side of the printer.

6 6 6
K L M

K L M
5 5 5

SYSTEM ENTRY MAP

5340 SYSTEMS UNIT

PAGE 6 OF 11

MAP 0101-6

029
Check the circuit breakers CP1 and CP4 in the printer unit power compartment. The circuit breakers should be in the Up position.
Were either or both of the circuit breakers the cause of the printer power problem?
Y N

> **030**
> Go to the Printer Power MAP.
> **Go To Map 0707, Entry Point A.**

031
If a circuit breaker was the only problem, return the system to the operator. If not,
Go To Map 0105, Entry Point A.

032
MAP 0105 will CSIPL from disk and load the SSP.
Go To Map 0105, Entry Point A.

033
Is the printer Power On indicator on (printer unit console)?
Y N

A 3262 line printer is installed.

> **034**
>
> **Is the printer Power On/Off switch in the on position?**
> Y N

This is the main power switch on the side of the printer.

> > **035**
> > Turn the printer Power On/Off switch to on.
> > **Is the printer Power On light on now?**
> > Y N
> >
> > > **036**
> > > The printer will not power up.
> > > **Go to Page 7, Step 038, Entry Point E.**
> >
> > **037**
> > The printer will power up normally.
> > **Go To Map 0105, Entry Point A.**

7 7
N P

038
(Entry Point E)
The printer will not power up.
Observe the printer unit console indicators when
you do the next two steps.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
**Did the printer console indicators come on
momentarily, then go off?**
Y N

    039
    Go To Map 0804, Entry Point A.

040
Check the circuit breakers CP1, CP2, CP3, CP4
and CB01 in the printer unit power compartment.
The circuit breakers should be in the Up position.
**Were any of the circuit breakers the cause of
the printer power problem?**
Y N

    041
    Go to the Printer Power MAP.
    Go To Map 0804, Entry Point A.

042
If a circuit breaker was the only problem, return
the system to the operator. If not,
Go To Map 0105, Entry Point A.

043
MAP 0105 will CSIPL from disk and load the SSP.
Go To Map 0105, Entry Point A.

044
Go To Map 0500, Entry Point A.

045
Chart A lists error indications and MAP references. See chart A to find the error indication and correct MAP. Continue if the error indication is not in the table.

Chart A

Error Indication	MAP
Wrap Error	MAP 0159
Power Chk	MAP 0500
Thermal Chk	MAP 0500
Proc Chk and Console Chk 2 wide A-A2R2 card 4 wide A-A2R2 card*	MAP 1193 MAP 1289
Proc Chk	MAP 0149
Console Chk 2 wide A-A2R2 card 4 wide A-A2R2 card*	MAP 1193 MAP 1289
CE Panel Switch Failure	MAP 1301
CE Panel Lamp Failure	MAP 1303
OP Panel or CE Subpanel	MAP 2101

*The work station control expansion 'C' is installed.

Does Chart A have the present system error indication listed?
Y N

046
Is the failing area known (work station, printer, disk, diskette, data communications, power, CE or OP panel)?
Y N

1 1
1 0 9
Q R S

07JUL80   PN 4237436

EC 835000   PEC 834824

MAP 0101-8

S
8

047
There are no shortcuts for this error indication.
Go to Page 2, Step 002, Entry Point B.

048

Find the failing area in Chart B and go to the MAP
referenced for that area.

Chart B

```
.--------------------------.
|Failing Area        | MAP  |
|--------------------+------|
| Power              | 0500 |
|--------------------+------|
| Local Terminals    |      |
|2 wide A-A2R2 card  |      |
|   System Console   | 1193 |
|   System Printer   | 1194 |
|   Work Station     | 1194 |
|   Terminal Printer | 1194 |
|4 wide A-A2R2 card* |      |
|   System Console   | 1289 |
|   System Printer   | 1290 |
|   Work Station     | 1290 |
|   Terminal Printer | 1290 |
|--------------------+------|
| Processor          |      |
|   Control Store    |      |
|     Processor      | 0311 |
|     Memory         | 0311 |
|   Main Store       |      |
|     Processor      | 0190 |
|     Memory         | 0190 |
|--------------------+------|
| Line Printer       | 0181 |
|--------------------+------|
| Disk (62EH)        | 0900 |
|--------------------+------|
| Disk (62PC)        | 1000 |
|--------------------+------|
| Diskette (33/53FD) | 0179 |
|--------------------+------|
| Diskette (72MD)    | 0179 |
|--------------------+------|
| Data Comm (2-Line) | 0183 |
|--------------------+------|
| Data Comm (MLCA)   | 0184 |
|--------------------+------|
| CE Panel Switches  | 1301 |
|--------------------+------|
| CE Panel Lights    | 1303 |
```

(Step 048 continues)

(Step 048 continued)

```
|----------------------+------|
|OP Panel/CE Subpanel| 2101 |
|----------------------+------|
| MICR               | 4100 |
 ----------------------------
```

*The work station control expansion 'C' is installed.

049
Go to the MAP referenced by Chart A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	041	0107	A
4	030	0149	A
5	036	0149	A
5	040	0159	A
3	028	0173	A
5	038	1193	A
5	039	1289	A
2	005	1301	A
2	009	1301	A
2	013	1301	A
2	014	1301	B
2	006	1303	A
2	010	1303	A
2	017	1305	A
2	018	1513	A
2	002	2101	A
2	020	2101	A
3	024	2101	A
3	022	2103	A

001
(Entry Point A)
-Press Reset (CE panel).

MAP DESCRIPTION:
This MAP is part of the good machine path through the system entry MAPs. It does a CE panel checkout, checks the load and stop keys, CSIPLs from the disk (loading SSP), and reviews the status of the machine after the CSIPL sequence completes.

START CONDITIONS:
The machine has to be able to power up correctly.

LOGIC CARDS TESTED:
No FRU's

(Step 001 continues)

(Step 001 continued)
Are all operator panel lights Off (except Power On light)?
Y N

   002
   Go To Map 2101, Entry Point A.

003
-Set Mode Selector to Alter Stor (CE panel).
-Set the Address/Data switches to 'FFFF' (CE panel).
Are Display lights 'P0', 'P1', and all bits of byte 0 and byte 1 on (CE panel)?
Y N

   004
   Is only one light not correct?
   Y N

      005
      Go To Map 1301, Entry Point A.

   006
   Go To Map 1303, Entry Point A.

007
-Set the Address/Data switches to '0000'.
Are Display lights 'P0' and' P1' on and all bits of byte 0 and byte 1 Off (CE panel)?
Y N

   008
   Is only one light not correct?
   Y N

      009
      Go To Map 1301, Entry Point A.

   010
   Go To Map 1303, Entry Point A.

A

011
-Set the Address/Data switches to '0101'.
Are Display lights 'P0' and 'P1' Off, and byte 0 bit 7 and byte 1 bit 7 On (CE panel)?
Y N

   012
   Is only one light not correct?
   Y N

      013
      Go To Map 1301, Entry Point A.

   014
   Go To Map 1301, Entry Point B.

015
-Set Mode Selector to Proc Run (CE panel).
-Press Reset (CE panel).
Is only Display Light 'P1' on, all Proc Interrupt lights Off, and the Clock light Off (CE panel)?
Y N

   016
   (Entry Point B)
   Are all Proc Interrupt lights on (CE panel)?
   Y N

      017
      Go To Map 1305, Entry Point A.

   018
   Go To Map 1513, Entry Point A.

019
-Press Stop (CE subpanel).

Is the Stop light on (CE subpanel)?
Y N

   020
   Go To Map 2101, Entry Point A.

3
B

MAP 0105-2

021
-Set CSIPL to Diskette (CE panel).

Do not insert a diagnostic diskette or close he cover.

-Press Load (operator panel).
Is Load light on (operator panel)?
Y N

022
Go To Map 2103, Entry Point A.

023
Is the Stop light off (CE subpanel)?
Y N

024
Go To Map 2101, Entry Point A.

025
To CSIPL from the disk, do the following:

-Press Reset (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set all other CE panel switches to their down positions.
-Press Load (operator panel).
Is Load light off (operator panel)?
Y N

026
-Press Reset (CE panel).
Is Display Light 'P1' the only light On (CE panel)?
Y N

027
Go to Page 2, Step 016, Entry Point B.

028
Go To Map 0173, Entry Point A.

The MAPs are checking that the Load light is On. They are not attempting to CSIPL the system at this point.

This CSIPL procedure will CSIPL from the disk and load SSP.

07JUL80   PN 4237437

EC 835000   PEC 832850

MAP 0105-3

4
C

C
3

029
Wait for the CSIPL sequence to complete. This takes approximately 2 minutes.
Is the System Available indicator On (system console)?
Y N

  030
  The CSIPL failed from the disk.   MAP 0149 will review the indicators to determine the problem.
  Go To Map 0149, Entry Point A.

031

Does the console display the IPL Sign-On display that is described in Note 1 (see Note 1)?
Y N

  032

  Is a wrap error displayed at the system console (see Note 2)?
  Y N

    033
    Is Console Check light on (operator panel)?
    Y N

5 5 5 5
D E F G

Note 1: the IPL Sign-On display is described below.

The IPL sign-on display has user-specified sign-on information following the IPL Display sign-on title.

Note 2: There may be one or many wrap errors displayed. They will be of the form AABBCCDD, where AA = The device ID, BB = The device address, CC = The unit address, and DD = The wrap module number. An example of two wrap errors is shown below.

```
****** Wrap Error *********
02000001  80800103
 PRESS  ENTER  TO CONTINUE

        SYS-0019 ERROR
```

D E F G
4 4 4 4

GOOD MACHINE PATH 1
5340 SYSTEMS UNIT

MAP 0105-5

PAGE 5 OF 5

034
Is Processor Check light on (operator panel)?
Y N

> **035**
> The indications are that there is something wrong at the system console. Go to the terminal MAPs.

036
A processor check occurred while attempting to get the first Sign-On screen.
Go To Map 0149, Entry Point A.

037
A console check occurred while getting the first Sign-On display.
Is the card in the A-A2R2 position a single four wide card?
Y N

> **038**
> **Go To Map 1193, Entry Point A.**

039
The work station control expansion 'C' is installed.
Go To Map 1289, Entry Point A.

040
A wrap error has occurred.
Go To Map 0159, Entry Point A.

041
This is an acceptable exit. The machine has correctly CSIPL'ed from the disk and loaded the SSP. This MAP used the CSP, MSP, disk, work station controller, and system console.
Go To Map 0107, Entry Point A.
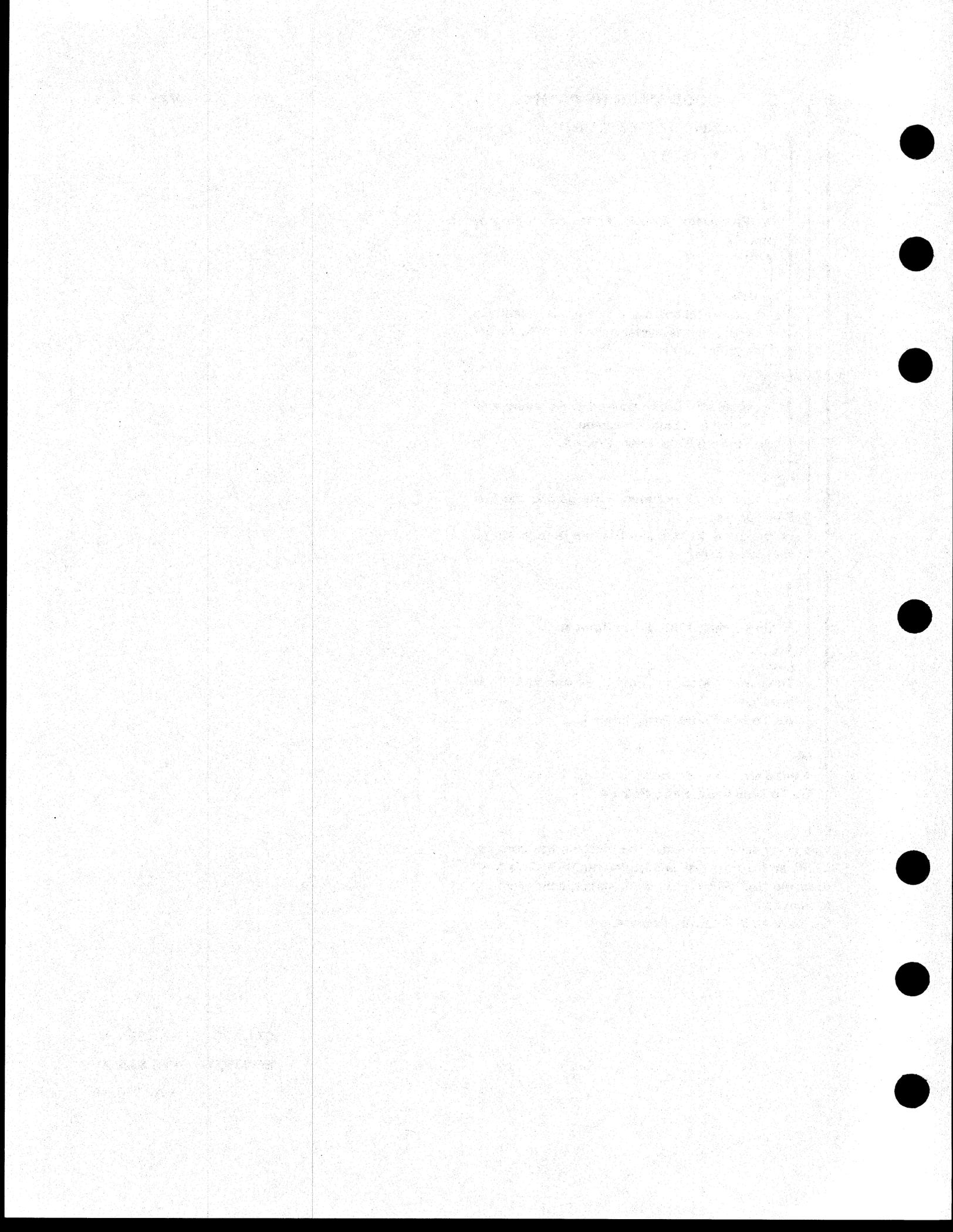
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	0109	A
3	019	0109	A
3	021	0109	A
2	008	0149	A
1	002	0153	A
3	012	0159	A
3	020	0181	A
3	010	1193	A
3	011	1289	A

001
(Entry Point A)
To CSIPL from the diskette, perform the following:

-Set Mode Selector to Proc Run (CE panel).
-Set Address/Data switches to X'0000'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down position.
Insert diskette DIAGB1.
-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to complete.

Is the System Available indicator On (system console)?
Y N

   002
   The CSIPL worked from the disk and fails from the diskette. MAP 0153 will run the MDI tests for diskette.
   Go To Map 0153, Entry Point A.

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MAP DESCRIPTION:
This MAP is part of the good machine path through the system entry MAPs. It attempts to CSIPL from the diskette and print the console menu on the printer if this system has a printer.

START CONDITIONS:
The conditions for getting to this MAP are:
The CE panel was partially checked out.
The Load and Stop switches are functional.
The CSIPL and IPL from disk was correct.
To get to this MAP the CSP, MSP, disk, work station controller, and the system console are functioning.

LOGIC CARDS TESTED:
No FRU's

2
A

MAP 0107-1

GOOD MACHINE PATH 2

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PAGE 2 OF 3

MAP 0107-2

003

Note 1: When the CSIPL sequence completes, the System Available light should be On and the console displays the Main Menu.

Is the Main Menu displayed on the console (Note 1)?
Y N

004
See Note 2 for an example of a wrap error display.

Note 2: There may be one or many wrap errors displayed. They will be of the form AABBCCDD, where AA = The device ID, BB = The device address, CC = The unit address, and DD = The wrap module number. An example of two wrap errors is shown below.

```
.----------------------------------.
|***** Wrap Error **********|
|02000001  80800103        |
|PRESS  ENTER  TO CONTINUE  |
|                          |
|      SYS-0019 ERROR       |
|                          |
.----------------------------------.
```

Is a wrap error displayed?
Y N

005
Is Console Check light on (operator panel)?
Y N

006
Is Processor Check light on (operator panel)?
Y N

007
The indications are that it is a terminal problem. Go to the terminal MAPs.

008
A processor check occurred while CSIPL'ing from the diskette. MAP 0149 will review the indicators.
Go To Map 0149, Entry Point A.

3   3 3
B   C D

B C D   GOOD MACHINE PATH 2   E F G   MAP 0107-3
2 2 2
            5340 SYSTEMS UNIT

            PAGE 3 OF 3

009

A console check occurred while CSIPL'ing from the diskette.

Is the card in the A-A2R2 position a single four wide card?

Y N

     010

     Go To Map 1193, Entry Point A.

011

The work station control expansion 'C' is installed.

Go To Map 1289, Entry Point A.

012

MAP 0159 will review the wrap indicators.

Go To Map 0159, Entry Point A.

013

Is there a printer on the system?

Y N

     014

     Go To Map 0109, Entry Point A.

015

Press the CNCL Print key on the system console.

Did the console display print on the printer?

Y N

     016

     Is the printer a line printer?

     Y N

E F G

017

Select Printer/Display from the Main Menu.

Select Printer Message to Printer as the next screen appears.

Press Enter and then Attn to get back to the Main Menu.

Press the CNCL/Print key on the system console.

Did the console display print on the matrix printer?

Y N

     018

     Verify that the printer is powered On and ready.

     Check that the matrix printer is connected to the port it is configured for.

     If these conditions exist, go to the matrix printer MAPs.

019

Go To Map 0109, Entry Point A.

020

MAP 0181 will check some obvious printer problems and run the line printer MDI tests.

Go To Map 0181, Entry Point A.

021

MAP 0109 will continue to check out the system. It is part of the good machine path through the system entry MAPs.

Go To Map 0109, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0107	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	004	0149	A
3	010	0149	A
4	016	0149	A
5	018	0199	A
5	019	0199	A

001
(Entry Point A)
The CE may want to bypass the running of the communications and 1255 MICR MDI MAPs at this time. The error logs are used later to determine if any errors exist for all devices. Answer yes if you desire to bypass this part of the MAPs or if communications and 1255 MICR are not installed.

MAP DESCRIPTION:
This MAP is part of the good machine path for the machine. It checks the two devices that were not used in the good machine path to this point, which are data communications and 1255 MICR. It also loads the SSP and requests the CE to interpret the error logs to aid in determining the problem.

START CONDITIONS:
CSIPL was correct from both disk and diskette.

LOGIC CARDS TESTED:
No FRU's

Do you want to bypass this part of the MAPs?
Y N

002
Do you want to bypass the running of the data communications MDI?
Y N

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4 3 2
A B C

003

To cause a CSIPL from the diskette, perform the following:

-Set the Address/Data switches to 'FF00' (CE panel).
-Set Mode Selector to Proc Run (CE panel).

-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load (operator panel).
Wait about 45 seconds for the CSIPL sequence to complete. See Note 1.
Did the CSIPL sequence complete correctly?
Y N

> **004**
> The CSIPL sequence completed correctly from both disk and diskette before this attempt. Go to MAP 0149 to review the indicators.
> **Go To Map 0149, Entry Point A.**

005

The data communications MDI MAPs are run.
Return to this point in the MAPs if the data communications MDI tests do not find the problem.

Select MDI MAPs and press Enter .
Select communications and press Enter .

If more than one communication line is installed run MDI MAPS on all lines.

Wait for the tests to complete or isolate the problem.

(Step 005 continues)

Note 1: The system console should display the DCP Main Menu if its CSIPL completes correctly.

B
1

(Step 005 continued)
Did the data communications MDI MAPs run correctly?
Y N

006
Repair the problem, verify that the system is working correctly, and return it to the system operator.

007
Go to Step 008, Entry Point C.

008
(Entry Point C)
Do you want to bypass the running of the 1255 MICR MDI?
Y N

009
To cause a CSIPL from the diskette, perform the following:

-Set the Address/Data switches to 'FF00' (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load (operator panel).
Wait about 45 seconds for the CSIPI sequence to complete. See Note 1.
Did the CSIPL sequence complete correctly?
Y N

010
The CSIPL sequence completed correctly from the disk and diskette before this attempt. Go to MAP 0149 to review the indicators.
Go To Map 0149, Entry Point A.

4 4
D E

A D E
1 3 3

GOOD MACHINE PATH 3

5340 SYSTEMS UNIT

PAGE 4 OF 5

MAP 0109-4

011
The 1255 MICR MDI MAPs are run. Return to this point in the MAPs if the 1255 MICR MDI tests do not find the problem.
Select MDI MAPs and press Enter.
Select 1255 MICR and press Enter.
Wait for the tests to complete or isolate the problem.
Did the 1255 MICR MDI MAPs run correctly?
Y N

012
Repair the problem. Verify that the system is working correctly and return it to the system operator.

013
Go to Step 015, Entry Point B.

014
Go to Step 015, Entry Point B.

015
(Entry Point B)
To cause a CSIPL from the disk, do the following:

-Set the Address/Data switches to '0000' (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Set MSIPL to Disk (CE panel).
-Set CSIPL to Disk (CE panel).
-Press Load (operator panel).

Wait for the CSIPL sequence to complete.
Did the CSIPL sequence complete correctly?
Y N

016
The CSIPL sequence completed correctly from both disk and diskette before this attempt. Go to MAP 0149 to review the indicators.
Go To Map 0149, Entry Point A.

This procedure loads the SSP. The display should look similar to the display described in Note 2 if the CSIPL sequence was correct.

Note 2:
The IPL sign-on display has user-specified sign-on information following the IPL Display sign-on title.

F
4

017
Sign on the system.
Enter ERAP and press Enter to load the ERAP program.
Review the error logs and the error history table for each device (see Note 3).
Did the ERAP information supply an indication as to which device is failing or marginal?
Y N

> **018**
> The system CSIPL'S from both the disk and diskette.
> The error recording tables do not indicate too many errors on any device.   Go to MAP 0199, which supplies some more diagnostic tests to attempt.
> **Go To Map 0199, Entry Point A.**

019
Use this information to determine which MDI MAPs you should run.
MAP 0199 has the procedures for running all the MDI tests.
Go To Map 0199, Entry Point A.

Note 3: Reference the error recording indexes Sect. (80-000) of the maintenance manual to aid in interpreting the ERAP information.
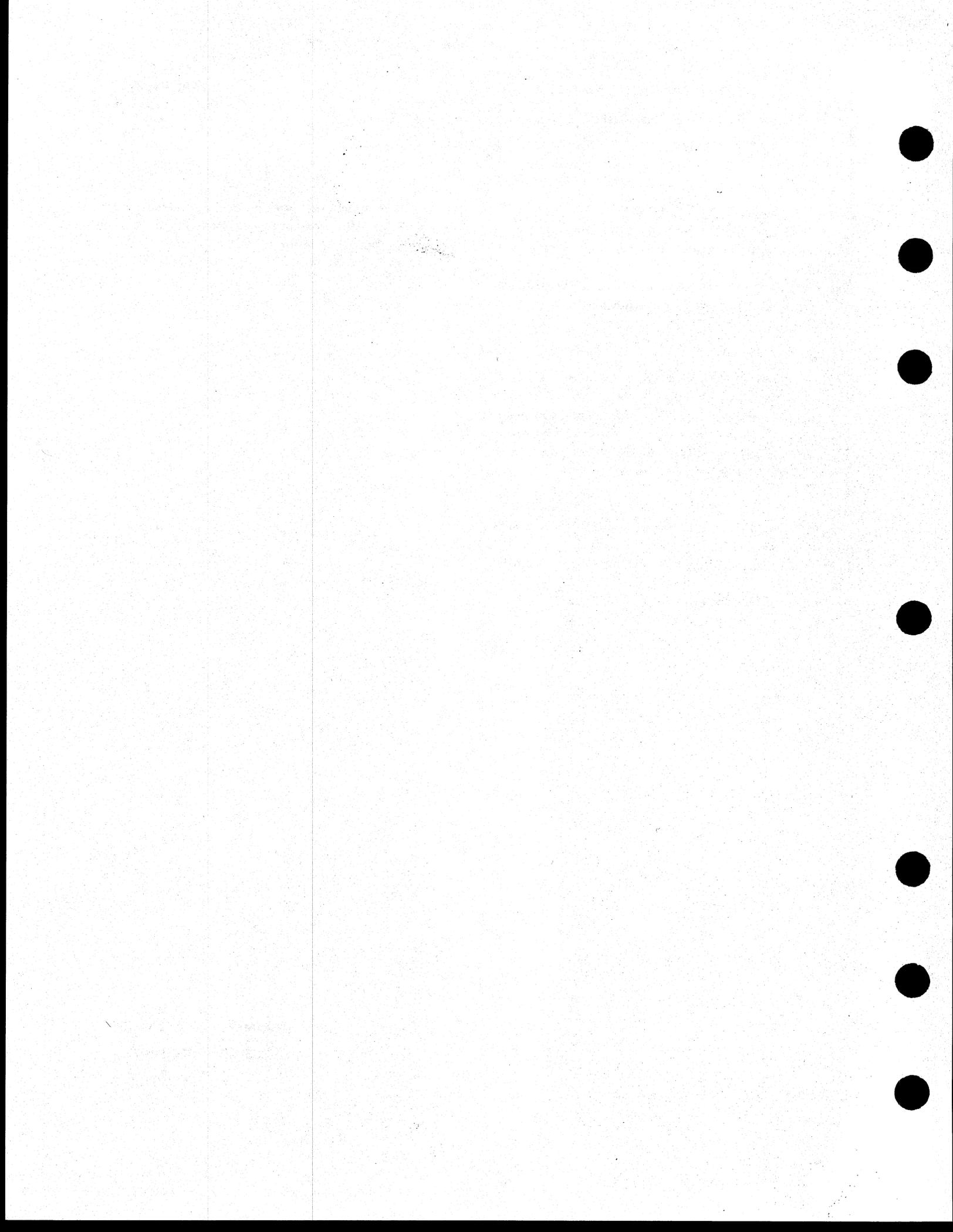
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0105	A	1	001
0107	A	1	001
0109	A	1	001
0153	A	1	001
0173	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	014	0159	A
4	016	0159	A
4	017	0159	A
2	007	1000	A
3	010	1193	A
3	011	1289	A
4	015	1515	A

001
(Entry Point A)
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Set Mode Selector to Proc Run (CE panel).

MAP DESCRIPTION:
This MAP attempts to sort out the reason the machine failed during CSIPL.
It uses the indicators shown in Note 1.

START CONDITIONS:
The CSIPL failed from the disk while attempting to load SSP.

LOGIC CARDS TESTED:
No FRU's

Is the Stop light on (CE subpanel)?
Y N

> **002**
> **Is Display Light bit 7 the only bit on in byte 0 (CE panel)?**
> **Y N**
>
> > **003**
> > **Is Console Check light on (operator panel)?**
> > **Y N**
> >
> > > **004**
> > > **Is this system configured for 62EH disks?**
> > > **Y N**

```
4   3   3   3   2
A   B   C   D   E
```

MAP 0149-1

005
- Press Reset (CE panel).
- Set the Address/Data switches to 'FFA1' (CE panel).
- Set Mode Selector to Proc Run (CE panel).
- Set CSIPL to Diskette (CE panel).
- Set MSIPL to Diskette (CE panel).
- Set all other CE panel switches to their down positions.
- Insert Diskette DIAGB1 and close the cover.
- Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Does the CSIPL sequence complete normally? (see Note 1)
Y N

> **006**
> - Set the Address/Data switches to '0000'.
> - Set all CE panel switches to their down position.
> - Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.
> - Set Mode Selector to Insn Step/Dply LSR (CE panel).
> - Set Mode Selector to Proc Run (CE panel).
> **Go to Page 3, Step 008, Entry Point B.**

007
Go To Map 1000, Entry Point A.

Note 1: When the CSIPL completes normally from Diskette, the System console should display the DCP Main menu.

B C D
1 1 1

CSIPL FAILURE

5340 SYSTEMS UNIT

PAGE 3 OF 4

MAP 0149-3

008
(Entry Point B)
Use the information in Display Lights byte 0 to determine which MAP you should go to. See Table 1.

Note: Compare byte 0 to the entries in Table 1 and go to the correct MAP.

Table 1

```
.------------------------------.
| Display Byte 0               |
| -----Bits-----      Go To    |
| 0 1 2 3 4 5 6 7      MAP      |
|------------------------------|
| 1 1 1 1 1 1 1 1      0311     |
| 0 1 1 1 1 1 1 1      0311     |
| 0 0 1 1 1 1 1 1      1505     |
| 0 0 0 1 1 1 1 1      1505     |
| 0 0 0 0 1 1 1 1      1505     |
| 0 0 0 0 0 1 1 1      1505     |
| 0 0 0 0 0 0 1 1      0190     |
| 0 0 0 0 0 0 0 1      0159     |
| 0 0 0 0 0 0 0 0      0173     |
|                              |
'------------------------------'
```

009
Is the card in the A-A2R2 position a single four wide card?
Y N

   010
   Go To Map 1193, Entry Point A.

011
The work station control expansion 'C' is installed.
Go To Map 1289, Entry Point A.

012
Is a wrap error displayed on the system console?
Y N

   013
   Are any Proc Interrupt lights On?
   Y N

      014
      Go To Map 0159, Entry Point A.

4 4
F G

A F G
1 3 3

CSIPL FAILURE

5340 SYSTEMS UNIT

PAGE 4 OF 4

MAP 0149-4

015
Go To Map 1515, Entry Point A.

016
Go To Map 0159, Entry Point A.

017
Go To Map 0159, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0107	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0149	A
2	004	0149	A
2	006	0305	A

001
(Entry Point A)
TO CAUSE A CSIPL FROM THE DISK AND LOAD THE DIAGNOSTIC CONTROL PROGRAM (DCP), PERFORM THE FOLLOWING:

-SET 'MODE SELECTOR' TO 'PROC RUN' (CE PANEL).
-SET 'ADDRESS/DATA' TO 'F800' (CE PANEL).
-SET ALL CE PANEL SWITCHES TO THEIR DOWN POSITIONS.

-PRESS 'LOAD' (OPERATOR PANEL).

WAIT ABOUT 45 SECONDS FOR THE CSIPL SEQUENCE TO COMPLETE.
IS THE 'SYS AVAIL' INDICATOR ON (SYSTEM CONSOLE)?
Y N

　　002
　　Go To Map 0149, Entry Point A.

003

IS THE 'MAIN MENU' DISPLAYED ON THE CONSOLE (SEE NOTE 1)?
Y N

MAP DESCRIPTION:
THIS MAP INSTRUCTS THE CE TO RUN THE MDI TESTS FOR THE DISKETTE.

START CONDITIONS:
THE CONDITIONS FOR GETTING TO THIS MAP ARE: CSIPL WORKS FROM THE DISK (LOADING SSP) AND FAILS FROM THE DISKETTE.

LOGIC CARDS TESTED:
NO FRU'S

NOTE 1:
WHEN THE CSIPL SEQUENCE COMPLETES, THE 'SYSTEM AVAILABLE' LIGHT SHOULD BE ON AND THE CONSOLE DISPLAYS THE DCP MAIN MENU.

2　2
A　B

03OCT77　　PN 4237441

EC 832850　　PEC 832742M

MAP 0153-1

004
Go To Map 0149, Entry Point A.

005
RETURN TO THIS MAP IF THE MDI TESTS DO NOT FIND THE PROBLEM. TO RUN THE MDI TESTS, PERFORM THE FOLLOWING:
SELECT MDI MAPS AND PRESS 'ENTER'.
SELECT DISKETTE AND PRESS 'ENTER'.

DID THE MDI TESTS FOR THE DISKETTE FIND THE PROBLEM?
Y N

  006
  Go To Map 0305, Entry Point A.

007
VERIFY THE SYSTEM IS REPAIRED AND RETURN IT TO THE SYSTEM OPERATOR.

WAIT FOR THE MDI MAPS TO EITHER FIND THE FAILING FRU, INSTRUCT YOU TO FOLLOW THE MDI MAPS, OR COMPLETE.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0105	A	1	001
0107	A	1	001
0149	A	1	001
0173	A	1	001
0175	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	0175	A
4	010	0199	A

001
(Entry Point A)
The wrap error codes will be displayed on the system console or recorded in control store.
Record the wrap errors for reference.

Is the wrap error displayed at the system console?
Y N

    002
    Control storage locations x'07A0' through '07BF' will contain the wrap errors.
    Record the wrap error codes as they are displayed from the CE panel.

    To display control storage locations x'07A0' through X'07BF', perform the following:

    -Press Reset (CE panel).
    -Set the Address/Data switches to '07A0' (CE panel).
    -Set Mode Selector to Alter Mar IRPT (CE panel).
    -Set Stor Sel to Ctl (CE panel).
    (Step 002 continues)

MAP DESCRIPTION:
This is a Wrap Error MAP.

START CONDITIONS:
The indications point to a wrap error and this MAP will review the wrap error symptoms.

LOGIC CARDS TESTED:
For systems without A-A1B2; A-A1K2 and A-A1L2
For systems with A-A1B2; A-A1G2 and A-A1H2

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3
A

B C

(Step 002 continued)

–Press CE Start (CE panel).

This first depression of CE Start loads the MAR with control store address 07A0.

–Set Mode Selector to Dply Stor (CE panel).

Press CE Start to display consecutive locations. Each two consecutive locations hold one wrap error indicator. The control store locations should be in a form X'AABBCCDD' where AA is the device ID, BB is the device address, CC is the unit address and DD is the wrap module number.

–Set the Address/Data switches to '0000' (CE panel).

Set all switches to the Down position.

–Set Mode Selector to Proc Run (CE panel).

Are there any wrap error codes in the control storage locations?

Y N

   003

   Go To Map 0175, Entry Point A.

004

CSIPL failed with a wrap error but a wrap error is not displayed on the system console. You will be sent to the work station MAPs to attempt to find the problem there. Record this MAP and step number and be sure to return to this point when you reach the ending point in the work station MAPs. If you have a single four wide card installed in the A-A2R2 position (work station control expansion 'C' installed), go to MAP 1289, Entry Point A, if not, go to MAP 1193, Entry Point A.

Did the work station MAPs find the problem?

Y N

   005

   Is there a card in A-A1B2 location?

   Y N

      006

      Bad card

      A-A1K2

      ---or---

      A-A1L2

B C

B C   MAP 0159-2

007

Bad card

A-A1G2

---or---

A-A1H2

008

Verify that the system is repaired and return to the system operator.

009

Record this MAP and step number, then use the wrap error codes displayed to determine which MAP in Chart A should be used.

If more than one wrap error is displayed, use all the referenced MAPs in the order that they appear in Chart A to determine the problem.

Return to this point if the problem is not found.

Chart A

Wrap error	Device	MAP
020000XX	MS processor	0190,A
A0A000XX	Disk (62EH)	0900,A
A0B000XX	Disk (62EH)	0900,A
A1A000XX	Disk (62PC)	1000,A
A1A001XX	Disk (62PC)	1000,A
A1A002XX	Disk (62PC)	1000,A
A1A003XX	Disk (62PC)	1000,A
E0E000XX	Line printer (5211)	0181,A
E2E000XX	Line printer (3262)	0181,A
CAC000XX	Work station attachment	1193,A
C0C0XXXX	Work station	1193,A
10C0XXXX	Work station Controller*	1289,A
C1C0XXXX	Workstation*	1289,A
D0D000XX	Diskette (33FD/53FD)	0179,A
D1D000XX	Diskette (72MD)	0179,A
80XX01XX	Data comm line 1 (2-line)	0183,A
80XX02XX	Data comm line 2 (2-line)	0183,A
1080XXXX	Data comm Controller	0184,A
82XX01XX	Data comm MLCA Line 1	0184,A
82XX02XX	Data comm MLCA Line 2	0184,A
82XX03XX	Data comm MLCA Line 3	0184,A
82XX04XX	Data comm MLCA Line 4	0184,A
525000XX	MICR attach	4100,A

(Step 009 continues)

(Step 009 continued)

```
|-------------------------------|
|  Example of WRAP display      |
|-------------------------------|
|******** WRAP ERROR ********|
|                               |
|02000001   80800103            |
|PRESS ENTER TO CONTINUE        |
|            19 ERROR           |
 -------------------------------
```

*Work station control expansion
'C' is installed.

Did the referenced MAP find the problem?
Y N

010
Go to the free-lance MAP and attempt to determine
the failing FRU.
Go To Map 0199, Entry Point A.

011
Verify that the system is repaired and return to the
system operator.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001
0149	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	017	0149	A
2	010	0159	A
2	011	0159	A
3	021	0159	A
3	024	0303	A
3	025	0311	A
2	008	1193	A
3	019	1193	A
2	009	1289	A
3	020	1289	A

001
(Entry Point A)
To cause a CSIPL from the diskette and run all the wraps, perform the following:
- Set Mode Selector to Proc Run (CE panel).
- Set Address/Data switches to X'0000'.
- Set MSIPL to Diskette (CE panel).
- Set CSIPL to Diskette (CE panel).
- Set all other CE panel switches to their down position. Insert diskette DIAGB1.
- Press Load (operator panel).

Wait a few seconds for the CSIPL sequence to start.
Is Load light on (operator panel)?
Y N

> **002**
> Wait about 90 seconds for the CSIPL sequence to complete. (See Note 1).
> **Is the System Available indicator On (system console)?**
> **Y N**

MAP DESCRIPTION:
This MAP attempts to sort out the reason the machine failed during CSIPL.
It uses the indicators shown in Note 1.

START CONDITIONS:
The MSIPL failed from the disk while attempting to load SSP, and did not supply any indicators that could be used to isolate the problem.

LOGIC CARDS TESTED:
No FRU's

Note 1: If the system acts like it is in a loop, wait an additional 3 minutes.

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```
3   2   2
A   B   C
```

003
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Set Mode Selector to Proc Run (CE panel).
Is the Stop light on (CE subpanel)?
Y N

> **004**
> **Is Display Light bit 7 the only bit On in Byte 0 (CE panel)?**
> Y N
>
> > **005**
> > **Is Console Check light on (operator panel)?**
> > Y N
> >
> > > **006**
> > > Use the information in Display Lights byte 0 to determine which MAP you should go to. See Table 1.
> > >
> > > Note 1:
> > > Compare byte 0 to the entries in Table 1 and go to the correct MAP.

Table 1	
Display Byte 0 \n -----Bits----- \n 0 1 2 3 4 5 6 7	Go To \n MAP
1 1 1 1 1 1 1 1	0311
0 1 1 1 1 1 1 1	0311
0 0 1 1 1 1 1 1	1505
0 0 0 1 1 1 1 1	1505
0 0 0 0 1 1 1 1	1505
0 0 0 0 0 1 1 1	1505
0 0 0 0 0 0 1 1	0190
0 0 0 0 0 0 0 1	0159
0 0 0 0 0 0 0 0	0175

D E F

007
Is the card in the A-A2R2 position a single four wide card?
Y N

> **008**
> Go To Map 1193, Entry Point A.

009
The work station control expansion 'C' is installed.
Go To Map 1289, Entry Point A.

010
Go To Map 0159, Entry Point A.

011
Go To Map 0159, Entry Point A.

012
Is the Main Menu displayed on the console?
Y N

> **013**
> **Is a wrap error displayed at the console?**
> Y N
>
> > **014**
> > **Is Console Check light on (operator panel)?**
> > Y N
> >
> > > **015**
> > > **Is Processor Check light on (operator panel)?**
> > > Y N
> > >
> > > > **016**
> > > > The indications are that there is a problem at the system console. Go to the terminal MAPs.
> > >
> > > **017**
> > > A processor check occurred while CSIPL'ing.
> > > **Go To Map 0149, Entry Point A.**

018
A console check occurred while CSIPL'ing.
**Is the card in the A-A2R2 position a single
four wide card?**
Y N

   019
   Go To Map 1193, Entry Point A.

020
The work station control expansion 'C' is
installed.
Go To Map 1289, Entry Point A.

021
MAP 0159 reviews the wrap errors.
Go To Map 0159, Entry Point A.

022
Return to this point in the MAPs if the MDI tests do
not find the problem.
Select MDI MAPs and press Enter .
Select disk and press Enter (see Note 2).

Wait for the MDI MAPs to find the problem or until
they complete.
Did the disk MDI MAPs run correctly?
Y N

   023
   Follow the instructions from the MDI MAPs and
   repair the problem.

024
MSIPL failed from the disk and worked from the
diskette.
Go To Map 0303, Entry Point A.

025
Go To Map 0311, Entry Point A.

Note 2: You have to select the correct disk drive
depending on your system configuration. If your
system has two disks, select disk drive A and then drive
B.
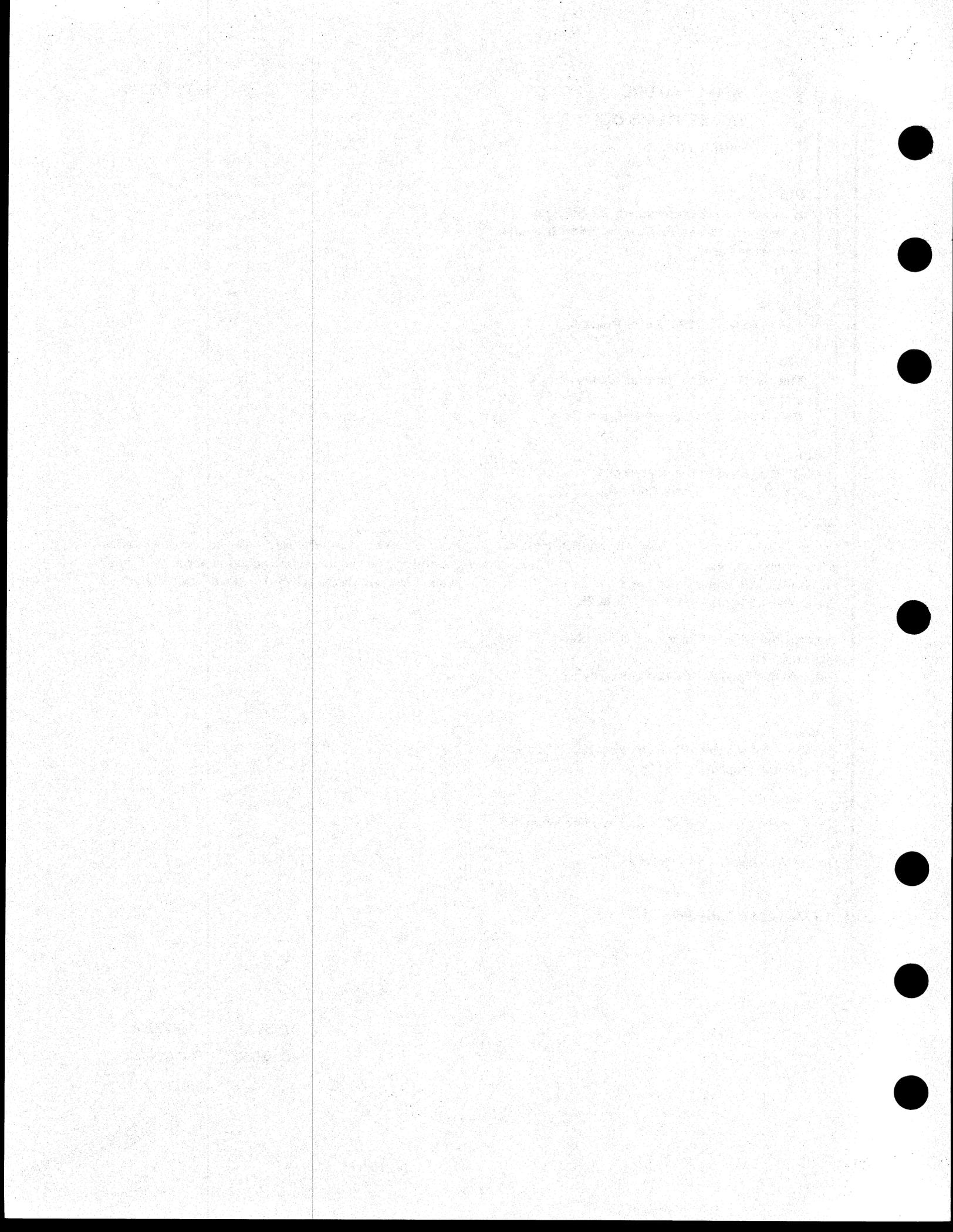
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0159	A	1	001
0173	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	018	0190	A
4	021	0199	A
2	003	1193	A
4	013	1193	A
2	004	1289	A
4	014	1289	A

001
(Entry Point A)
This MAP instructs you to run some diagnostics.
If the diagnostic does not find the problem, return to this MAP to attempt the next procedure.

The MAPs attempt to verify that the system console can be used by attempting to CSIPL a B2 diskette.

(This should cause a message stating: this diskette cannot be CSIPL'ed. Place a DIAGB1 diskette in the drive to CSIPL.).

To cause a CSIPL from the diskette and bypass the wrap tests, do the following:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to 'FF00' (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.

Insert diskette DIAGB2.

-Press Load (operator panel).

(Step 001 continues)

MAP DESCRIPTION:
This MAP runs some of the device MDI MAPs to isolate the reason the machine failed during CSIPL.

START CONDITIONS:
The CSIPL failed from the disk and diskette and there are no indicators to aid us in isolating the problem.

LOGIC CARDS TESTED:
For a system without A-A1B2 card A-A1N2 and A-A1F2, A-A1K2, A-A1L2.
For a system with A-A1B2 card A-A1J2 and A-A1C2, A-A1G2, A-A1H2.

(Step 001 continued)

Did the message appear at the system console?

Y N

  002

  Go to the work station MAPs to see why the system
  console could not be used.

  **Is the card in the A-A2R2 position a single four
  wide card?**

  Y N

    003

    Go To Map 1193, Entry Point A.

  004

  The work station control expansion 'C' is installed.

  Go To Map 1289, Entry Point A.

005

The MSP tests will be run.

If the MSP tests stop with a message to Go to MAP
0190, Entry Point B, return to this question in the MAPs
and answer no. That exit is the normal ending point for
the MSP tests.

-Set Mode Selector to Proc Run (CE panel).
-Set Address/Data to X'EE00'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down position.
Insert diskette DIAGB1.
-Press Load (operator panel).
Look at the system console for information.
Follow the instructions on the display.

**Did the MSP test instruct you to go to another
MAP or locate the problem?**

Y N

  006

  **Did the MSP test stop with 'T0260' on the
  system console?**

  Y N

5 5 3
A B C

007
To cause a CSIPL from the diskette and bypass the wrap tests, perform the following:

This portion of the MAP runs the disk MDI tests.

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to 'FF00' (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.

Insert a DIAGB1 diskette.

-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to complete.
Is the System Available indicator On (system console)?
Y N

> **008**
> -Set Mode Selector to Insn Step/Dply LSR (CE panel).
> -Set Mode Selector to Proc Run (CE panel).
> **Is the Stop light on (CE subpanel)?**
> Y N
>
> > **009**
> > **Is Display Light bit 7 the only bit on in byte 0 (CE panel)?**
> > Y N
> >
> > > **010**
> > > **Is Console Check light on (operator panel)?**
> > > Y N

4 4 4 4 4
D E F G H

E F G H
3 3 3 3
CSIPL FAILURE
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D
3
MAP 0175-4

011
Use the information in Display Lights byte 0 to determine which MAP you should go to. See Table 1.

Note 1: Compare byte 0 to the entries in Table 1 and go to the correct MAP.

```
            Table 1
| Display Byte 0   |         |
| -----Bits-----   |Go To    |
| 0 1 2 3 4 5 6 7  | MAP     |
|------------------+-------  |
| 1 1 1 1 1 1 1 1  | 0311    |
| 0 1 1 1 1 1 1 1  | 0311    |
| 0 0 1 1 1 1 1 1  | 1505    |
| 0 0 0 1 1 1 1 1  | 1505    |
| 0 0 0 0 1 1 1 1  | 1505    |
| 0 0 0 0 0 1 1 1  | 1505    |
| 0 0 0 0 0 0 1 1  | 0190    |
| 0 0 0 0 0 0 0 1  | 0159    |
| 0 0 0 0 0 0 0 0  | 0175,B  |
|                                |
```

012
Is the card in the A-A2R2 position a single four wide card?
Y N

    013
    Go To Map 1193, Entry Point A.

014
The work station control expansion 'C' is installed.
Go To Map 1289, Entry Point A.

015
Go to Step 019, Entry Point B.

016
Go to Step 019, Entry Point B.

017
Is the Main Menu displayed on the console?
Y N

    018
    Go To Map 0190, Entry Point A.

019
(Entry Point B)
Do you come to this step because of a processor check with no lights of byte 0 On?
Y N

    020
    Select MDI MAPs and press Enter.
    Select disk and press Enter.

    Wait for the MDI MAPs to find the problem or until they complete.
    Did the disk MDI MAPs find the problem?
    Y N

        021
        If the machine is processor checking, use the theory of operations manual to attempt to isolate the reason for the processor check.
        Go To Map 0199, Entry Point A.

022
Repair the problem, verify the system functions correctly and return it to the system operator.

023
The following information includes suggestions that might aid you in finding a machine problem.

Use the MAP Description and the supplemental column (right column) information in the MAPs to aid you in your analysis of the problem.

Look at the error recordings using ERAP. Use the Error Recording Information (80-000) to help analyze the Error History Table information for the different areas. If the error recording information is applicable, go to the MAP indicated. If the error recording information fails to fix the problem, return here.

If the error recording information fails to fix the problem or an error recording does not exist, go to the Intermittent Failure Replacement List MAP (5001).

024
Is there a card in A-A1B2 location?
Y N

  025
  Note: Before you install an A-A1F2 card, you must add jumpers to configure it for the correct control storage size. Use the jumper(s) from the bad card. See VOL D (FSL, PC024) for the location of the jumpers.
  Bad card
  A-A1N2
  ---or---
  A-A1F2
  ---or---
  A-A1K2
  ---or---
  A-A1L2

026
Note: Before you install an A-A1C2 card, you must add jumpers to configure it for the correct control storage size. Use the jumper(s) from the bad card. See Vol D (FSL, PC024) for the location of the jumpers.
Bad card
A-A1J2
---or---
A-A1C2
---or---
A-A1G2
---or---
A-A1H2.

027
Follow the instructions in the display station.
-then-
Verify the system works and return to operator.

K
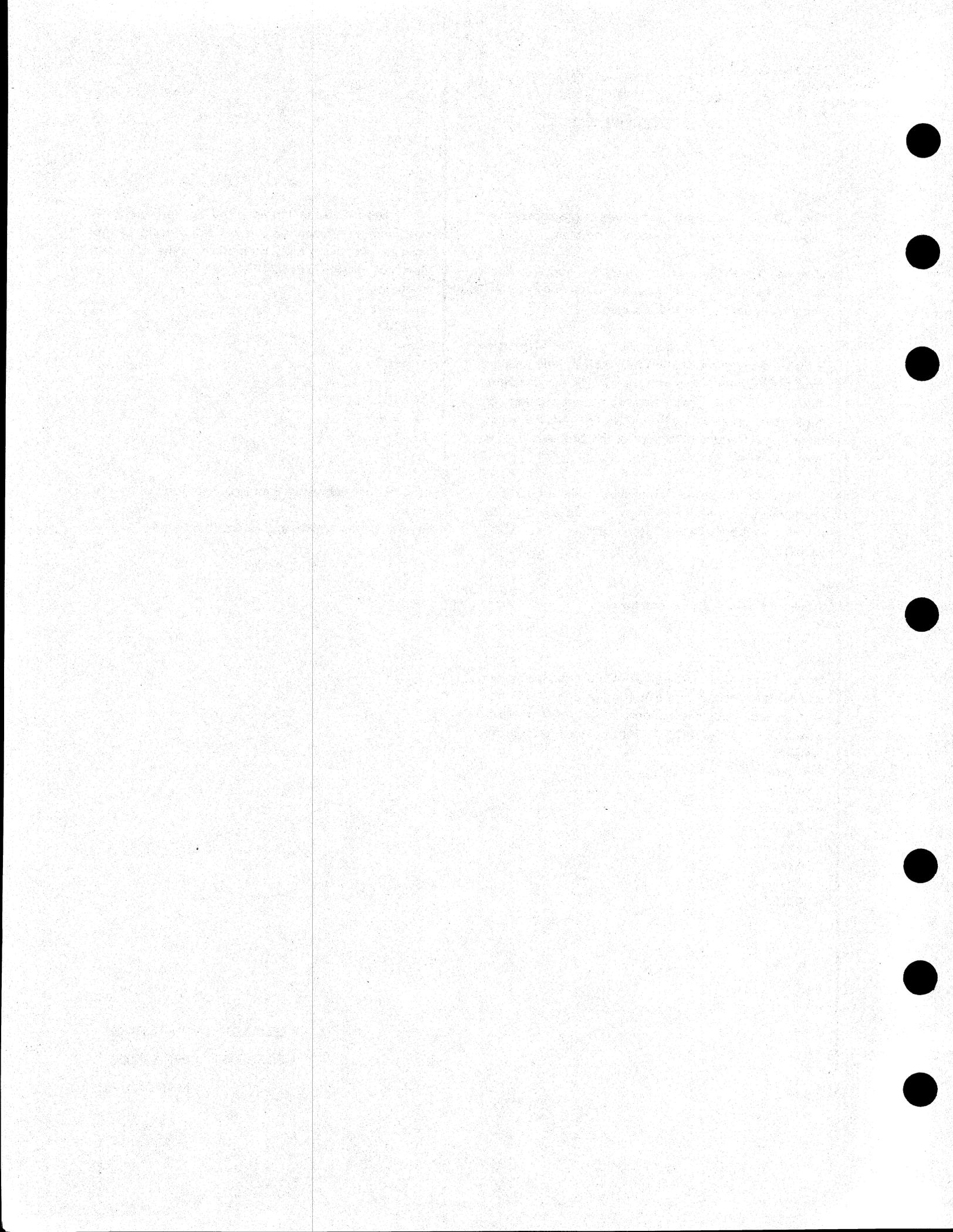
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0159	A	1	001
0199	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	0101	B
2	005	0101	B
3	007	0101	B

001
(Entry Point A)
The following is a list of obvious problems that cause the diskette to fail:

```
The belt is off of the pulley.
The pulley is not turning or
is slipping.
The cover is not closed.
The motor is not turning.
The head does not load.
The diskette is not inserted
correctly.
The cables for attachment or power
are not seated.
```

Is the problem with the diskette obvious?
Y N

MAP DESCRIPTION:
This MAP instructs the CE to run the MDI tests for the diskette.

START CONDITIONS:
The CE decided that the failing area was the diskette.

LOGIC CARDS TESTED:
No FRU's

3 2
A B

002

To cause an MSIPL from the disk and load the diagnostic control program (DCP), perform the following:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to 'F800' (CE panel).
-Set all CE panel switches to their down position.

-Press Load (operator panel).

Wait about 2 minutes for the CSIPL sequence to complete.

Is the System Available indicator On (system console)?

Y N

003
This path cannot be taken unless the CSIPL sequence can be completed.
Go To Map 0101, Entry Point B.

004

Note 1: When the CSIPL sequence completes, the System Available light should be on and the console displays the DCP Main Menu.

Is the Main Menu displayed on the console (see Note 2)?

Y N

005
This path cannot be taken unless the CSIPL sequence can be completed.
Go To Map 0101, Entry Point B.

3
C

006

Select MDI MAPs and press Enter.
Select diskette and press Enter.

Did the diskette MDI tests find the problem?
Y N

| **007**
| Go back to the system entry MAP and attempt
| the other path.
| **Go To Map 0101, Entry Point B.**

008
Verify that the system is repaired and return it to the
system operator.

009
Repair the obvious problem and return the machine to
the system operator.

Wait for the MDI MAPs to either find the failing FRU,
instruct you to follow the MDI MAPs, or complete.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0107	A	1	001
0159	A	1	001
0199	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	006	0101	B
3	008	0101	B
5	017	0101	B
5	019	0101	B
3	010	0701	A
3	012	0707	A
5	021	0801	A
6	023	0804	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP instructs the CE to do some preparatory checks on the printer and to run the MDI tests for the printer.

START CONDITIONS:
The CE decided that the failing area was the line printer.

LOGIC CARDS TESTED:
No FRU's

Is 3262 Printer installed?
Y N

002
Some symptoms of printer power problems are:

The printer does not power on when the system is powered on.
The printer remains powered on when the system is powered off.
The printer powers on then powers off when system power is turned on.
Are there any printer power problems indicated?
Y N

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4 3 2
A B C

003
Obvious problems in the printer are:

The forms are jammed.
The type belt is broken.
The ribbon is torn or jammed.
Print quality is bad.
Unusual noise, smoke or torn paper exists.
Are there any obvious problems with the printer?
Y N

> **004**
> **Is the 5211 line printer going to be serviced using concurrent maintenance?**
> Y N
>
> > **005**
> > To cause a CSIPL from the diskette and bypass the wrap tests, perform the following:
> >
> > -Set Mode Selector to Proc Run (CE panel).
> > -Set the Address/Data switches to 'FF00' (CE panel).
> > -Set MSIPL to Diskette (CE panel).
> > -Set CSIPL to Diskette (CE panel).
> > -Set all other CE panel switches to their down positions.
> >
> > Insert diskette DIAGB1.
> >
> > -Press Load (operator panel).
> >
> > Wait about 45 seconds for the CSIPL sequence to complete.
> > Note: If the CSIPL sequence stops with a display on the system console, follow instructions in the display.
> > **Is the System Available indicator On (system console)?**
> > Y N

3 3 3 3
D E F G

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006
This path cannot be taken unless the CSIPL
sequence can be completed.
Go To Map 0101, Entry Point B.

007

Note 1: When the CSIPL sequence completes, the
System Available light should be On and the console
displays the DCP Main Menu.

**Is the Main Menu displayed on the console
(see Note 1)?**
Y N

   008
   This path cannot be taken unless the CSIPL
   sequence can be completed.
   Go To Map 0101, Entry Point B.

   009
   Select MDI MAPs and press enter.
   Select line printer and press enter.

   Wait for the MDI MAPs to either find the
   failing FRU, instruct you to follow the MDI
   MAPs, or complete.

010
Go To Map 0701, Entry Point A.

011
Go to 5211 line printer entry MAP 0010, Entry Point
A.

012
Go To Map 0707, Entry Point A.

013

Some symptoms of printer power problems are:

The printer does not power on when the system is
powered on.
The printer remains powered on when the system is
powered off.
The printer powers on then powers off when system
power is turned on.

Are there any printer power problems indicated?
Y N

A 3262 line printer is installed.

   014

   Obvious problems in the printer are:

   The forms are jammed.
   The type belt is broken.
   The ribbon is torn or jammed.
   Print quality is bad.
   Unusual noise, smoke or torn paper exists.

   Are there any obvious problems with the printer?
   Y N

      015

      Is the 3262 line printer going to be serviced
      using concurrent maintenance?
      Y N

         016

         To cause a CSIPL from the diskette and
         bypass the wrap tests, perform the following:

         -Set Mode Selector to Proc Run (CE panel).
         -Set the Address/Data switches to 'FF00' (CE
         panel).
         -Set MSIPL to Diskette (CE panel).
         -Set CSIPL to Diskette (CE panel).
         -Set all other CE panel switches to their down
         positions.

         Insert diskette DIAGB1.

         (Step 016 continues)

6 5 5
H J K

(Step 016 continued)

-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to
complete.
Note: If the CSIPL sequence stops with a display on the
       system console, follow instructions in the display.
**Is the System Available indicator On (system
console)?**
Y N

    017
    This path cannot be taken unless the CSIPL
    sequence can be completed.
    Go To Map 0101, Entry Point B.

018

Note 1: When the CSIPL sequence completes, the
System Available light should be On and the console
displays the DCP Main Menu.

**Is the Main Menu displayed on the console
(see Note 1)?**
Y N

    019
    This path cannot be taken unless the CSIPL
    sequence can be completed.
    Go To Map 0101, Entry Point B.

020
Select MDI MAPs and press Enter.
Select line printer and press enter.

Wait for the MDI MAPs to either find the failing
FRU, instruct you to follow the MDI MAPs, or
complete.

021
Go To Map 0801, Entry Point A.

022
Go to 3262 line printer entry MAP 0010, Entry Point A.

023
Go To Map 0804, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1701	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	0101	B
9	044	0101	B
3	012	0101	B
6	030	0101	B
1	002	0185	A
9	047	0500	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP instructs the CE to run the MDI tests for data communications (MLCA).

START CONDITIONS:
A data communications wrap error occurred or communications not working on one or more lines.

LOGIC CARDS TESTED:
A-B3C2, A-B3D2, A-B3E2
A-B3F2, A-B3G2, A-B3H2, A-B3J2 (if installed)
For a system without A-A1B2 card,
A-A1K2, A-A1Q2
For a system with A-A1B2 card,
A-A1G2, A-A1L2

Is the system available for dedicated maintenance?
Y N

002
Concurrent maintenance
Go To Map 0185, Entry Point A.

003
Are there any communications wrap errors (ex. 1080XXXX, 8288XXXX, 8284XXXX, 8282XXXX, 8281XXXX)?
Y N

2 2
A B

004

Go to Step 008, Entry Point D.

005

Does the wrap error include a 1080XXXX entry?

Y N

006

Is this a new installation?

Y N

007

(Entry Point E)

Is there more than one communication line
wrap error (Ex. 8288XXXX, 8282XXXX)?

Y N

008

(Entry Point D)

-Set Mode Selector to Proc Run (CE panel).

-Set the Address/Data switches to FF00

-Set MSIPL to Diskette (CE panel).

-Set CSIPL to Diskette (CE panel).

Load with Diskette Diag B1.

Wait approximately one minute for the system
to CSIPL.

**Did the Main Option Menu appear on the
console?**

Y N

009

This path cannot be taken unless the CSIPL
sequence can be completed.

Go To Map 0101, Entry Point B.

010

-Select MDI MAPs option.

-Select comm line (1-4) for the failing
communication line. Follow the MDI
instructions to fix the failing area or replace the
communications adapter card in the failing line.

8 6 3
C D E

E
2

011
-Set Power to 0 (operator panel).
Remove all communication adapter cards from board positions: A-B3F2 (Line 1), A-B3G2 (Line 2), A-B3H2 (Line 3), A-B3J2 (Line 4) if installed. Reinstall one of the adapter cards (See Note 1).
Record each card's location as they must be installed in their original locations later (see Note 2).

-Set Power to 1 (operator panel).
-Set the Address/Data switches to FF00
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
Load with Diskette Diag B1.
Wait approximately one minute for the system to CSIPL.

Did the Main Option Menu appear on the console?
Y N

> **012**
> This path cannot be taken unless the CSIPL sequence can be completed.
> **Go To Map 0101, Entry Point B.**

013
-Select MDI MAPs option.
-Select comm line (1-4) for the communication line adapter card most recently installed (see Note 3).
(If the MDI's fail, answer 'NO' to the following question and ignore any instructions or FRU callouts on the system console.)

Did the tests run OK?
Y N

> **014**
> **Is there more than one line of communications installed in this system?**
> Y N

5 4 4
F G H

Note 1: There is an error affecting more than one communication line. Isolation will be done by removing all communication lines installed and installing cards one at a time.

Note 2: Strapping options on the adapter cards cause them to operate in different modes. Card swapping without changing the strapping options could cause a hardware error.

Note 3: A-B3F2 = Comm Line 1
         A-B3G2 = Comm Line 2
         A-B3H2 = Comm Line 3
         A-B3J2 = Comm Line 4

015
Probe the following pins:

A-B3A3B11 (131 MS Clock)
A-B3A3B06 (100 NS Clock)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

016
Go to Step 020, Entry Point G.

017
Bad card
Communication Adapter Card A-B3F2, G2, H2, or J2
---or---
Bad card
A-B3C2

018
-Set Power to 0 (operator panel).
Remove the failing comm adapter card just tested.
Install another comm adapter card into its original
board position.
-Set Power to 1 (operator panel).
-Set the Address/Data switches to FF00
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
Load with Diskette Diag B1.
Wait approximately one minute for the system to
CSIPL.
-Select MDI MAPs option.
-Select comm line (1-4) for the communication line
adapter card most recently installed (see Note 3).
(If the MDI's fail, answer 'NO' to the following question
and ignore any instructions or FRU callouts on the
system console.)

Did the tests run OK?
Y N

5
J K

019
Probe the following pins:

A-B3A3B11 (131 MS Clock)
A-B3A3B06 (100 NS Clock)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

020
(Entry Point G)

Is there a card in A-A1B2 location?
Y N

021
Remove the cable from A-B3A3 and Probe the
following pins:

A-A1K2S06 (131 MS Clock - source)
A-A1Q2M13 (100 NS Clock - source)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

022
If 131 MS Clock is failing, Bad card A-A1K2.
If 100 NS Clock is failing, Bad card A-A1Q2.

023
Bad cable
A-B3A3.

5 5
L M

F J L M
3 4 4 4

COMM WRAP ERROR

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MAP 0184-5

024
Remove the cable from A-B3A3 and Probe the
following pins:

A-A1G2S06 (131 MS Clock - source)
A-A1L2M13 (100 NS Clock - source)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **025**
> If 131 MS Clock is failing, Bad card A-A1G2.
> If 100 NS Clock is failing, Bad card A-A1L2.

026
Bad cable
A-B3A3.

027
Bad card
A-B3C2.

028
The first communications adapter card reinstalled
and tested was bad. Replace it.

029
(Entry Point B)
-Set Power to 0 (operator panel).
Install any one of the communications adapter cards
removed earlier into its original location (See Note 4).
-Set Power to 1 (operator panel).
-Set the Address/Data switches to FF00
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
Load with Diskette Diag B1.
Wait approximately one minute for the system to
CSIPL.
Did the Main Option Menu appear on the console?
Y N

6 6
N P

Note 4: Install one communication adapter card at a
time and run MDI's. When the failing card is installed,
the MDI's will fail. If the MDI's ran correctly on all of
the adapter cards then one of the cards was unseated.

D N P
2 5 5

COMM WRAP ERROR

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MAP 0184-6

030

This path cannot be taken unless the CSIPL
sequence can be completed.
Go To Map 0101, Entry Point B.

031

-Select MDI MAPs option.
-Select comm line (1-4) for the communication line
adapter card most recently installed (see Note 3).

Did the tests run OK?
Y N

> **032**
>
> The communication adapter card just tested is
> bad. Replace it

033

**Have you replaced and run MDI's on all
communication adapter cards previously
removed?**
Y N

> **034**
>
> **Go to Page 5, Step 029, Entry Point B.**

035

The MDI's ran correctly on all communication lines.
One of the adapter cards were unseated. Run MDI's
on all installed lines again to verify that all is OK.

036

Check the device address switches on the failing line or
lines indicated by the wrap errors. Each comm adapter
card must have a unique device address (see Chart 1).

Note 3: A-B3F2 = Comm Line 1
        A-B3G2 = Comm Line 2
        A-B3H2 = Comm Line 3
        A-B3J2 = Comm Line 4

```
                 C H A R T    1
.-----------------------------------------------------.
| Device addr switch  |Board feature wires required   |
| on comm adapter card|depending on device address    |
|                     |selected.                      |
|---------------------+-------------------------------|
|Device Addr Selection|Jumper adapter microinterrupt  |
|                     |request to interrupt level     |
```

(Step 036 continues)

(Step 036 continued)

```
|              Device  |                    Interrupt|
| 5      6     Address |Jumper (see note)       Level|
|----------------------------------------------------|
| Off    Off   10       A-B3XXJ09 TO A-B3C2M05    3   |
| Off    On    20       A-B3XXJ09 TO A-B3C2M05    3   |
| On     On    40       A-B3XXJ09 TO A-B3C2M05    3   |
| On     Off   80       A-B3XXJ09 TO A-B3C2P05    2   |
|----------------------------------------------------|
| Each communications line must use a different de-  |
| vice address. With the exception of the high-speed |
| line, the lines may use any address, but the       |
| device address must be the same as the address     |
| selected in the line's configuration record. If a  |
| high-speed line is installed (line speed greater   |
| than 9600 BPS), this line must use device address  |
| 80. A general rule to follow is to start with      |
| address 10 and use address 80 last. If you use     |
| address 80, the comm adapter card must be feature  |
| wired for interrupt level 2.                       |
| Note: XX is communications adapter F2 (line 1),    |
|       G2 (line 2), H2 (line 3), or J2 (line 4).    |
 ----------------------------------------------------
```

Are the switches set correctly?
Y N

| **037**
| Set switches.

038
Check the interrupt level board feature wires. They
must be compatible with configuration options selected
(see Chart 1).

Are the feature wires installed correctly?
Y N

| **039**
| Fix feature wires.

040
Go to Page 2, Step 007, Entry Point E.

041
-Set Power to 0 (operator panel).
-Reseat cards A-B3C2, A-B3D2, A-B3E2
           A-B3F2, A-B3G2, A-B3H2, A-B3J2 (if installed).
-Reseat cables A-B3A2, A-B3A3, A-B3A4
-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to 0000
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
Load with Diskette Diag B1.

Did the 1080XXX wrap error go away?
Y N

> **042**
> -Set Power to 0 (operator panel).
> Remove all communication adapter cards from board positions: A-B3F2, A-B3G2, A-B3H2, A-B3J2 (if installed).
> Record each card's location as they must be installed in their original locations later (See Note 2).
>
> -Set Power to 1 (operator panel).
> -Set the Address/Data switches to 0000
> -Set MSIPL to Diskette (CE panel).
> -Set CSIPL to Diskette (CE panel).
> Load with Diskette Diag B1.
>
> **Did the 1080XXX wrap error go away?**
> **Y N**
>
>> **043**
>> -Set Power to 0 (operator panel).
>> Re-install communications adapter cards into their original locations (See Note 3).
>> -Set Power to 1 (operator panel).
>> -Set the Address/Data switches to FF00
>> Load with Diskette Diag B1.
>> Wait approximately one minute for the system to CSIPL.
>>
>> (Step 043 continues)

Note 2: Strapping options on the adapter cards cause them to operate in different modes. Card swapping without changing the strapping options could cause a hardware error.

Note 3: A-B3F2 = Comm Line 1
        A-B3G2 = Comm Line 2
        A-B3H2 = Comm Line 3
        A-B3J2 = Comm Line 4

1 1
1 0
Q R

(Step 043 continued)

Did the Main Option Menu appear on the console?

Y N

   044

   This path cannot be taken unless the CSIPL sequence can be completed.

   Go To Map 0101, Entry Point B.

045

(Entry Point F)

–Set Power to 1 (operator panel).

Connect the CE multimeter from the pins in Chart A of this MAP to return (A–B3L2D08) and compare the readings to the low limits in Chart A.

Chart A

Voltage	A-B3 Board Pin	Low Limit
+5V	A-B3L2D03	+4.5V
+8.5V	A-B3L2B11	+7.6V
+12V	A-B3E2B11	+10.8V
-5V	A-B3L2B06	-4.5V
-12V	A-B3L2D07	-10.8V
Return	A-B3L2D08	X

Does the CE multimeter read more than the low limit for every level?

Y N

   046

   –Set Power to 1 (operator panel).

   Connect the CE multimeter from the pins in Chart B of this MAP to ground and compare the readings to the low limits in Chart B.

Chart B

Voltage	PDTB-2 Pin	Low Limit
+5V	1,2	+4.5V
+8.5V	3	+7.6V
+12V	4	+10.8V
-5V	5	-4.5V
-12V	6	-10.8V

   Does the CE multimeter read more than the low limit for every level?

   Y N

      047

      Go To Map 0500, Entry Point A.

1 1
0 0
S T

R S T
8 9 9

COMM WRAP ERROR

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MAP 0184-10

048
Refer to FSL page YA460.

Are all the minibus connectors correctly installed on the A-B3 board?
Y N

> **049**
> -Set Power to 0 (operator panel).
> Check all connectors for proper location and connections.

050
Bad power distribution cabling or bad connection at PDTB-2. Tighten all screws at PDTB-2. Return to Entry Point F and repeat measurements after fix.

051
All communications power supply voltages are OK.
-Select MDI MAPs option.
-Select comm line (1-4) for any comm line installed.
Follow the MDI instructions to isolate to the failing MLCA controller FRU.

052
(Entry Point C)
-Set Power to 0 (operator panel).
Install one of the communications adapter cards into its original location: A-B3F2 (Line 1), or A-B3G2 (Line 2), or A-B3H2 (Line 3), or A-B3J2 (Line 4).

-Set Power to 1 (operator panel).
-Set the Address/Data switches to 0000
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
Load with Diskette Diag B1.
Wait approximately one minute for the system to CSIPL.

Is there a 1080XXXX wrap error?
Y N

1 1
1 1
1 1
U V

Q U V
8 1 1
  0 0

COMM WRAP ERROR

5340 SYSTEMS UNIT

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MAP 0184-11

053
Go to Page 10, Step 052, Entry Point C.

054
Is there more than one communications adapter card to be checked (A-B3F2, G2, H2, J2)?
Y N

> **055**
> 1.Bad comm adapter card
> ---or---
> 2.Bad card A-B3C2
> ---or---
> 3.Bad cable A-B3A2.

056
Try the other comm adapter cards using the plugging procedure at Entry Point C.

Does the 1080XXXX wrap error occur with only one of the adapter cards (see Note 5)?
Y N

> **057**
> 1.Bad card A-B3C2
> ---or---
> 2.Bad cable A-B3A2.

058
The single adapter card causing the 1080XXXX wrap error is bad.

059
Run communication MDI MAPs on all lines installed to verify data communications is operating.

Note 5: If only one comm adapter card causes a 1080XXXX wrap error and the others don't, then that comm adapter card is suspect.
If any comm adapter card installed in it's original location causes the wrap error to occur, then the controller card (A-B3C2) or cable (A-B3A2) is suspect.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0149	A	1	001
0159	A	1	001
0173	A	1	001
0175	A	1	001
0199	A	1	001

001
(Entry Point A)
--See Note 1--
To cause a CSIPL from the diskette and run the MSP
tests, perform the following:

-Press Reset (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Set Address/Data to X'EE00'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down position.
Insert diskette DIAGB1.
-Press Load (operator panel).
Look at the system console for information.

Return to this point if the problem is not found by the
MSP test.

(Step 001 continues)

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MAP DESCRIPTION:
This MAP instructs the CE to run the MSP tests.

START CONDITIONS:
The wrap error was 02XX
---or---
The CSIPL stopped with the Display Lights byte 0, bits
6 and 7 on.

LOGIC CARDS TESTED:
For a system without A-A1B2 card,
A-A1N2
A-A1P2
A-A1F2
A-A1Q2
Main storage cards
For a system with A-A1B2 card,
A-A1J2
A-A1K2
A-A1C2
A-A1L2
Main storage cards

Note 1: If you get to this MAP because of a Proc Check
with byte 0, bit 6 and 7 on or a wrap error 020000XX
(where XX is from 01 to 08); the main storage could be
configured incorrectly. Be sure to check the main
storage configuration and verify its accuracy against the

(Step 001 continued)

actual amount of main storage installed in your system before proceeding.

Did the MSP tests instruct you to go to another MAP or locate the problem?
Y N

002
Did the MSP tests stop with T0260 on the system console?
Y N

003
(Entry Point B)
Were you instructed to run the MSP tests because the system got a Processor Chk (operator panel) with the Display Lights byte 0, bits 6 and 7 on (CE panel)?
Y N

004
Were you instructed to run the MSP tests because of a single 020000XX wrap error?
Y N

005
Were you instructed to run the MSP tests because of may 020000XX wrap errors?
Y N

006
The following information includes suggestions that might aid you in finding a machine problem.

Use the MAP Description and the supplemental column (right column) information in the MAPs to aid you in your analysis of the problem.

Look at the error recordings using ERAP. Use the Error Recording Information (80-000) to help analyze the Error History Table information for the different areas. (Step 006 continues)

4 3 3 3 3
A B C D E

PAGE 3 OF 4

(Step 006 continued)
If the error recording information is applicable, go to the MAP indicated. If the error recording information fails to fix the problem, return here.

If the error recording information fails to fix the problem or an error recording does not exist, go to the Intermittent Failure Replacement List MAP (5001).

007
Is there a card in A-A1B2 location?
Y N

    008
    Bad card
    A-A1N2
    ---or---
    A-A1P2
    ---or---
    A main storage card.

    009
    Bad card
    A-A1J2
    ---or---
    A-A1K2
    ---or---
    A main storage card.

010
Is there a card in A-A1B2 location?
Y N

    011
    Bad card
    A-A1N2
    ---or---
    A-A1P2.

012
Bad card
A-A1J2
---or---
A-A1K2.

013
The following information includes suggestions that might aid you in finding a machine problem.

Use the MAP Description and the supplemental column (right column) information in the MAPs to aid you in your analysis of the problem.

Look at the error recordings using ERAP. Use the Error Recording Information (80-000) to help analyze the Error History Table information for the different areas. If the error recording information is applicable, go to the MAP indicated. If the error recording information fails to fix the problem, return here.

If the error recording information fails to fix the problem or an error recording does not exist, go to the Intermittent Failure Replacement List MAP (5001).

014
Is there a card in A-A1B2 location?
Y N

    015
    Note: Before you install an A-A1F2 card, you must add jumpers to configure it for the correct control storage size. Use the jumper(s) from the bad card. See VOL D (FSL, PC024) for the location of the jumpers.
    Bad card
    A-A1N2
    ---or---
    A-A1F2

016
Note: Before you install an A-A1C2 card, you must
add jumpers to configure it for the correct control
storage size. Use the jumper(s) from the bad card.
See Vol D (FSL, PC024) for the location of the
jumpers.
Bad card
A-A1J2
---or---
A-A1C2

017
Follow the instructions on the display, verify that the
system is repaired, and return it to the system operator.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0109	A	1	001
0159	A	1	001
0175	A	1	001
0900	A	1	001
1000	A	1	001
1292	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	004	0101	A

001
(Entry Point A)
This MAP has a table which references MAPs that supply instructions to run the MDI MAPs for each area. If it is not obvious which MDI MAPs should be run, run all the MDI MAPs.

MAP DESCRIPTION:
This MAP supplies a MAP index to run all the MDI MAPs in the system. It also has a laundry list of other diagnostic tests that can be run to aid in isolating system problems.

START CONDITIONS:
To get to this MAP, CSIPL has worked from both disk and diskette and ERAP has been run to determine which area might have failed and which MDI MAPs should be run. If it is not obvious which MDI MAPs should be run, run all the MDI MAPs.

LOGIC CARDS TESTED:
No FRU's

Did ERAP indicate the failing area?
Y N

3 2
A B

002

(Entry Point B)

Run each MDI MAP referenced in Table A.

The MDI MAPs do not instruct you to return to this MAP, therefore record this MAP number. If an MDI MAP does not find the problem return to this MAP to run the next MDI MAP.

See Note 1 and Table A for instructions on how to run the MDI tests.

Note 1: This table gives the MAP number which will give the instructions on how to run the MDI MAPs for each area.

```
.---------------------------.
|Table A - MDI MAP Reference|
|---------------------------|
|                   | MAP   |
|       Area        |Number |
|-------------------+------ |
|Disk (62EH)        |0900,A |
|-------------------+------ |
|Disk (62PC)        |1000,A |
|-------------------+------ |
|Diskette (33/53FD) |0179,A |
|-------------------|------ |
|Diskette (72MD)    |0179,A |
|-------------------+------ |
|Line Printer       |0181,A |
|-------------------+------ |
|Local Terminals    |       |
| 2 wide A-A2R2 card|1198,A |
| 4 wide A-A2R2 card*|1292,A|
|-------------------+------ |
|Data Communications|0183,A |
|    (2-line)       |       |
|-------------------+------ |
|Data Communications|0184,A |
|    (MLCA)         |       |
|-------------------+------ |
|Main Store Processor|0190,A|
|-------------------+------ |
|MICR (1255) Attach |4100,A |
.---------------------------.
```

*The work station control expansion 'C' is installed.

Did the MDI MAPs find the problem?

Y N

3 3
C D

05JAN81   PN 4237450

EC 835083   PEC 835000

MAP 0199-2

003
Run SYSTST to exercise the system. Use System/38 Diagnostic Service Guide (MLM Section 99-069) to help determine how to run SYSTST.

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set all CE panel switches to their down position.
-Press Load (operator panel).
Sign on to the system.

Enter SYSTST and press Enter.

Run this program until a failure occurs or until it is obvious that the system is functioning correctly under this program's control.
Does the system test run without error?
Y N

> **004**
> Use this information as the failing area and return to MAP 0101 to continue.
> **Go To Map 0101, Entry Point A.**

005
The following information includes suggestions that might aid you in finding a machine problem.

Use the MAP Description and the supplemental column (right column) information in the MAPs to aid you in your analysis of the problem.

Look at the error recordings using ERAP. Use the Error Recording Information (80-000) to help analyze the Error History Table information for the different areas. If the error recording information is applicable, go to the MAP indicated. If the error recording information fails to fix the problem, return here.

If the error recording information fails to fix the problem or an error recording does not exist, go to the Intermittent Failure Replacement List MAP (5001).

006
Repair the problem, verify that the system is working, and return to the system operator.

007
Run the MDI MAP for the failing area. See Note 1 and Table A for instructions.
Did the MDI MAPs find the problem?
Y N

> **008**
> All the MDI MAPs should be run.
> **Go to Page 2, Step 002, Entry Point B.**

009
Repair the problem, verify the system is working, and return to the system operator.
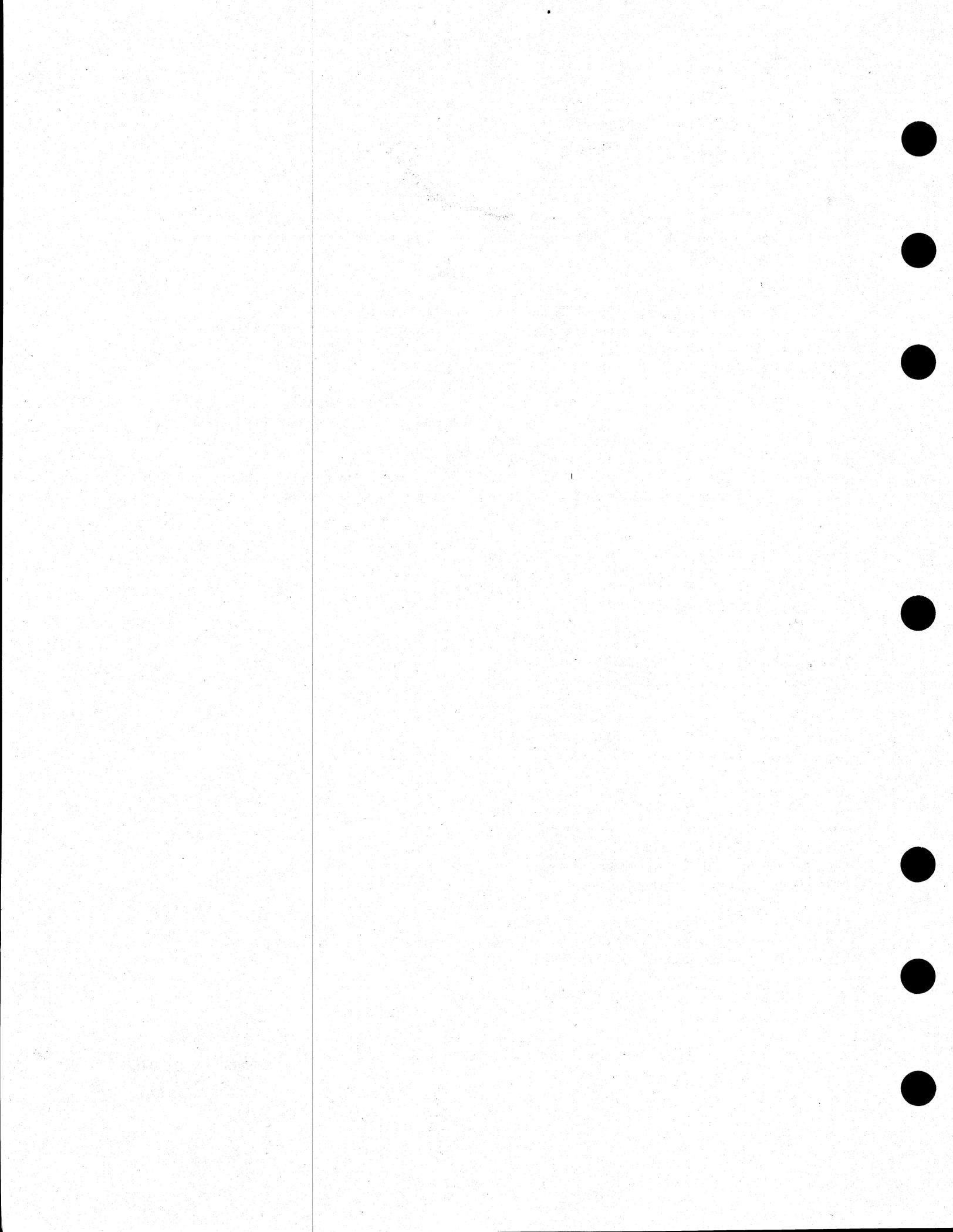
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0311	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0315	A

001
(Entry Point A)
Record the socket locations containing storage cards in the control storage area of board A-A1.
Exchange the control storage cards with as many main storage cards as necessary but do not put the orginal control storage cards in the main storage locations that were vacated.
Set them aside temporarily.
See Note1.
-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.
-Set the Address/Data switches to '0000' (CE panel).
Insert diskette DIAGB1 and close the cover.
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.
Are only Display lights byte 0 bits 6 and 7 On (CE panel)?
Y N

   002
   The original control storage cards are not causing the problem.
   Return all swapped cards to their original socket positions.
   Go To Map 0315, Entry Point A.

MAP DESCRIPTION:
This MAP swaps control storage cards with main storage cards attempting to find a bad control storage card.

START CONDITIONS:
The starting conditions are set up by MAP 0311. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
For system without A-A1B2 card,
A-A1E2, A-A1D4.
For system with A-A1B2 card,
A-A1B2, A-A1B4.

Note 1: Control storage cards and main storage cards may have different part numbers but may be swapped for diagnostic purposes.

2
A

A
1

003
(Entry Point B)
The original control storage cards are causing the problem.
Exchange the original control storage cards back one at a time with the swapped main storage cards as follows:

Exchange a control storage card with a main storage card in a control storage card location.
Do not put the main storage card back in the main storage card location at this time.
-Set Power to 1 (operator panel).
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?
Y N

> **004**
> The control storage card last exchanged is the bad card.
> Reinstall all good storage cards in their original positions.

005
The last control storage card is not bad.
Repeat the last step with another control storage card.
Go to Step 003, Entry Point B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0313	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	0351	A
2	010	0351	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines if the MSP is causing a CSIPL problem.

START CONDITIONS:
The starting conditions are set up by MAP 0313. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
For a system without A-A1B2 card,
A-A1N2, A-A1P2, A-A1Q2.
For a system with A-A1B2 card,
A-A1J2, A-A1K2, A-A1L2.

Is there a card in A-A1B2 location?
Y N

   002
   Remove cards A-A1N2, A-A1P2, and A-A1Q2.
   Jumper the following pins to ground:

       A-A1N2G10 (-MSP clocks stopped)
       A-A1Q2S05 (+MS CSY trigger)

   Jumper A-A1Q2P09 to A-A1Q2M13.

   -Set Power to 1 (operator panel).
   -Set Mode Selector to Proc Run (CE panel).
   -Set CSIPL to Diskette (CE panel).
   -Set all other CE panel switches to their down positions.
   -Set the Address/Data switches to '0000' (CE panel).
   (Step 002 continues)

2
A

(Step 002 continued)

Insert diskette DIAGB1 and close the cover.

-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?

Y N

003

The MSP is not causing the CSIPL problem.

Reinstall all cards removed earlier.

Remove all jumpers installed earlier.

-Set Power to 1 (operator panel).

Go To Map 0351, Entry Point A.

004

The MSP is causing the CSIPL problem.

Remove all jumpers installed earlier.

Install cards A-A1N2 and A-A1Q2.

-Set Power to 1 (operator panel).

-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?

Y N

005

Card A-A1P2 is not causing the problem.

Remove card A-A1Q2.

Install card A-A1P2.

Jumper the following pin to ground:

    A-A1Q2S05 (+MS CSY trigger)

Jumper A-A1Q2P09 to A-A1Q2M13.

-Set Power to 1 (operator panel).

-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?

Y N

B C D

A B C D
1

006
Bad card
A-A1N2.

007
Bad card
A-A1Q2.

Remove any jumpers installed earlier.

008
Bad card
A-A1P2.

009

Remove cards A-A1J2, A-A1K2, and A-A1L2.
Jumper the following pins to ground:

    A-A1J2G10 (-MSP clocks stopped)
    A-A1L2S05 (+MS CSY trigger)

Jumper A-A1L2P09 to A-A1L2M13.

-Set Power to 1 (operator panel).

-Set Mode Selector to Proc Run (CE panel).

-Set CSIPL to Diskette (CE panel).

-Set all other CE panel switches to their down positions.

-Set the Address/Data switches to '0000' (CE panel).

Insert diskette DIAGB1 and close the cover.

-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?

Y N

010
The MSP is not causing the CSIPL problem.
Reinstall all cards removed earlier.
Remove all jumpers installed earlier.
-Set Power to 1 (operator panel).
Go To Map 0351, Entry Point A.

MAP 0315-2

011
The MSP is causing the CSIPL problem.

Remove all jumpers installed earlier.
Install cards A-A1J2 and A-A1L2.
-Set Power to 1 (operator panel).
-Press Load (operator panel) and wait for about 45
seconds for disk and diskette to load programs.
**Are only Display lights byte 0 bits 6 and 7 On (CE
panel)?**
Y N

    012
    Card A-A1K2 is not causing the problem.
    Remove card A-A1L2.
    Install card A-A1K2.
    Jumper the following pin to ground:

      A-A1L2S05 (+MS CSY trigger)

    Jumper A-A1L2P09 to A-A1L2M13.

    -Set Power to 1 (operator panel).
    -Press Load (operator panel) and wait for about 45
    seconds for disk and diskette to load programs.
    **Are only Display lights byte 0 bits 6 and 7 On (CE
    panel)?**
    Y N

        013
        Bad card
        A-A1J2.

    014
    Bad card
    A-A1L2.

    Remove any jumpers installed earlier.

015
Bad card
A-A1K2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0311	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	040	0323	A
14	079	0323	A
3	003	0331	A
3	005	0331	A
3	007	0331	A
4	009	0331	A
4	011	0331	A
4	013	0331	A
5	015	0331	A
5	017	0331	A
5	019	0331	A
5	021	0331	A
5	023	0331	A
5	025	0331	A
5	027	0331	A
6	029	0331	A
6	031	0331	A
6	033	0331	A
7	035	0331	A
7	037	0331	A
7	039	0331	A
9	042	0331	A
10	044	0331	A
10	046	0331	A
10	048	0331	A
11	050	0331	A
11	052	0331	A
11	054	0331	A
11	056	0331	A
11	058	0331	A
11	060	0331	A
11	062	0331	A
11	064	0331	A
12	066	0331	A
12	068	0331	A
12	070	0331	A
12	072	0331	A

MAP 0321-1

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
12	074	0331	A
12	076	0331	A
13	078	0331	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP isolates the attachments from the CP to determine if they are causing the CSIPL problem.

Note: This MAP requires nine jumpers.

START CONDITIONS:
The starting conditions are set up by MAP 0311. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
All cards on boards A-A2 and A-A3, A-B3C2, A-B3U3.

Is there a card in A-A1B2 location?
Y N

002
-Set Power to 0 (operator panel).
Remove crossover cables A-A1Z4, A-A1Z5, and A-A1Z6 from A-A1 board.
-Set Power to 1 (operator panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set Mode Selector to Alter Stor (CE panel).
-Set Stor Sel to Ctl (CE panel).
-Set Force Clock to On (CE panel).
-Press Reset (CE panel).
Wait about 2 seconds.
-Set Force Clock to Off (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Reset (CE panel).
-Press Load (operator panel).
(Step 002 continues)

9
A

(Step 002 continued)
Probe the following:

Up   Light: Off
Down Light: On

(1) A-A1F2M06 (-CSIPL cycle)

Are the lights correct?
Y N

003
Go To Map 0331, Entry Point A.

004
Jumper from A-A1L6E04 (-Disk block Proc Clk) to
A-A1M6D02 (-CSIPL cycle).

Is Display light P0 Off?
Y N

005
Go To Map 0331, Entry Point A.

006
Probe the following:

Up   Light: Off
Down Light: On

(1) A-A1L2B10 (-Disk burst mode gated)

Are the lights correct?
Y N

007
Go To Map 0331, Entry Point A.

008
Jumper the following pin to ground:

    A-A1L2J11 (-62EH/53FD/33FD (Load) BC REQ)

-Press Load (operator panel).
Is Processor Check light on (operator panel)?
Y N

    009
    Go To Map 0331, Entry Point A.

010
Jumper the following pins to ground:

    A-A1G2S06 (-CBI bit 0 CS INCR)
    A-A1L2J13 (-Command bus in 4)
    A-A1L2U05 (-MPXP0 data in 1)
    A-A1L2U10 (-MPXP0 data in 0)
    A-A1L2U11 (-MPXP0 data in 2)
    A-A1L2S10 (-MPXP0 data in 4)
    A-A1L2S12 (-MPXP0 data in 3)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

    011
    Go To Map 0331, Entry Point A.

012
-Set Mode Selector to Proc Run (CE panel).
Are Display lights byte 0 '3F' (CE panel)?
Y N

    013
    Go To Map 0331, Entry Point A.

014
Is Load light off (operator panel)?
Y N

5 5
C D

015
Go To Map 0331, Entry Point A.

016
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XXF8' (CE panel)?
Y N

  017
  Go To Map 0331, Entry Point A.

018
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

  019
  Go To Map 0331, Entry Point A.

020
Remove the following jumpers:

  A-A1L2U05   (-MPXP0 data in 1)
  A-A1L2U10   (-MPXP0 data in 0)
  A-A1L2U11   (-MPXP0 data in 2)
  A-A1L2S10   (-MPXP0 data in 4)

Jumper the following pins to ground:

  A-A1L2U02   (-MPXP0 data in 7)
  A-A1L2U04   (-MPXP0 data in 6)
  A-A1L2U09   (-MPXP0 data in 5)
  A-A1L2S03   (-MPXP0 data in P)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
(Step 020 continues)

(Step 020 continued)
Is Processor Check light off (operator panel)?
Y N

  021
  Go To Map 0331, Entry Point A.

022
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX17' (CE panel)?
Y N

  023
  Go To Map 0331, Entry Point A.

024
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

  025
  Go To Map 0331, Entry Point A.

026
Remove jumpers from the following:

  A-A1L2U04   (-MPXP0 data in 6)
  A-A1L2U09   (-MPXP0 data in 5)
  A-A1L2S03   (-MPXP0 data in P)
  A-A1L2S12   (-MPXP0 data in 3)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

  027
  Go To Map 0331, Entry Point A.

028
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX01' (CE panel)?
Y N

> **029**
> **Go To Map 0331, Entry Point A.**

030
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

> **031**
> **Go To Map 0331, Entry Point A.**

032
Remove the following jumper:

A-A1G2S06 (-CBI bit 0 CS INCR)

-Press Reset (CE panel).
-Set Mode Selector to Alter Stor (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set Force Clock to On (CE panel).
-Set Force Clock to Off (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

> **033**
> **Go To Map 0331, Entry Point A.**

034
Is Load light on (operator panel)?
Y N

7 7
F G

035
Go To Map 0331, Entry Point A.

036
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX01' (CE panel)?
Y N

> **037**
> Go To Map 0331, Entry Point A.

038
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

> **039**
> Go To Map 0331, Entry Point A.

040
Remove all the adapter interface cards (except A-A2L2)
shown in the following chart.
Reinstall all cables.
Remove all jumpers installed earlier.

Adapter interface card
reference

Device	Device ID	Inter-face cards
Disk A (62EH)	A0	A-A2E2 A-A2F2 A-A2G2
Disk B (62EH)	B0	A-A3E2 A-A3F2 A-A3G2

(Step 040 continues)

MAP 0321-8

(Step 040 continued)

Device		
Disk (62PC)	A1	A-A2E2
Work station	C0	A-A2M2*
Diskette 33/53FD	D0	A-A2L2
Diskette 72MD	D1	A-A2L2
5211 Printer	E0	A-A2T2*
3262 Printer	E2	A-A2T2* / A-A2U2*
2-line Comm adapters	80 or 20	A-A2J2 / A-A2K2
MLCA Con- troller	10	A-B3C2
1255	52	A-A3R2* / A-A3T2
Term resistor card	--	** / A-A3U3

NOTE:
Some of the preceding devices
might not be installed in the
machine's specific
configuration.

*Remove the top card connectors
W, X, Y, and Z before
removing this card and

(Step 040 continues)

(Step 040 continued)

reinstall them after
installing this card.

**If Data Communications MLCA
is installed (A-B3 board),
this will be located in
A-B3U3.

Go To Map 0323, Entry Point A.

041
-Set Power to 0 (operator panel).
Remove crossover cables A-A1Z4, A-A1Z5, and
A-A1Z6 from A-A1 board.
-Set Power to 1 (operator panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set Mode Selector to Alter Stor (CE panel).
-Set Stor Sel to Ctl (CE panel).
-Set Force Clock to On (CE panel).
-Press Reset (CE panel).
Wait about 2 seconds.
-Set Force Clock to Off (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Reset (CE panel).
-Press Load (operator panel).
Probe the following:

Up   Light: Off
Down Light: On

(1) A-A1C2M06 (-CSIPL cycle)

Are the lights correct?
Y N

  042
  Go To Map 0331, Entry Point A.

043
Jumper from A-A1L6E04 (-Disk block Proc Clk) to
A-A1M6D02 (-CSIPL cycle) (Ref FSL AB300).

Is Display light P0 Off?
Y N

1 1
0 0
H J

044
Go To Map 0331, Entry Point A.

045
Probe the following:

Up   Light: Off
Down Light: On

(1) A-A1H2B10 (-Disk burst mode gated)

Are the lights correct?
Y N

  046
  Go To Map 0331, Entry Point A.

047
Jumper the following pin to ground:

    A-A1H2J11 (-62EH/53FD/33FD (Load) BC REQ)

-Press Load (operator panel).
Is Processor Check light on (operator panel)?
Y N

  048
  Go To Map 0331, Entry Point A.

049
Jumper the following pins to ground:

    A-A1D2S06 (-CBI bit 0 CS INCR)
    A-A1H2J13 (-Command bus in 4)
    A-A1H2U05 (-MPXP0 data in 1)
    A-A1H2U10 (-MPXP0 data in 0)
    A-A1H2U11 (-MPXP0 data in 2)
    A-A1H2S10 (-MPXP0 data in 4)
    A-A1H2S12 (-MPXP0 data in 3)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
(Step 049 continues)

K

MAP 0321-11

(Step 049 continued)

Is Processor Check light off (operator panel)?
Y N

  050
  Go To Map 0331, Entry Point A.

051
-Set Mode Selector to Proc Run (CE panel).
Are Display lights byte 0 '3F' (CE panel)?
Y N

  052
  Go To Map 0331, Entry Point A.

053
Is Load light off (operator panel)?
Y N

  054
  Go To Map 0331, Entry Point A.

055
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XXF8' (CE panel)?
Y N

  056
  Go To Map 0331, Entry Point A.

057
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

  058
  Go To Map 0331, Entry Point A.

K

059
Remove the following jumpers:

    A-A1H2U05   (-MPXP0 data in 1)
    A-A1H2U10   (-MPXP0 data in 0)
    A-A1H2U11   (-MPXP0 data in 2)
    A-A1H2S10   (-MPXP0 data in 4)

Jumper the following pins to ground:

    A-A1H2U02   (-MPXP0 data in 7)
    A-A1H2U04   (-MPXP0 data in 6)
    A-A1H2U09   (-MPXP0 data in 5)
    A-A1H2S03   (-MPXP0 data in P)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

  060
  Go To Map 0331, Entry Point A.

061
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX17' (CE panel)?
Y N

  062
  Go To Map 0331, Entry Point A.

063
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

  064
  Go To Map 0331, Entry Point A.

1
2
L

05JAN81   PN 4237456

EC 835083   PEC 835000

MAP 0321-11

065
Remove jumpers from the following:

    A-A1H2U04   (-MPXP0 data in 6)
    A-A1H2U09   (-MPXP0 data in 5)
    A-A1H2S03   (-MPXP0 data in P)
    A-A1H2S12   (-MPXP0 data in 3)

-Press Reset (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

> **066**
> Go To Map 0331, Entry Point A.

067
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '07FF' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX01' (CE panel)?
Y N

> **068**
> Go To Map 0331, Entry Point A.

069
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

> **070**
> Go To Map 0331, Entry Point A.

M

071
Remove the following jumper:

    A-A1D2S06 (-CBI bit 0 CS INCR)

-Press Reset (CE panel).
-Set Mode Selector to Alter Stor (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set Force Clock to On (CE panel).
-Set Force Clock to Off (CE panel).
-Set Mode Selector to Insn Step/Dply LSR (CE panel).
-Press Load (operator panel).
Is Processor Check light off (operator panel)?
Y N

> **072**
> Go To Map 0331, Entry Point A.

073
Is Load light on (operator panel)?
Y N

> **074**
> Go To Map 0331, Entry Point A.

075
-Set Mode Selector to Alter Mar IRPT (CE panel).
-Set the Address/Data switches to '0000' (CE panel).
-Press Reset (CE panel).
-Press CE Start (CE panel).
-Set Mode Selector to Dply Stor (CE panel).
-Press CE Start (CE panel).
Are Display lights 'XX01' (CE panel)?
Y N

> **076**
> Go To Map 0331, Entry Point A.

077
-Press CE Start (CE panel).
Are Display lights 'XX00' (CE panel)?
Y N

05JAN81   PN 4237456
EC 835083   PEC 835000

MAP 0321-12

078
Go To Map 0331, Entry Point A.

079
Remove all the adapter interface cards (except A-A2L2)
shown in the following chart.
Reinstall all cables.
Remove all jumpers installed earlier.

Adapter interface card
reference

Device	Device ID	Inter-face cards
Disk A (62EH)	A0	A-A2E2 A-A2F2 A-A2G2
Disk B (62EH)	B0	A-A3E2 A-A3F2 A-A3G2
Disk (62PC)	A1	A-A2E2
Work station	C0	A-A2M2*
Diskette 33/53FD	D0	A-A2L2
Diskette 72MD	D1	A-A2L2
5211 Printer	E0	A-A2T2*
3262 Printer	E2	A-A2T2* A-A2U2*
2-line Comm adapters	80 or 20	A-A2J2 A-A2K2

(Step 079 continues)

MAP 0321-14

(Step 079 continued)

```
|--------+-------+-------|
|MLCA    |  10   |A-B3C2 |
|Con-    |       |       |
|troller |       |       |
|--------+-------+-------|
|  1255  |  52   |A-A3R2*|
|        |       |A-A3T2 |
|--------+-------+-------|
|Term    |       |  **   |
|resistor|  --   |A-A3U3 |
|card    |       |       |
|        |       |       |
-------------------------
```

NOTE:
Some of the preceding devices
might not be installed in the
machine's specific
configuration.

*Remove the top card connectors
 W, X, Y, and Z before
 removing this card and
 reinstall them after
 installing this card.

**If Data Communications MLCA
  is installed (A-B3 board),
  this will be located in
  A-B3U3.

Go To Map 0323, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0321	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	003	0341	A
4	012	0341	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines if the MSP is causing a CSIPL problem.

START CONDITIONS:
The starting conditions are set up by MAP 0321. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
For a system without A-A1B2 card,
A-A1N2, A-A1P2, A-A1Q2
For a system with A-A1B2 card,
A-A1J2, A-A1K2, A-A1L2

Is there a card in A-A1B2 location?
Y N

002
Reinstall crossover cables that were removed earlier.
Reinstall all cards that were removed earlier.
Remove all jumpers installed earlier.
Remove cards A-A1N2, A-A1P2, and A-A1Q2.
Jumper the following pins to ground:

A-A1N2G10 (-MSP clocks stopped)
A-A1Q2S05 (+MS CSY trigger)

Jumper A-A1Q2P09 to A-A1Q2M13.

-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set MSIPL to Diskette (CE panel).
(Step 002 continues)

4
A

(Step 002 continued)
-Set all other CE panel switches to their down positions.
-Set the Address/Data switches to '0000' (CE panel).
Insert diskette DIAGB1 and close the cover.
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.
Are only Display lights byte 0 bits 6 and 7 On (CE panel)?
Y N

   003
   The MSP is not causing the CSIPL problem.
   Reinstall all cards removed earlier.
   Remove the following jumpers:

      A-A1N2G10 (-MSP clocks stopped)
      A-A1Q2S05 (+MS CSY trigger)
      Remove jumper from A-A1Q2P09 to A-A1Q2M13

   Go To Map 0341, Entry Point A.

004
The MSP is causing the CSIPL problem.

Remove the following jumpers:

    A-A1N2G10 (-MSP clocks stopped)
    A-A1Q2S05 (+MS CSY trigger)
    Remove jumper from A-A1Q2P09 to A-A1Q2M13

Install cards A-A1N2 and A-A1Q2.
-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.
Are only Display lights byte 0 bits 6 and 7 On (CE panel)?
Y N

4 3
B C

C
2

005
Card A-A1P2 is not causing the problem.
Remove card A-A1Q2.
Install card A-A1P2.
Jumper the following pin to ground:

    A-A1Q2S05 (+MS CSY trigger)
Jumper A-A1Q2P09 to A-A1Q2M13.

-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Load (operator panel) and wait for about 45
seconds for disk and diskette to load programs.
**Are only Display lights byte 0 bits 6 and 7 On (CE
panel)?**
Y N

  006
  Bad card
  A-A1N2
  Remove all jumpers

007
Probe the following:

Up   Light: Off
Down Light: On

(1) A-A1N2B07 (-MSP storage function).

Are the lights correct?
Y N

  008
  Bad card
  A-A1Q2
  Remove all jumpers

009
Bad card
A-A1N2
---or---
A-A1Q2
Remove all jumpers

010
Bad card
A-A1P2
Remove all jumpers

011
Reinstall crossover cables that were removed earlier.
Reinstall all cards that were removed earlier.
Remove all jumpers installed earlier.
Remove cards A-A1J2, A-A1K2, and A-A1L2.
Jumper the following pins to ground:

    A-A1J2G10 (-MSP clocks stopped)
    A-A1L2S05 (+MS CSY trigger)
Jumper A-A1L2P09 to A-A1L2M13
-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down
positions.
-Set the Address/Data switches to '0000' (CE panel).
Insert diskette DIAGB1 and close the cover.
-Press Load (operator panel) and wait for about 45
seconds for disk and diskette to load programs.
**Are only Display lights byte 0 bits 6 and 7 On (CE
panel)?**
Y N

  012
  The MSP is not causing the CSIPL problem.
  Reinstall all cards removed earlier.
  Remove the following jumpers:

      A-A1J2G10 (-MSP clocks stopped)
      A-A1L2S05 (+MS CSY trigger)
      Remove jumper from A-A1L2P09 to A-A1L2M13

  Go To Map 0341, Entry Point A.

5
D

013
The MSP is causing the CSIPL problem.

Remove the following jumpers:

    A-A1J2G10 (-MSP clocks stopped)
    A-A1L2S05 (+MS CSY trigger)
    Remove jumper from A-A1L2P09 to A-A1L2M13

Install cards A-A1J2 and A-A1L2.
-Set Power to 1 (operator panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Load (operator panel) and wait for about 45
seconds for disk and diskette to load programs.
**Are only Display lights byte 0 bits 6 and 7 On (CE
panel)?**
Y N

> **014**
> Card A-A1K2 is not causing the problem.
> Remove card A-A1L2.
> Install card A-A1K2.
> Jumper the following pin to ground:
>
>   A-A1L2S05 (+MS CSY trigger)
> Jumper A-A1L2P09 to A-A1L2M13.
> -Set Power to 1 (operator panel).
> -Set Mode Selector to Proc Run (CE panel).
> -Press Load (operator panel) and wait for about 45
> seconds for disk and diskette to load programs.
> **Are only Display lights byte 0 bits 6 and 7 On (CE
> panel)?**
> Y N
>
> > **015**
> > Bad card
> > A-A1J2
> > Remove all jumpers

6 6
E F

016
Probe the following:

```
Up   Light: Off
Down Light: On

(1) A-A1J2B07 (-MSP storage function).
```

Are the lights correct?
Y N

017
Bad card
A-A1L2
Remove all jumpers

018
Bad card
A-A1J2
---or---
A-A1L2
Remove all jumpers

019
Bad card
A-A1K2
Remove all jumpers

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0331	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0351	A

001
(Entry Point A)
Record the socket locations containing storage cards in the control storage area of the board A-A1.
Exchange the control storage cards with as many main storage cards as necessary but do not put the original control storage cards in the main storage locations that were vacated.
Set them aside temporarily.
See Note 1.
-Set Power to 1 (operator panel).
-Set the Address/Data switches to '0000' (CE panel).
-Set Mode Selector to Proc Run (CE panel).
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?
Y N

  002
  (Entry Point B)
  The original control storage cards are not causing the problem.
  Return all swapped cards to their original socket positions.
  -Set Power to 1 (operator panel).
  Go To Map 0351, Entry Point A.

MAP DESCRIPTION:
This MAP exchanges control storage cards with main storage cards attempting to find a bad control storage card.

START CONDITIONS:
The starting conditions are set up by MAP 0331. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
For a system without A-A1B2 card,
A-A1E2, A-A1D4.

For a system with A-A1B2 card,
A-A1B2, A-A1B4.

Note 1: Control storage cards and main storage cards may have different part numbers but may be interchanged for diagnostic purposes.

2
A

003

(Entry Point C)

The original control storage cards are causing the problem.

Swap the control storage cards back one at a time with the swapped main storage cards as follows:

Exchange a control storage card with a main storage card in a control storage location.

−Set Power to 1 (operator panel).

−Set the Address/Data switches to '0000' (CE panel).

−Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

Are only Display lights byte 0 bits 6 and 7 On (CE panel)?

Y N

> **004**
>
> **(Entry Point D)**
>
> The control storage card exchanged last is not the bad card.
>
> Repeat the last step with another control storage card.
>
> **Go to Step 003, Entry Point C.**

005

The control storage card exchanged last is the bad card.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0315	A	1	001
0341	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	1301	A
5	031	1301	A
1	003	2101	A
3	018	2101	A
2	005	2101	B
2	007	2101	B
3	020	2101	B
3	022	2101	B

001
(Entry Point A)
-Press Load (operator panel) and wait for about 45 seconds for disk and diskette to load programs.

MAP DESCRIPTION:
This MAP isolates the CE panel from the CP to check if the CP and its associated cables are causing the CSIPL problem.

START CONDITIONS:
The starting conditions are set up by MAP 0311. If you did not go through that MAP, return to it.

LOGIC CARDS TESTED:
For a system without A-A1B2 card,
A-A1F2, A-A1G2, A-A1H2, A-A1J2, A-A1K2, A-A1L2.
For a system with A-A1B2 card,
A-A1C2, A-A1D2, A-A1E2, A-A1F2, A-A1G2, A-A1H2

CE panel drawing (VOL D, CE160)

Is there a card in A-A1B2 location?
Y N

   002
   Is Load light off (operator panel)?
   Y N

      003
      Check the operator panel functions.
      Go To Map 2101, Entry Point A.

3 2
A B

MAP 0351-1

004
-Press Stop (CE subpanel).
Is the Stop light on (CE subpanel)?
Y N

> **005**
> Check the operator panel functions.
> **Go To Map 2101, Entry Point B.**

006
-Press Start (CE subpanel).
Is the Stop light off (CE subpanel)?
Y N

> **007**
> Check the operator panel functions.
> **Go To Map 2101, Entry Point B.**

008
(Entry Point C)
Remove cables from locations A-A1A4 and A-A1A5.
Jumper the following pins to ground:

    A-A1G2B13 (+Single cycle)
    A-A1K2M12 (+Mode SEL SW bit 0)
    A-A1A5D07 (-CSIPL Diskette)

-Set Power to 1 (operator panel).
When these cables are removed, Power Check and Thermal Check may turn on (operator panel). Ignore these indicators.
-Press Load (operator panel).
Wait about 2 minutes.
Is the console display as described in Note 1?
Y N

Note 1: When the CSIPL sequence completes, the System Available light should be On and the console display should look as described below.

The Main Menu display has different selective options following the Main Menu title.

3 3
C D

009
(Entry Point B)
Reinstall cables.
Remove all jumpers.
-Set Power to 1 (operator panel).
Measure for +5 Vdc on A-A1F2D03 (+5 Vdc).
Does the CE multimeter read +4.5 to +5.5 Vdc?
Y N

  010
  Check for missing or incorrect +5 Vdc to board
  A-A1.

011
Measure for +8.5 Vdc on A-A1E2B11 (+8.5 Vdc).
Does the CE multimeter read +7.7 to +9.3 Vdc?
Y N

  012
  Check for missing or incorrect +8.5 Vdc to board
  A-A1.

013
Measure for -5 Vdc on A-A1E2B06 (-5 Vdc).
Does the CE multimeter read -4.5 to -5.5 Vdc?
Y N

  014
  Check for missing or incorrect -5 Vdc to board A-A1.

015
Note: Before you install an A-A1F2 card, you must add jumpers to configure it for the correct control storage size. Use the jumper(s) from the bad card. See VOL D (FSL, PC024) for the location of the jumpers.
Bad card
A-A1H2
---or---
A-A1G2
---or---
A-A1F2
---or---
A-A1L2
---or---
(Step 015 continues)

(Step 015 continued)
A-A1K2
---or---
A-A1J2.

016
The CE panel
---or---
A-A1A4 cable
---or---
A-A1A5 cable
Is causing the problem.
Go To Map 1301, Entry Point A.

017
Is Load light off (operator panel)?
Y N

  018
  Check the operator panel functions.
  Go To Map 2101, Entry Point A.

019
-Press Stop (CE subpanel).
Is the Stop light on (CE subpanel)?
Y N

  020
  Check the operator panel functions.
  Go To Map 2101, Entry Point B.

021
-Press Start (CE subpanel).
Is the Stop light off (CE subpanel)?
Y N

  022
  Check the operator panel functions.
  Go To Map 2101, Entry Point B.

4
E

023
(Entry Point D)
Remove cables from locations A-A1A4 and A-A1A5.
Jumper the following pins to ground:

    A-A1D2B13 (+Single cycle)
    A-A1G2M12 (+Mode SEL SW bit 0)
    A-A1A5D07 (-CSIPL Diskette)

-Set Power to 1 (operator panel).
When these cables are removed, Power Check and
Thermal Check may turn on (operator panel). Ignore
these indicators.
-Press Load (operator panel).
Wait about 2 minutes.
Is the console display as described in Note 1?
Y N

  024
  (Entry Point E)
  Reinstall cables.
  Remove all jumpers.
  -Set Power to 1 (operator panel).
  Measure for +5 Vdc on A-A1C2D03 (+5 Vdc).
  Does the CE multimeter read +4.5 to +5.5 Vdc?
  Y N

    025
    Check for missing or incorrect +5 Vdc to board
    A-A1.

  026
  Measure for +8.5 Vdc on A-A1B2B11 (+8.5 Vdc).
  Does the CE multimeter read +7.7 to +9.3 Vdc?
  Y N

    027
    Check for missing or incorrect +8.5 Vdc to board
    A-A1.

5 5
F G

Note 1: When the CSIPL sequence completes, the
System Available light should be On and the console
display should look as described below.

The Main Menu display has different selective options
following the Main Menu title.

028
Measure for -5 Vdc on A-A1B2B06 (-5 Vdc).
Does the CE multimeter read -4.5 to -5.5 Vdc?
Y N

   029
   Check for missing or incorrect -5 Vdc to board
   A-A1.

030
Note: Before you install an A-A1C2 card, you must
add jumpers to configure it for the correct control
storage size. Use the jumper(s) from the bad card.
See VOL D (FSL, PC024) for the location of the
jumpers.
Bad card
A-A1E2
---or---
A-A1D2
---or---
A-A1C2
---or---
A-A1H2
---or---
A-A1G2
---or---
A-A1F2.

031
The CE panel
---or---
A-A1A4 cable
---or---
A-A1A5 cable
is causing the problem.
Go To Map 1301, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0500	A	2	001
0513	A	2	001
0517	A	2	001
0518	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	015	0513	A
7	034	0515	A
7	031	0515	A
7	028	0516	A
8	035	0517	A
8	036	0518	A
8	037	0519	A
11	068	0519	A
10	050	0551	A
10	050	0552	A
10	050	0553	A
10	050	0554	A
7	025	0555	A
11	059	0556	A
6	022	0558	A
11	056	0559	A
11	062	0562	A
11	067	0567	A
12	077	0569	A
11	074	0570	A
8	041	0573	A
6	016	0575	A
8	039	0575	A
11	071	0581	A
2	002	0584	A
6	019	0591	A
11	053	0592	A

001
(Entry Point A)
-Press and hold Dply Pwr Chk and Lamp Test (CE panel).
Record byte 0 data (CE panel).

MAP DESCRIPTION:
This MAP records power fault information and sends the CE to each power MAP.

ENTRY CONDITIONS:
The control supply status indicator shows that the control supply is good. The Power Check light is on.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-A1C4, C-A1C5, C-B1J6

Is byte 0 data a X'FF'?
Y N

| |
| **002**
| **Go To Map 0584, Entry Point A.**
|
003
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data found in Table 1?
Y N

```
          Table 1
.------------------.
|Sense card or cable|
|missing indication |
|------------------|
| HEX |Card or cable|
|-----+------------|
| 99  | C-A1C4 card |
| 9A  | C-A1C5 card |
| 9B  | C-B1J6 card |
|     |    ---or--- |
|     |Feature cable|
|------------------|
|   Feature cable  |
|------------------|
| C-A1A4T to J11   |
| C-A1A4B to J24   |
| C-A1Z2 to C-B1J7 |
|      C-B1J3      |
|      C-B1J5      |
|_____|
```

1 3
1
A B

004

Is byte 0 data found in Table 2?

Y N

Table 2

```
.--------------------.
| Over voltage (0V)  |
|    indication      |
|--------------------|
|HEX|Level| Supply    |
|---+-----+----------|
|A1 | +5  |Base       |
|A5 | +6  |Base Reg   |
|A6 | -4  |Base Reg   |
|A7 | -5  |Base Reg   |
|A9 | -12 |Feat A or  |
|   |     |Feat Reg   |
|AA | +5  |Feat B     |
|AB | +12 |Feat C     |
|AC | +5  |Feat D     |
|AF | +12 |Feat G     |
|                     |
|Reg is regulator     |
|Feat is feature      |
|_____|
```

8 4
C D

005

Is byte 0 data found in Table 3?
Y N

006

Is byte 0 data found in Table 4?
Y N

8 8 5
E F G

Table 3

```
.--------------------.
| Over current (OC)  |
|     indication     |
|--------------------|
|HEX|Level|  Supply  |
|---+-----+----------|
|C1 | +5  |Base      |
|C2 | +8.5|Base      |
|C3 | +24 |Base      |
|C4 | -24 |Base      |
|C5 | +6  |Base reg  |
|C6 | -4  |Base reg  |
|C7 | -5  |Base reg  |
|C8 | +12 |Feat A    |
|C9 | -12 |Feat A or |
|   |     | Feat reg |
|CA | +5  |Feat B    |
|CB |(any)|Feat C    |
|CC | +5  |Feat D    |
|CF |(any)|Feat G    |
|                    |
|Reg is Regulator    |
|Feat is Feature     |
|_____|
```

Table 4

```
.--------------------.
| Under voltage (UV) |
|     indication     |
|--------------------|
|HEX|Level|  Supply  |
|---+-----+----------|
|E1 | +5  |Base      |
|E2 | +8.5|Base      |
|E3 | +24 |Base      |
|E4 | -24 |Base      |
|                    |
|_____|
```

007
Is byte 0 data found in Table 5?
Y N

008

Is byte 0 data a X'E8'?
Y N

009

Is byte 0 data a X'E9'?
Y N

010

Is byte 0 data a X'EA'?
Y N

011

Is byte 0 data a X'EB'?
Y N

```
8 7 7 7 7 6
H J K L M N
```

Table 5

Under voltage (UV) indication		
HEX	Level	Supply
E5	+6	Base reg
E6	-4	Base reg
E7	-5	Base reg
Reg is regulator		

X'E8' is an under voltage (UV) indication for the +12V level of feature power supply A.

X'E9' is an under voltage (UV) indication for the -12V level of feature power supply A or feature regulator.

X'EA' is an under voltage (UV) indication for the +5V level of feature power supply B.

X'EB' is an under voltage (UV) indication for one or more of the levels of feature power supply C.

012

Is byte 0 data a X'EC'?
Y N

  013

  Is byte 0 data a X'EF'?
  Y N

    014

    Is byte 0 data a X'7F'?
    Y N

      015
      Go To Map 0513, Entry Point A.

    016
    Go To Map 0575, Entry Point A.

  017
  Is feature power supply G (05-680) installed in the machine (05-250)?
  Y N

    018
    Bad card C-A1B2.

  019
  Go To Map 0591, Entry Point A.

020
Is feature power supply D (05-640) installed in the machine (05-240)?
Y N

  021
  Bad card C-A1B2.

022
Go To Map 0558, Entry Point A.

X'EC' is an under voltage (UV) indication for the +5V level of feature power supply D.

X'EF' is an under voltage (UV) indication for one or more of the levels of feature power supply G.

X'7F' is search complete.

023
Is feature power supply C (05-630) installed
in the machine (05-240)?
Y N

    024
    Bad card C-A1B2.

025
Go To Map 0555, Entry Point A.

026
Is feature power supply B (05-620) installed in
the machine (05-230)?
Y N

    027
    Bad card C-A1B2.

028
Go To Map 0516, Entry Point A.

029
Is feature power supply A (05-610) or feature
regulator card C-A1C4 (05-615) installed in the
machine (05-230)?
Y N

    030
    Bad card C-A1B2.

031
Go To Map 0515, Entry Point A.

032
Is feature power supply A (05-610) installed in the
machine (05-230)?
Y N

    033
    Bad card C-A1B2.

034
Go To Map 0515, Entry Point A.

C E F H
3 4 4 5

POWER CHECK AREA

5340 SYSTEMS UNIT

PAGE 8 OF 12

MAP 0510-8

035
Go To Map 0517, Entry Point A.

036
Go To Map 0518, Entry Point A.

037
Go To Map 0519, Entry Point A.

038
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Record byte 0 data (CE panel).
Did byte 0 change?
Y N

    039
    Go To Map 0575, Entry Point A.

The Search switch must work.

040
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
-Operate and hold Pwr Fault Dply to Prev (CE panel).
Record byte 0 data (CE panel).
Did byte 0 change?
Y N

    041
    Go To Map 0573, Entry Point A.

The Prev switch must work.

9
P

042
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data found in Table 7?
Y N

Table 7

```
.---------------------.
| Over current (OC)   |
|    indication       |
|    following an      |
| over voltage (OV)   |
|---------------------|
|HEX|Level|  Supply   |
|---+-----+---------- |
|41 | +5  |Base       |
|42 | +8.5|Base       |
|43 | +24 |Base       |
|44 | -24 |Base       |
|45 | +6  |Base reg   |
|46 | -4  |Base reg   |
|47 | -5  |Base reg   |
|48 | +12 |Feat A     |
|49 | -12 |Feat A or  |
|   |     |  Feat reg |
|4A | +5  |Feat B     |
|4B |(any)|Feat C     |
|4C | +5  |Feat D     |
|4F |(any)|Feat G     |
|                     |
|---------------------|
|Reg is regulator     |
|Feat is feature      |
|_____|
```

043
Go to Page 10, Step 045, Entry Point D.

044
-Press and hold Dply Pwr Chk (CE panel).
Observe lights 4, 5, 6, and 7 of byte 0 and,
-Operate and hold Pwr Fault Dply to Prev (CE panel).
Record byte 0 data (CE panel).
Did light 4, 5, 6, or 7 of byte 0 change?
Y N

Are the OV and OC indicated on different levels?

```
1 1
1 0
Q R
```

045
(Entry Point D)
-Press and hold Dply Pwr Chk (CE panel).
-Operate and hold Pwr Fault Dply to Prev (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'A9'?
Y N

> **046**
> **Is byte 0 data a X'AA'?**
> **Y N**
>
> > **047**
> > **Is byte 0 data a X'AB'?**
> > **Y N**
> >
> > > **048**
> > > **Is byte 0 data a X'AC'?**
> > > **Y N**
> > >
> > > > **049**
> > > > **Is byte 0 data a X'AF'?**
> > > > **Y N**
> > > >
> > > > > **050**
> > > > > Go to the correct MAP in the list below:
> > > > >
> > > > > If byte 0 data is X'A1',
> > > > > **Go To Map 0551, Entry Point A.**
> > > > > ⎯⎯⎯⎯⎯⎯⎯⎯⎯
> > > > > If byte 0 data is X'A5',
> > > > > **Go To Map 0552, Entry Point A.**
> > > > > ⎯⎯⎯⎯⎯⎯⎯⎯⎯
> > > > > If byte 0 data is X'A6',
> > > > > **Go To Map 0554, Entry Point A.**
> > > > > ⎯⎯⎯⎯⎯⎯⎯⎯⎯
> > > > > If byte 0 data is X'A7',
> > > > > **Go To Map 0553, Entry Point A.**
> > > >
> > > > **051**
> > > > **Is feature power supply G (05-680)**
> > > > **installed in the machine (05-250)?**
> > > > **Y N**

-12V level of feature power supply A or the feature
regulator card.

```
1 1 1 1 1 1
1 1 1 1 1 1
S T U V W X
```

052
Bad card C-A1B2.

053
Go To Map 0592, Entry Point A.

054
Is feature power supply D (05-640) installed
in the machine (05-240)?
Y N

055
Bad card C-A1B2.

056
Go To Map 0559, Entry Point A.

057
Is feature power supply C (05-630) installed in
the machine (05-240)?
Y N

058
Bad card C-A1B2.

059
Go To Map 0556, Entry Point A.

060
Is feature power supply B (05-620) installed in
the machine (05-230)?
Y N

061
Bad card C-A1B2.

062
Go To Map 0562, Entry Point A.

063
Is feature power supply A (05-610) installed in the
machine (05-230)?
Y N

Y Z

064
Is feature regulator card C-A1C4 (05-615)
installed in the machine ?
Y N

065
Bad card C-A1B2.

066
Bad feature regulator card C-A1C4.

067
Go To Map 0567, Entry Point A.

068
Go To Map 0519, Entry Point A.

069
Is byte 0 data a X'99'?
Y N

070
Is byte 0 data a X'9A'?
Y N

071
Go To Map 0581, Entry Point A.

072
Is feature power supply B (05-620) installed in
the machine (05-230)?
Y N

073
Bad card C-A1B2.

074
Go To Map 0570, Entry Point A.

075
Is feature power supply A (05-610) installed in the
machine (05-230)?
Y N

1 1
2 2
A A
A B

A A A
A A B
1 1 1
1   1

POWER CHECK AREA

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MAP 0510-12

076
Bad card C-A1B2.

077
Go To Map 0569, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0500	A	1	001
1020	A	1	001
1020	C	2	008
1024	A	1	001
1030	A	1	001
1030	C	2	008
1034	A	1	001
1080	A	1	001
1080	B	2	004
1084	A	1	001
1090	A	1	001
1090	B	2	004
1094	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	0523	A
2	009	0524	A
2	013	0579	A
4	024	0580	A
2	006	0583	A
3	014	0584	A
4	029	0585	A
5	034	0586	A
5	039	0594	A
2	008	0595	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines the type of problem and sends the CE to the correct power section.

ENTRY CONDITIONS:
The machine is powered up.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-A1C4

Is the problem a missing or wrong DC voltage level found in another MAP?
Y N

  002
  Are all disk drives, diskettes, and fans turning?
  Y N

3 2 2
A B C

003
Is drive A (and B) disk turning?
Y N

    004
    (Entry Point B)
    Connect the CE multimeter from C-A1B2G11 (+)
    to C-A1B2J08 (-).
    Does the CE multimeter read more than 20
    Vdc?
    Y N

        005
        Go To Map 0523, Entry Point A.

    006
    Go To Map 0583, Entry Point A.

007
Is drive C (and D) disk turning?
Y N

    008
    (Entry Point C)
    Go To Map 0595, Entry Point A.

009
Go To Map 0524, Entry Point A.

010
Is the problem one of the lamp circuits?
Y N

    011
    Is the problem the power signal line to the
    printer?
    Y N

        012
        The problem is assumed to be a signal error.
        Bad protect card C-A1B2.

    013
    Go To Map 0579, Entry Point A.

3
D

014
Go To Map 0584, Entry Point A.

015
Is the voltage generated on feature power G?
Y N

016
Is the voltage generated on feature power
supply D?
Y N

017
Is the voltage generated on feature power
supply C?
Y N

018
Is the error on the -12V level?
Y N

019
Go to Page 4, Step 024, Entry Point D.

020
Is feature power supply A (05-600) installed
in the machine (05-220)?
Y N

021
Connect the CE multimeter from
C-A1C4B13(+) to PDTB1-4(-) (05-360).
Does the CE multimeter read more than
1 ohm?
Y N

Feature regulator card is assumed.

5 5 4 4 4 4
E F G H J K

G H J K
3 3 3 3

LOGIC PROBLEM

5340 SYSTEMS UNIT

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MAP 0511-4

022
Bad card C-A1C4.

023
The YA080BB13 net has an open circuit (see FSL, Vol D).

024
(Entry Point D)
-Set the IPO switch to 0 (left side) (05-230).
Jumper from C-A1B2G13 to C-A1B2J08.

This jumper permits relay K1 to be controlled by the IPO switch.

Go To Map 0580, Entry Point A.

025
With power on, connect the CE multimeter from J11-B06(+) on the probe side of the cable connector (05-210) to frame ground(-).
Does the CE multimeter read more than +4Vdc?
Y N

> **026**
> -Set Power to 0 (operator panel).
> Disconnect J11 (05-240).
> Connect the CE multimeter from J11-B06(+) to J11-D02(-) on the cable.
>
> **Does the CE multimeter read more than +4Vdc?**
> Y N
>
> > **027**
> > The YA134BB4 net has an open circuit (see FSL, Vol D).
>
> **028**
> Bad protect card C-A1B2.

029
Go To Map 0585, Entry Point A.

030
With power on, connect the CE multimeter from C-A1B2P13(+) to C-A1B2P08(-).
Does the CE multimeter read more than +4 Vdc?
Y N

> **031**
> Bad protect card C-A1B2.

032
-Set Power to 0 (operator panel).
Disconnect J24 (05-240)
Connect the CE multimeter from J24-7(+) to J24-3(-) (05-210) on the cable.

Does the CE multimeter read more than +4 Vdc?
Y N

> **033**
> The YA142AA07 net has an open circuit (see FSL, Vol D).

034
Go To Map 0586, Entry Point A.

035
With power on, connect the CE multimeter from C-A1B2M08(+) to C-A1B2P08(-).
Does the CE multimeter read more than +4 Vdc?
Y N

> **036**
> Bad protect card C-A1B2.

037
-Set Power to 0 (operator panel).
Remove C-B1J6.
Connect the CE multimeter from C-B1J6G04(+) to C-B1J6J08(-).
Does the CE multimeter read more than +4 Vdc?
Y N

L M

038
The YA184AC4 net has an open circuit (see FSL, Vol D).

039
Go To Map 0594, Entry Point A.
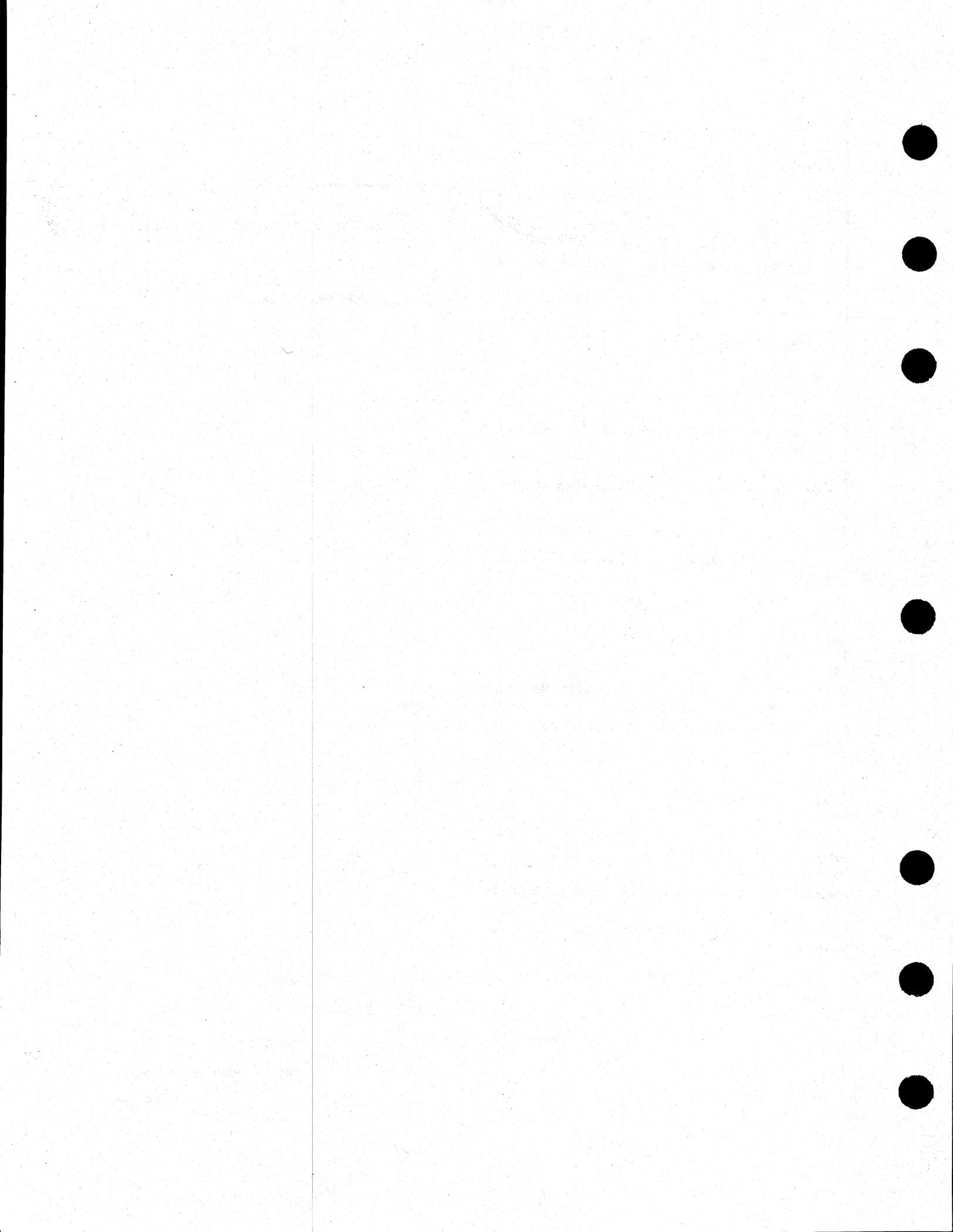
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001
0519	A	1	001
0519	B	4	023

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	0500	A
3	015	0500	A
4	021	0510	A
8	049	0585	A
7	044	0586	A
7	039	0594	A

001
(Entry Point A)
-Set CB1 to 0 (AC distribution box) (05-230).
-Set Power to 0 (operator panel).
-Set the IPO switch to 1 (left side) (05-230).
-Set CB1 to 1 (AC distribution box) (see Note 1).

MAP DESCRIPTION:
This MAP locates the source of bad information after the logic has been reset.

ENTRY CONDITIONS:
Bad information with power check.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-A1C2, C-A1C4 and C-A1C5

Note 1: CB1 is used to reset the logic on protect card C-A1B2.

Is Power Check light on (operator panel)?
Y N

   002
   -Press and hold Dply Pwr Chk (CE panel).
   Record byte 0 data (CE panel).
   Is byte 0 data a X'00'?
   Y N

      003
      Bad protect card C-A1B2.

4 2
A B

POWER LOGIC RESET

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004
-Press and hold Dply Pwr Chk (CE panel).
-Operate and hold Pwr Fault Dply to Prev (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'00'?
Y N

005
Bad protect card C-A1B2.

006
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

007
Is Power Check light on (operator panel)?
Y N

008
Go To Map 0500, Entry Point A.

009
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data found in Table 1?
Y N

4 4 3
C D E

Table 1 -Fault decode

Card/cable	OV	OC	UV
		A1	C1	E1

Card/cable	OV	OC	UV
		C1	E1
		C2	E2
		C3	E3
		C4	E4
	A5	C5	E5
	A6	C6	E6
	A7	C7	E7
		C8	E8
99	A9	C9	E9
9A	AA	CA	EA
9B	AB	CB	EB
	AC	CC	EC
	AF	CF	EF

010
Is byte 0 data a X'00'?
Y N

  011
  Is byte 0 data a ' FF'?
  Y N

    012
    Bad protect card C-A1B2.

  013
  -Set CB1 to 0 (AC distribution box).
  Remove protect card C-A1B2.
  Connect the CE multimeter as indicated in Table 2.
  Does any net have an open circuit or is any pin bent?
  Y N

Table 2
Protect card C-A1B2
(See FSL Vol D)

From	To	Net
M04	M03	YA302DA4
J09	S11	YA302DB4
S13	S07	YA302DC4

    014
    The noise in the machine is causing the power
    check.
    ---or---
    Bad protect card C-A1B2.
    -Set CB1 to 1 (AC distribution box).

  015
  Bad power logic board C-A1.
  -Set CB1 to 1 (AC distribution box).
  Go To Map 0500, Entry Point A.

4
F

016

-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data found in Table 1?
Y N

> **017**
> Bad protect card C-A1B2.

018
Connect the CE multimeter from C-A1B2D12 (+) to C-A1B2D08 (-).
Does the CE multimeter read more than 4 Vdc?
Y N

> **019**
> The CE140AA36 net has a short circuit to ground (see FSL Vol D).

020
Bad protect card C-A1B2.

021
Go To Map 0510, Entry Point A.

022
Reset was needed.

023
(Entry Point B)
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'C5', X'C6', or X'C7' (see Note 2)?
Y N

Note 2: Over current (OC) indication from the regulator on the multilevel filter assembly.

1 5
3 H
G

024
Is byte 0 data found in Table 3 (CE panel)?
Y N

025
Is card C-A1C4 or C-A1C5 or cable C-A1A4T,
C-A1A4B or C-A1Z1 installed?
Y N

  026
  Bad protect card C-A1B2 or board C-A1.

027

Is byte 0 data a X'A9', X'C8', or X'C9' (see Note
3)?
Y N

  028

  Is byte 0 data a X'AA' or X'CA' (see Note 4)?
  Y N

1 1
2 0   8 6
J K   L M

Table 3

Over voltage (OV) and over current (OC) indications from base sense card		
HEX	Indication	C-A1B2 pin
A1	OV On +5	P12
A5	OV On +6	M10
A6	OV On -4	P10
A7	OV On -5	M12
C1	OC On +5	U13
C2	OC On +8.5	U11
C3	OC On +24	U06
C4	OC On -24	S06

Note 3: Over voltage (OV) or over current (OC) indication from card C-A1C4.

Note 4: OV or OC from C-A1C5.

029

Is byte 0 data a X'AB' or X'CB' (see Note 5)?
Y N

| **030**

| Is byte 0 data a X'AC' or X'CC' (see Note 6)?
| Y N

| | **031**

| | Is byte 0 data a X'AF' or X'CF' (see Note 7)?
| | Y N

| | | **032**
| | | -Set CB1 to 0 (AC distribution box).
| | | Remove protect card C-A1B2.
| | | -Set CB1 to 1 (AC distribution box).
| | | **Is Power Check light on (operator panel)?**
| | | Y N

| | | | **033**
| | | | Bad protect card C-A1B2.

| | | **034**
| | | The YA303FB3 net has a short circuit to
| | | ground (see FSL Vol D).

| | **035**
| | **Is cable C-A1Z1 installed?**
| | Y N

| | | **036**
| | | Bad protect card C-A1B2 or board C-A1.

Note 5: OV or OC from C-A1A4T (feature power supply C).

Note 6: OV or OC from C-A1A4B (feature power supply D).

Note 7: OV or OC from C-A1Z1 (feature power supply G).

7 7 7
N P Q

037
-Set CB1 to 0 (AC distribution box)
-Set Power to 0 (operator panel).
Disconnect cable C-A1Z1.
Jumper C-A1A6B04 to C-A1A6D04.
-Set CB1 to 1 (AC distribution box)
-Set Power to 1 (operator panel).
Does the machine power up?
Y N

> **038**
> -Set CB1 to 0 (AC distribution box)
> Reconnect cable C-A1Z1.
> Remove jumper.
> Bad protect card C-A1B2.
> -Set CB1 to 1 (AC distribution box)

039
-Set Power to 0 (operator panel).
-Set CB1 to 0 (AC distribution box)
Reconnect cable C-A1Z1.
Remove jumper.
Go To Map 0594, Entry Point A.

040
Is cable C-A1A4B installed?
Y N

> **041**
> Bad protect card C-A1B2 or board C-A1.

042
-Set CB1 to 0 (AC distribution box)
-Set Power to 0 (operator panel).
Disconnect cable C-A1A4B.
Jumper C-A1A4B09 to C-A1A4B11.
-Set CB1 to 1 (AC distribution box)
-Set Power to 1 (operator panel).
Does the machine power up?
Y N

R S

043
-Set CB1 to 0 (AC distribution box)
Reconnect cable C-A1A4B.
Remove jumper.
Bad protect card C-A1B2.
-Set CB1 to 1 (AC distribution box)

044
-Set Power to 0 (operator panel).
-Set CB1 to 0 (AC distribution box)
Reconnect cable C-A1A4B.
Remove jumper.
Go To Map 0586, Entry Point A.

045
Is cable C-A1A4T installed?
Y N

> **046**
> Bad protect card C-A1B2 or board C-A1.

047
-Set CB1 to 0 (AC distribution box).
Disconnect cable C-A1A4T.
Jumper C-A1A4B02 to C-A1A4B04.
-Set CB1 to 1 (AC distribution box)
-Set Power to 1 (operator panel).

Does the machine power up?
Y N

> **048**
> **CAUTION**
>
> -Set CB1 to 0 (AC distribution box)
> Note: If C-A1A4T is connected incorrectly with control power on, the logic of feature power supply C will be destroyed.
>
> Reconnect cable C-A1A4T.
> Remove jumper.
> Bad protect card C-A1B2.
> -Set CB1 to 1 (AC distribution box)

8
T

049

CAUTION

-Set CB1 to 0 (AC distribution box)
Note: If C-A1A4T is connected incorrectly with
control power on, the logic of feature power supply
C will be destroyed.

Reconnect cable C-A1A4T.
Remove jumper.
Go To Map 0585, Entry Point A.

050
Is card C-A1C5 installed?
Y N

051
Bad protect card C-A1B2 or board C-A1.

052
Connect the CE multimeter from C-A1C5D11 (+) to   This is the +6V reference level.
C-A1C5D08 (-).
Does the CE multimeter read from 5.8 to 6.2 Vdc?
Y N

053
Connect the CE multimeter from C-A1C2B13 (+) to
C-A1C2D08 (-).
**Does the CE multimeter read from 5.8 to 6.2
Vdc?**
Y N

054
Bad base sense card C-A1C2.

055
Power logic board C-A1 is bad.

056
Connect the CE multimeter from C-A1C5D13 (-) to   This is the -6V reference level.
C-A1C5D08 (+).
Does the CE multimeter read from 5.8 to 6.2 Vdc?
Y N

9 9
U V

057
Connect the CE multimeter from C-A1C2G13 (-) to
C-A1C2J08 (+).
**Does the CE multimeter read from 5.8 to 6.2
Vdc?**
Y N

  058
  Bad base sense card C-A1C2.

059
Power logic board C-A1 is bad.

060
-Set CB1 to 0 (AC distribution box) (05-230).
Remove card C-A1C5.
-Set CB1 to 1 (AC distribution box).
-Set Power to 1 (operator panel).
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'9A'?
Y N

  061
  -Set CB1 to 0 (AC distribution box).
  Bad protect card C-A1B2.
  Reinstall feature sense card C-A1C5.
  -Set CB1 to 1 (AC distribution box).

062
-Press and hold Dply Pwr Chk (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'7F'?
Y N

  063
  -Set CB1 to 0 (AC distribution box).
  Bad protect card C-A1B2.
  Reinstall feature sense card C-A1C5.
  -Set CB1 to 1 (AC distribution box).

064
Bad feature sense card C-A1C5.

065

Is card C-A1C4 installed?
Y N

　066
　Bad protect card C-A1B2 or board C-A1.

067

Connect the CE multimeter from C-A1C4D11 (+) to   This is the +6V reference line.
C-A1C4D08 (-).
Does the CE multimeter read from 5.8 to 6.2 Vdc?
Y N

　068
　Connect the CE multimeter from C-A1C2B13 (+) to
　C-A1C2D08 (-).
　Does the CE multimeter read from 5.8 to 6.2
　Vdc?
　Y N

　　069
　　Bad base sense card C-A1C2.

　070
　Power logic board C-A1 is bad.

071

Connect the CE multimeter from C-A1C4D13 (-) to   This is the -6V reference level.
C-A1C4D08 (+).
Does the CE multimeter read from 5.8 to 6.2 Vdc?
Y N

　072
　Connect the CE multimeter from C-A1C2G13 (-) to
　C-A1C2J08 (+).
　Does the CE multimeter read from 5.8 to 6.2
　Vdc?
　Y N

　　073
　　Bad base sense card C-A1C2.

　074
　Power logic board C-A1 is bad.

1
1
W

W
1
0

075
-Set CB1 to 0 (AC distribution box) (05-230).
Remove card C-A1C4.
-Set CB1 to 1 (AC distribution box).
-Set Power to 1 (operator panel).
Is Power Check light on (operator panel)?
Y N

> **076**
> Bad feature regulator card C-A1C4.

077
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'99'?
Y N

> **078**
> -Set CB1 to 0 (AC distribution box).
> Bad protect card C-A1B2.
> Reinstall feature sense card C-A1C4.
> -Set CB1 to 1 (AC distribution box).

079
-Press and hold Dply Pwr Chk (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'7F'?
Y N

> **080**
> -Set CB1 to 0 (AC distribution box).
> Bad protect card C-A1B2.
> Reinstall feature sense card C-A1C4.
> -Set CB1 to 1 (AC distribution box).

081
Bad feature sense card C-A1C4.

082
-Set CB1 to 0 (AC distribution box) (05-230).
Remove protect card C-A1B2.
Probe the C-A1B2 pin in Table 3 for the HEX that was
recorded from byte 0.
-Set CB1 to 1 (AC distribution box).
The lights should read:

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

```
Table 3
.----------------------------.
|    Over voltage (OV) and   |
|      over current (OC)     |
|       indications from     |
|        base sense card     |
|----------------------------|
|HEX|Indication  | C-A1B2 pin|
|---+------------+-----------|
|A1 | OV On +5   |  P12      |
|A5 | OV On +6   |  M10      |
|A6 | OV On -4   |  P10      |
|A7 | OV On -5   |  M12      |
|C1 | OC On +5   |  U13      |
|C2 | OC On +8.5 |  U11      |
|C3 | OC On +24  |  U06      |
|C4 | OC On -24  |  S06      |
----------------------------
```

Connect to any D03 (+) and D08 (-) on board C-A1 for
probe power.

083
-Set CB1 to 0 (AC distribution box).
Bad base sense card C-A1C2.
Reinstall protect card C-A1B2.
-Set CB1 to 1 (AC distribution box).

084
Bad protect card C-A1B2.

085

-Set CB1 to 0 (AC distribution box) (05-230).

Remove cable J5 (05-240) from the multilevel filter assembly.

-Set CB1 to 1 (AC distribution box).

Is Power Check light on (operator panel)?

Y N

086

The multilevel filter assembly is bad.

087

-Press and hold Dply Pwr Chk (CE panel).

Record byte 0 data (CE panel).

For byte 0 data of X'C5', use the CE multimeter to isolate a short circuit to ground in the YA040J501 net (see FSL Vol D).

For byte 0 data of X'C6', use the CE multimeter to isolate a short circuit to ground in the YA040J504 net (see FSL Vol D).

For byte 0 data of X'C7', use the CE multimeter to isolate a short circuit to ground in the YA040J503 net (see FSL Vol D).

Did you find a short circuit to ground?

Y N

088

Reconnect cable J5.

Bad protect card C-A1B2.

089

Isolate the bad FRU.

Reconnect cable J5.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	023	0510	A
4	026	0547	A
4	024	0548	A
4	026	0549	A
4	027	0550	A
3	014	0573	A
2	006	0575	A
2	012	0575	A

001
(Entry Point A)

****
** Start: Power logic check procedure
Remove cable J9 (05-240).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Reconnect cable J9 (05-240).
Wait 10 seconds.
-Press and hold Dply Pwr Chk (CE panel).

Is byte 0 data a X'E5'?
Y N

  002
  Probe C-A1C2G03 (see Note 1).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

MAP DESCRIPTION:
This MAP records UV power fault information for the base regulator levels and sends the CE to a suitable power MAP.

ENTRY CONDITIONS:
The control supply status indicator lights with lamp test. The power check light is on.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2 and C-A1C2

Note 1: Connect to any D03 (+) and D08 (-) on the power logic board C-A1 for probe power.

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2 2 2
A B C

A B C
1 1 1

BASE REGULATOR UV

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MAP 0517-2

003

Bad base sense card C-A1C2.

004

Bad protect card C-A1B2.

This procedure is to verify that the base under voltage sensors work.

005

-Press and hold Dply Pwr Chk (CE panel).

-Operate Pwr Fault Dply to Search (CE panel).

Did byte 0 data change?

Y N

The Search switch must work.

006

Go To Map 0575, Entry Point A.

007

-Press and hold Dply Pwr Chk (CE panel).

Is byte 0 data a X'66'?

Y N

008

Is byte 0 data a X'7F'?

Y N

009

Probe C-A1C2J07 (see Note 1).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

Note 1: Connect to any D03 (+) and D08 (-) on the power logic board C-A1 for probe power.

010

Bad base sense card C-A1C2.

011

Bad protect card C-A1B2.

012

Go To Map 0575, Entry Point A.

3
D

013
-Press and hold Dply Pwr Chk (CE panel).
and
-Operate and hold Pwr Fault Dply to Prev (CE panel).
Is byte 0 data a X'E5'?
Y N

> **014**
> **Go To Map 0573, Entry Point A.**

015
-Press and hold Dply Pwr Chk (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Is byte 0 data a X'67'?
Y N

> **016**
> Probe C-A1C2G07 (see Note 1).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **017**
> > Bad base sense card C-A1C2.
>
> **018**
> Bad protect card C-A1B2.
>
> ** End: Power logic check procedure
> **************************************

019
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Is Power Check light on (operator panel)?
Y N

> **020**
> Cable J9 was loose.
> The loose cable was the only problem.

The Prev switch must work.

Note 1: Connect to any D03 (+) and D08 (-) on the power logic board C-A1 for probe power.

4
E

BASE REGULATOR UV

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MAP 0517-4

PAGE 4 OF 4

021
-Press and hold Dply Pwr Chk (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'E5' or X'E6'?
Y N

> **022**
> **Is byte 0 data a X'E7'?**
> **Y N**
>
> > **023**
> > **Go To Map 0510, Entry Point A.**
>
> **024**
> **Go To Map 0548, Entry Point A.**

025
-Press and hold Dply Pwr Chk (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Record byte 0 data (CE panel).
Is byte 0 data a X'66' or X'67'?
Y N

> **026**
> -Press and hold Dply Pwr Chk (CE panel).
> -Operate and hold Pwr Fault Dply to Prev (CE panel).
> Record byte 0 data (CE panel).
>
> Go to the correct MAP in the list below:
>
> For byte 0 data of X'E5'
> **Go To Map 0547, Entry Point A.**
> --------------------
> For byte 0 data of X'E6'
> **Go To Map 0549, Entry Point A.**

027
Go To Map 0550, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
8	066	0500	A
10	085	0500	A
12	108	0500	A
14	121	0500	A
16	138	0500	A
19	155	0500	A
21	172	0500	A
23	189	0500	A
26	206	0500	A
28	223	0500	A
6	053	0500	A
5	040	0500	A
4	025	0500	A
4	017	0513	A
30	235	0513	A
30	237	0513	B
31	240	0513	B
31	244	0513	B
9	074	0520	A
12	097	0520	A
13	115	0520	A
16	129	0520	A
20	163	0520	A
23	180	0520	A
24	197	0520	A
27	214	0520	A
30	231	0520	A
6	058	0520	A
6	054	0520	A
16	129	0520	B
23	180	0520	B
6	057	0557	A
6	056	0557	A
5	044	0560	A
5	043	0560	A
6	045	0561	A
5	041	0561	A

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EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	029	0593	A
4	028	0593	A
5	031	1024	B
5	032	1034	B
9	074	1084	B
12	097	1084	B
16	129	1084	B
20	163	1084	B
27	214	1084	B
9	074	1094	B
12	097	1094	B
16	129	1094	B
20	163	1094	B
27	214	1094	B
17	146	5020	A

001
(Entry Point A)
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).

(Entry Point AA)

Is Power Check light off (operator panel)?
Y N

3	3
0	B
A	

MAP DESCRIPTION:
This MAP verifies a short circuit in the load.

ENTRY CONDITIONS:
OC fault

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-A1C4

002

-Press and hold Dply Pwr Chk (CE panel).
Record the power fault display at byte 0.
Is byte 0 data a X'C2' or X'42' (+8.5 base)?
Y N

    003
    Is byte 0 data a X'C6' or X'46' (-4 base)?
    Y N

        004
        Is byte 0 data a X'C5' or X'45' (+6 base)?
        Y N

            005
            Is byte 0 data a X'C7' or X'47' (-5 base)?
            Y N

                006
                Is byte 0 data a X'C1' or X'41' (+5 base)?
                Y N

007
Is byte 0 data a X'C4' or X'44' (-24 base)?
Y N

    008
    Is byte 0 data a X'C3' or X'43' (+24 base)?
    Y N

        009
        Is byte 0 data a X'CA' or X'4A' (+5V feature B)?
        Y N

            010
            Is byte 0 data a X'C9' or X'49' (-12V feature A or feature regulator)?
            Y N

                011
                Is byte 0 data a X'C8' or X'48' (+12V feature A)?
                Y N

2 2 2 2 1
7 5 3 1 8
C D E F G H

1 1 1
6 3 2 9 6 4
J K L M N P

012
Is byte 0 data a X'CB' or X'4B' (any level on feature C)?
Y N

> **013**
> **Is byte 0 data a X'CC' or X'4C' (+5 V feature D)?**
> **Y N**
>
> > **014**
> > **Is byte 0 data a X'CF' or X'4F' (any level on feature G)?**
> > **Y N**
> >
> > > **015**
> > > -Press and hold Dply Pwr Chk (CE panel).
> > > -Operate Pwr Fault Dply to Search (CE panel).
> > > **Is byte 0 data a X'7F'?**
> > > **Y N**
> > >
> > > > **016**
> > > > **Go to Page 2, Step 001,**
> > > > **Entry Point AA.**
> > >
> > > **017**
> > > **Go To Map 0513, Entry Point A.**
> >
> > **018**
> > **Is feature power G (05-680) installed in the machine (05-250)?**
> > **Y N**
> >
> > > **019**
> > > Bad protect card C-A1B2.
> >
> > **020**
> > Disconnect C-B1J3 and C-B1J4.
> > Jumper C-B1J3B07 to C-B1J3D07.
> > -Set Power to 0 (operator panel).
> > -Set Power to 1 (operator panel).
> > **Does the machine power on?**
> > **Y N**

6 5 5
Q R S T

021
-Press and hold Dply Pwr Chk (CE panel).
Is byte 0 data a X'CF'?
Y N

> **022**
> -Press and hold Dply Pwr Chk (CE panel).
> -Operate Pwr Fault Dply to Search (CE panel).
> **Is byte 0 data a X'4F'?**
> **Y N**
>
> > **023**
> > Save this place.
> > When the new problem is solved, return here.
> > With the load still removed, go to MAP 0500, Entry Point A.
> > **(Entry Point AH)**
> > Remove jumper at C-B1J3.
> > Reconnect C-B1J3 & C-B1J4.
> > -Set Power to 1 (operator panel).
> > **Does the machine power on?**
> > **Y N**
> >
> > > **024**
> > > -Press and hold Dply Pwr Chk (CE panel).
> > > **Is byte 0 data a X'CF'?**
> > > **Y N**
> > >
> > > > **025**
> > > > **Go To Map 0500, Entry Point A.**
> > >
> > > **026**
> > > Disconnect C-B1J4.
> > > **Go to Page 5, Step 030, Entry Point AJ.**
>
> **027**
> The overcurrent fault was a secondary indication.

028
Remove jumper at C-B1J3.
Go To Map 0593, Entry Point A.

5
U

W X   MAP 0519-5

029
Remove jumper at C-B1J3.
Go To Map 0593, Entry Point A.

030
-Set Power to 0 (operator panel).
Remove jumper at C-B1J3.
Reconnect C-B1J3.
(Entry Point AJ)
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    031
    Reconnect C-B1J4.
    Go To Map 1024, Entry Point B.

032
Reconnect C-B1J4.
Go To Map 1034, Entry Point B.

033
Is feature power D (05-640) installed in the machine (05-240)?
Y N

    034
    Bad protect card C-A1B2.

035
Disconnect the 3 minibus connectors from the left side of board A-A1.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    036
    -Press and hold Dply Pwr Chk (CE panel).
    Is byte 0 data a X'CC'?
    Y N

6
V W X

037
-Press and hold Dply Pwr Chk (CE panel).
-Operate Pwr Fault Dply to Search (CE panel).
Is byte 0 data a X'4C'?
Y N

    038
    Save this place.
    When the new problem is solved, return here.
    With the load still removed, go to MAP 0500, Entry Point A.
    (Entry Point AK)
    Reconnect all minibus connectors to board A-A1.
    -Set Power to 1 (operator panel).
    Does the machine power on?
    Y N

        039
        -Press and hold Dply Pwr Chk (CE panel).
        Is byte 0 data a X'CC'?
        Y N

            040
            Go To Map 0500, Entry Point A.

        041
        Go To Map 0561, Entry Point A.

    042
    The overcurrent fault was a secondary indication.

043
Reconnect all minibus connectors to board A-A1.
Go To Map 0560, Entry Point A.

044
Reconnect all minibus connectors to board A-A1.
Go To Map 0560, Entry Point A.

Q V
4 5

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N Y Z A A A
3   A A C
    A B

MAP 0519-6

045
-Set Power to 0 (operator panel).
Reconnect all minibus connectors to board A-A1.
Go To Map 0561, Entry Point A.

046
Is feature power C (05-680) installed in the machine (05-240)?
Y N

> **047**
> Bad protect card C-A1B2.

048
Disconnect all minibus connectors from Board A-B3.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **049**
> -Press and hold Dply Pwr Chk (CE panel).
> **Is byte 0 data a X'CB'?**
> Y N
>
> > **050**
> > -Press and hold Dply Pwr Chk (CE panel).
> > -Operate Pwr Fault Dply to Search (CE panel).
> > **Is byte 0 data a X'4B'?**
> > Y N
> >
> > > **051**
> > > Save this place.
> > > When the new problem is solved, return here.
> > > With the load still removed, go to MAP 0500, Entry Point A.
> > > **(Entry Point AM)**
> > > Reconnect all minibus connectors to board A-B3.
> > > -Set Power to 1 (operator panel).
> > > **Does the machine power on?**
> > > Y N

052
-Press and hold Dply Pwr Chk (CE panel).
Is byte 0 data a X'CB'?
Y N

> **053**
> Go To Map 0500, Entry Point A.

054
Go To Map 0520, Entry Point A.

055
The overcurrent fault was a secondary indication.

056
Reconnect all minibus connectors to board A-B3.
Go To Map 0557, Entry Point A.

057
Reconnect all minibus connectors to board A-B3.
Go To Map 0557, Entry Point A.

058
-Set Power to 0 (operator panel).
Reconnect all minibus connectors to board A-B3.
Go To Map 0520, Entry Point A.

059
Is feature power A (05-610) installed in the machine (05-230)?
Y N

> **060**
> Bad protect card C-A1B2.

Y Z A A A
    A B C

7
A
D

061

Disconnect PDTB1-2 and PDTB1-3 (05-220, 05-360).

-Set Power to 0 (operator panel).

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

    062

    -Press and hold Dply Pwr Chk (CE panel).

    Is byte 0 data a X'C8'?

    Y N

        063

        -Press and hold Dply Pwr Chk (CE panel).

        -Operate Pwr Fault Dply to Search (CE panel).

        Is byte 0 data a X'48'?

        Y N

            064

            Save this place.

            When the new problem is solved, return here.

            With the load still removed, go to MAP 0500,

            Entry Point A.

            (Entry Point B)

            Reconnect PDTB1-2 and PDTB1-3.

            -Set Power to 1 (operator panel).

            Does the machine power on?

            Y N

                065

                -Press and hold Dply Pwr Chk (CE panel).

                Is byte 0 data a X'C8'?

                Y N

```
8   8  8  8  8  8
A   A  A  A  A  A
E   F  G  H  J  K
```

066
Go To Map 0500, Entry Point A.

067
Go to Step 071,
Entry Point BA.

068
The overcurrent fault was a secondary
indication.

069
Reconnect PDTB1-2 and PDTB1-3.
Go to Page 31, Step 239, Entry Point T.

070
Reconnect PDTB1-2 and PDTB1-3.
Go to Page 31, Step 239, Entry Point T.

071
Reconnect PDTB1-2 and PDTB1-3 (05-240, 05-360).
(Entry Point BA)
Remove the cables and minibus connectors in Table 1.
-Set Power to 1 (operator panel).

Table 1   +12V   feature A
```
.------------------------.
|      | Cable/   |      |
|      | minibus  |      |
| Board| connector| MAP  |
|------+----------+------|
| B-A1|   U5    * |0520,A|
| E-A1| B1A14   * |1084,B|
| E-B1| B1A14   * |1094,B|
--------------------------
```

*Cables are feature sensitive and may not be used on
your machine.

The pin given for the minibus connector is for location
only. Remove the 4 pin connector from the pin side of
the board.

Does the machine power on?
Y N

072
One or more of the cables in Table 1 is bad.

9
A
L

073
(Entry Point BB)
-Set Power to 0 (operator panel).
Reconnect the cable or minibus connector to one
board in Table 1.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

  074
  The board to which the last cable or minibus was
  connected is bad.
  Reconnect all cables and minibus connectors in
  Table 1.
  Go to the MAP for the bad board in Table 1.
  Go To Map 0520, Entry Point A.

  ---or---
  Go To Map 1084, Entry Point B.

  ---or---
  Go To Map 1094, Entry Point B.

075
Are all cables and minibus connectors in Table 1
connected?
Y N

  076
  Go to Step 073, Entry Point BB.

077
The problem was a bad connection of the cable or
minibus connector.

078
Is feature power A (05-610) or feature regulator
card C-A1C4 (05-615) installed in the machine
(05-230)?
Y N

  079
  Bad protect card C-A1B2.

1
0
A
M

This step will be repeated until a bad board is isolated
or all cables and minibus connectors have been
reconnected.

A
M
9

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A A A A A
P Q R S T

MAP 0519-10

080
Disconnect PDTB1-4 and PDTB1-5 (05-240, 05-360).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

  081
  -Press and hold Dply Pwr Chk (CE panel).
  Is byte 0 data a X'C9'?
  Y N

    082
    -Press and hold Dply Pwr Chk (CE panel).
    -Operate Pwr Fault Dply to Search (CE panel).
    Is byte 0 data a X'49'?
    Y N

      083
      Save this place.
      When the new problem is solved, return here.
      With the load still removed, go to MAP 0500,
      Entry Point A.

      (Entry Point C)
      Reconnect PDTB1-4 and PDTB1-5.
      -Set Power to 1 (operator panel).
      Does the machine power on?
      Y N

        084
        -Press and hold Dply Pwr Chk (CE panel).
        Is byte 0 data a X'C9'?
        Y N

085
Go To Map 0500, Entry Point A.

086
Go to Page 11, Step 094, Entry Point CA.

087
The overcurrent fault was a secondary indication.

088
Is feature power supply A (05-600) installed in the machine (05-230)?
Y N

  089
  Bad feature regulator card C-A1C4.
  Reconnect PDTB1-4 and PDTB1-5.

090
Reconnect PDTB1-4 and PDTB1-5.
Go to Page 31, Step 239, Entry Point T.

091
Is feature power supply A (05-600) installed in the machine (05-230)?
Y N

  092
  Bad feature regulator card C-A1C4.
  Reconnect PDTB1-4 and PDTB1-5.

093
Reconnect PDTB1-4 and PDTB1-5.
Go to Page 31, Step 239, Entry Point T.

094
Reconnect PDTB1-4 and PDTB1-5 (05-240, 05-360).
(Entry Point CA)
Remove the cables and minibus connectors in Table 2.
-Set Power to 1 (operator panel).

Table 2   -12V   feature A
                /feature reg

Board	Cable/ minibus connector	MAP
A-A2	U3A14	0520,A
A-A3	U3A14 *	0520,A
B-A1	U5 *	0520,A
E-A1	B1A14 *	1084,B
E-B1	B1A14 *	1094,B

*Cables are feature sensitive and may not be used on your machine.

The pin given for the minbus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?
Y N

095
One or more of the cables in Table 2 is bad.

096
(Entry Point CB)
-Set Power to 0 (operator panel).
Reconnect the cable or minibus connector to one board in Table 2.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

1   1
2   2
A   A
U   V

L A A
3 U V
1 1
1 1

LOAD ISOLATION

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A
X

MAP 0519-12

097
The board to which the last cable or minibus was connected is bad.
Reconnect all cables and minibus connectors in Table 2.
Go to the MAP for the bad board in Table 2.
Go To Map 0520, Entry Point A.

---or---
Go To Map 1084, Entry Point B.

---or---
Go To Map 1094, Entry Point B.

098
Are all cables and minibus connectors in Table 2 connected?
Y N

> **099**
> **Go to Page 11, Step 096, Entry Point CB.**

100
The problem was a bad connection of the cable or minibus connector.

101
Is feature power B (05-620) installed in the machine (05-230)?
Y N

> **102**
> Bad protect card C-A1B2.

103
Disconnect PDTB1-1 (05-240, 05-360).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

1
3
A A
W X

104
-Press and hold Dply Pwr Chk (CE panel).
Is byte 0 data a X'CA'?
Y N

> **105**
> -Press and hold Dply Pwr Chk (CE panel).
> -Operate Pwr Fault Dply to Search (CE panel).
> **Is byte 0 data a X'4A'?**
> Y N
>
> > **106**
> > Save this place.
> > When the new problem is solved, return here.
> > With the load still removed, go to MAP 0500, Entry Point A.
> >
> > **(Entry Point D)**
> > Reconnect PDTB1-1.
> > -Set Power to 1 (operator panel).
> > **Does the machine power on?**
> > Y N
> >
> > > **107**
> > > -Press and hold Dply Pwr Chk (CE panel).
> > > **Is byte 0 data a X'CA'?**
> > > Y N
> > >
> > > > **108**
> > > > **Go To Map 0500, Entry Point A.**
> > >
> > > **109**
> > > **Go to Page 13, Step 113, Entry Point DA.**
> >
> > **110**
> > The overcurrent fault was a secondary indication.
>
> **111**
> Reconnect PDTB1-1.
> **Go to Page 31, Step 239, Entry Point T.**

112
Reconnect PDTB1-1.
Go to Page 31, Step 239, Entry Point T.

K A
3 W
  1
  2

LOAD ISOLATION

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MAP 0519-13

113
Reconnect PDTB1-1 (05-240, 05-360).

+5V feature power supply B.

(Entry Point DA)
Remove all mini bus connectors from the pin side of
board A-A3.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    114
    The DC distribution cable to board A-A3 is bad.

115
Go To Map 0520, Entry Point A.

116
Disconnect   PDTB1-14   and   PDTB1-15   (05-240,
05-360).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    117
    -Press and hold Dply Pwr Chk (CE panel).
    Is byte 0 data a X'C3'?
    Y N

        118
        -Press and hold Dply Pwr Chk (CE panel).
        -Operate Pwr Fault Dply to Search (CE panel).
        Is byte 0 data a X'43'?
        Y N

1 1 1 1
5 4 4 4
A A B B
Y Z A B

A B B
Z A B
1 1 1
3 3 3

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MAP 0519-14

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119
Save this place.
When the new problem is solved, return here.
With the load still removed, go to MAP 0500,
Entry Point A.

(Entry Point E)
Reconnect PDTB1-14 and PDTB1-15.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **120**
> -Press and hold Dply Pwr Chk (CE panel).
> **Is byte 0 data a X'C3'?**
> Y N
>
> > **121**
> > Go To Map 0500, Entry Point A.
>
> **122**
> Go to Page 15, Step 126, Entry Point EA.

123
The overcurrent fault was a secondary indication.

124
Reconnect PDTB1-14 and PDTB1-15.
Go to Page 30, Step 236, Entry Point R.

125
Reconnect PDTB1-14 and PDTB1-15.
Go to Page 30, Step 236, Entry Point R.

126
Reconnect PDTB1-14 and PDTB1-15 (05-240, 05-360).
(Entry Point EA)
Remove the cables and minibus connectors in Table 3.
-Set Power to 1 (operator panel).

Table 3   +24V

Board	Power cable/ minibus connector	MAP
A-A2	B3A01	0520,A
	B5E01	0520,A
A-A3	B3A01	*0520,A
	B5E01	*0520,A
E-A1	B5A14	*1084,B
E-B1	B5A14	*1094,B
Diskette		0520,B

*Cables are feature sensitive and may not be used on your machine.

The pin given for the minbus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?
Y N

  127
  One or more of the cables in Table 3 is bad.

128
(Entry Point EB)
-Set Power to 0 (operator panel).
Reconnect the cable or minibus connector to one board or diskette in Table 3.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

1   1
6   6
B   B
C   D

J B B
3 C D
  1 1
  5 5

LOAD ISOLATION

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B B
F G

MAP 0519-16

129

The board or diskette to which the last cable or minibus was connected is bad.

Reconnect all cables and minibus connectors in Tabe 3.

Go to the MAP for the bad board or diskette in Table 3.

Go To Map 0520, Entry Point A.

---or---

Go To Map 0520, Entry Point B.

---or---

Go To Map 1084, Entry Point B.

---or---

Go To Map 1094, Entry Point B.

130

Are all cables and minibus connectors in Table 3 connected?

Y N

  131

  Go to Page 15, Step 128, Entry Point EB.

132

The problem was a bad connection of the cable or minibus connector.

133

Disconnect PDTB1-16 (05-240, 05-360).

-Set Power to 0 (operator panel).

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

  134

  -Press and hold Dply Pwr Chk (CE panel).

  Is byte 0 data a X'C4'?

  Y N

1
7
B B B
E F G

135

-Press and hold Dply Pwr Chk (CE panel).

-Operate Pwr Fault Dply to Search (CE panel).

Is byte 0 data a X'44'?

Y N

  136

  Save this place.

  When the new problem is solved, return here.

  With the load still removed, go to MAP 0500, Entry Point A.

  (Entry Point F)

  Reconnect PDTB1-16.

  -Set Power to 1 (operator panel).

  Does the machine power on?

  Y N

    137

    -Press and hold Dply Pwr Chk (CE panel).

    Is byte 0 data a X'C4'?

    Y N

      138

      Go To Map 0500, Entry Point A.

    139

    Go to Page 17, Step 143, Entry Point FA.

  140

  The overcurrent fault was a secondary indication.

141

Reconnect PDTB1-16.

Go to Page 30, Step 236, Entry Point R.

142

Reconnect PDTB1-16.

Go to Page 30, Step 236, Entry Point R.

143

Reconnect PDTB1-16 (05-240, 05-360).

(Entry Point FA)

Remove the cables and minibus connectors in Table 4.

-Set Power to 1 (operator panel).

```
Table 4   +24V
.------------------------.
|      |  Minibus    |     |
| Board|  connector  |     |
|------+-------------+-----|
| A-A2|  B4A14       |     |
| A-A3|  B4A14   *   |     |
.------------------------.
```

*Cables are feature sensitive and may not be used on your machine.

The pin given for the minbus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?

Y N

> **144**
> One or more of the cables in Table 4 is bad.

145

(Entry Point FB)

-Set Power to 0 (operator panel).

Reconnect the minibus connector to one board in Table 4.

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

> **146**
> The board to which the last minibus was connected is bad.
> Reconnect all minibus connectors in Table 4.
> **Go To Map 5020, Entry Point A.**

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

147

Are all minibus connectors in Table 4 connected?

Y N

> **148**
> Go to Step 145, Entry Point FB.

1
8
B
H

149

The problem was a bad connection of the minibus connector.

150

Disconnect the load cables going to the +5V plate (05-360) on the DC distribution assembly (05-220) (see Note 2).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

  151
  -Press and hold Dply Pwr Chk (CE panel).
  Is byte 0 data a X'C1'?
  Y N

    152
    -Press and hold Dply Pwr Chk (CE panel).
    -Operate Pwr Fault Dply to Search (CE panel).
    Is byte 0 data a X'41'?
    Y N

      153
      Save this place.
      When the new problem is solved, return here.
      With the load still removed, go to MAP 0500, Entry Point A.

      (Entry Point G)
      Reconnect all cables to the +5V plate.
      -Set Power to 1 (operator panel).
      Does the machine power on?
      Y N

        154
        -Press and hold Dply Pwr Chk (CE panel).
        Is byte 0 data a X'C1'?
        Y N

Note 2: Load cables are connected to the +5V plate excluding the three large cables in the top left corner and the sense cable from the bottom left corner to E10 on the distribution PC board.

```
1 1 1 1 1 1
9 9 9 9 9 9
B B B B B B
J K L M N P
```

B B B B B B **LOAD ISOLATION**   MAP 0519-19
J K L M N P
1 1 1 1 1 1 **5340 SYSTEMS UNIT**
8 8 8 8 8 8
        PAGE 19 OF 31

155
Go To Map 0500, Entry Point A.

156
Go to Step 160,
Entry Point GA.

157
The overcurrent fault was a secondary indication.

158
Reconnect the load cables to the +5V plate.
Go to Page 30, Step 236, Entry Point R.

159
Reconnect the load cables to the +5V plate.
Go to Page 30, Step 236, Entry Point R.

160
Reconnect all cables to the +5V plate.
(Entry Point GA)
Remove the cables and minibus connectors in Table 5.
-Set Power to 1 (operator panel).

Table 5   +5V

Board	Minibus connector	MAP
A-A1	(A11)	0520,A
A-A2	(A11)	0520,A
A-A3	(A11) *	0520,A
E-A1	B2A14 *	1084,B
	B4A14 *	
E-B1	B2A14 *	1094,B
	B4A14 *	

*Cables are feature sensitive and may not be used on your machine.

The pin given for the minbus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?
Y N

2 2
0 0
B B
Q R

05JAN81   PN 4237471

EC 835083   PEC 835000

MAP 0519-19

BQT9
BR19

LOAD ISOLATION

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MAP 0519-20

161
One or more of the cables in Table 5 is bad.

162
(Entry Point GB)
-Set Power to 0 (operator panel).
Reconnect the minibus connector to one board in Table 5.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **163**
> The board to which the last minibus was connected is bad.
> Reconnect all minibus connectors in Table 5.
> Go to the MAP for the bad board in Table 5.
> **Go To Map 0520, Entry Point A.**
>
> --------------------
> ---or---
> **Go To Map 1084, Entry Point B.**
> --------------------
> ---or---
> **Go To Map 1094, Entry Point B.**

164
Are all minibus connectors in Table 5 connected?
Y N

> **165**
> **Go to Step 162, Entry Point GB.**

166
The problem was a bad connection of the minibus connector.

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

F
3

LOAD ISOLATION

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B B B B B
T U V W X

MAP 0519-21

167
Disconnect PDTB1-9, PDTB1-10, and PDTB1-11
(05-240, 05-360).
CAUTION

When the -5V load is removed, also remove the +8.5V
load.
Also disconnect PDTB1-12 and PDTB1-13.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **168**
> -Press and hold Dply Pwr Chk (CE panel).
> **Is byte 0 data a X'C7'?**
> Y N
>
> > **169**
> > -Press and hold Dply Pwr Chk (CE panel).
> > -Operate Pwr Fault Dply to Search (CE panel).
> > **Is byte 0 data a X'47'?**
> > Y N
> >
> > > **170**
> > > Save this place.
> > > When the new problem is solved, return here.
> > > With the load still removed, go to MAP 0500,
> > > Entry Point A.
> > >
> > > **(Entry Point H)**
> > > Reconnect PDTB1-9, PDTB1-10, PDTB1-11,
> > > PDTB1-12, and PDTB1-13.
> > > -Set Power to 1 (operator panel).
> > > **Does the machine power on?**
> > > Y N
> > >
> > > > **171**
> > > > -Press and hold Dply Pwr Chk (CE panel).
> > > > **Is byte 0 data a X'C7'?**
> > > > Y N

2
2
B B B B B
S T U V W X

172
Go To Map 0500, Entry Point A.

173
Go to Page 22, Step 177, Entry Point HA.

174
The overcurrent fault was a secondary indication.

175
Reconnect PDTB1-9, PDTB1-10, PDTB1-11,
PDTB1-12 and PDTB1-13.
Go to Page 31, Step 242, Entry Point S.

176
Reconnect PDTB1-9, PDTB1-10, PDTB1-11, PDTB1-12
and PDTB1-13.
Go to Page 31, Step 242, Entry Point S.

177

Reconnect PDTB1-9, PDTB1-10, PDTB1-11 PDTB1-12,
and PDTB1-13.
(Entry Point HA)
Remove the cables and minibus connectors in Table 6.
-Set Power to 1 (operator panel).

Table 6   -5V

Board	Power cable/ minibus connector	MAP
A-A1	S1C13	0520,A
	P1B13	0520,A
	G6C02	0520,A
	D6B02	0520,A
A-A2	U2A14	0520,A
	U4A14	0520,A
A-A3	U2A14 *	0520,A
	U4A14 *	0520,A
B-A1	U5 *	0520,A
	diskette	0520,B

*Cables are feature sensitive and may not be used on
your machine.

The pin given for the minbus connector is for location
only. Remove the 4 pin connector from the pin side of
the board.

Does the machine power on?
Y N

  178
  One or more of the cables in Table 6 is bad.

179
(Entry Point HB)
-Set Power to 0 (operator panel).
Reconnect the cable or minibus connector to one board
or diskette in Table 6.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

This step will be repeated until a bad board is isolated
or all cables and minibus connectors have been
reconnected.

2 2
3 3
B B
Y Z

E B B
3 Y Z
   2 2
   2 2

LOAD ISOLATION

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C C C
B C D

MAP 0519-23

180

The board or diskette to which the last cable or minibus was connected is bad.

Reconnect all cables and minibus connectors in Table 6.

Go to the 0520 MAP entry point for the bad board or diskette in Table 6.

Go To Map 0520, Entry Point A.

---or---

Go To Map 0520, Entry Point B.

181

Are all cables and minibus connectors in Table 6 connected?
Y N

   182
   Go to Page 22, Step 179, Entry Point HB.

183

The problem was a bad connection of the cable or minibus connector.

184

Disconnect PDTB1-8 (05-240, 05-360).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   185
   -Press and hold Dply Pwr Chk (CE panel).
   Is byte 0 data a X'C5'?
   Y N

      186
      -Press and hold Dply Pwr Chk (CE panel).
      -Operate Pwr Fault Dply to Search (CE panel).
      Is byte 0 data a X'45'?
      Y N

187

Save this place.
When the new problem is solved, return here.
With the load still removed, go to MAP 0500, Entry Point A.

(Entry Point I)
Reconnect PDTB1-8.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   188
   -Press and hold Dply Pwr Chk (CE panel).
   Is byte 0 data a X'C5'?
   Y N

      189
      Go To Map 0500, Entry Point A.

   190
   Go to Page 24, Step 194, Entry Point IA.

191

The overcurrent fault was a secondary indication.

192

Reconnect PDTB1-8.
Go to Page 31, Step 242, Entry Point S.

193

Reconnect PDTB1-8.
Go to Page 31, Step 242, Entry Point S.

2
4
C C C C
A B C D

194
Reconnect PDTB1-8 (05-210).
(Entry Point IA)
Remove the cables and minibus connectors in Table 7.
-Set Power to 1 (operator panel).

Table 7 +6V

Board	Minibus connector	
A-A2	B3E01	
	B4A01	
A-A3	B3E01	*
	B4A01	*

*Cables are feature sensitive and may not be used on your machine.

The pin given for the minbus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?
Y N

  195
  One or more of the cables in Table 7 is bad.

196
(Entry Point IB)
-Set Power to 0 (operator panel).
Reconnect the minibus connector to one board in Table 7.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

  197
  The board to which the last minibus was connected is bad.
  Reconnect all minibus connectors in Table 7.
  Go To Map 0520, Entry Point A.

198
Are all minibus connectors in Table 7 connected?
Y N

  199
  Go to Step 196, Entry Point IB.

2
5
C
E

200

The problem was a bad connection of the minibus connector.

201

Disconnect PDTB1-6 and PDTB1-7 (05-240, 05-360).

-Set Power to 0 (operator panel).

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

    202

    -Press and hold Dply Pwr Chk (CE panel).

    Is byte 0 data a X'C6'?

    Y N

        203

        -Press and hold Dply Pwr Chk (CE panel).

        -Operate Pwr Fault Dply to Search (CE panel).

        Is byte 0 data a X'46'?

        Y N

            204

            Save this place.

            When the new problem is solved, return here.

            With the load still removed, go to MAP 0500, Entry Point A.

            (Entry Point J)

            Reconnect PDTB1-6 and PDTB1-7.

            -Set Power to 1 (operator panel).

            Does the machine power on?

            Y N

                 205

                 -Press and hold Dply Pwr Chk (CE panel).

                 Is byte 0 data a X'C6'?

                 Y N

2 2 2 2 2 2
6 6 6 6 6 6
C C C C C C
F G H J K L

206
Go To Map 0500, Entry Point A.

207
Go to Step 211,
Entry Point JA.

208
The overcurrent fault was a secondary
indication.

209
Reconnect PDTB1-6 and PDTB1-7.
Go to Page 31, Step 242, Entry Point S.

210
Reconnect PDTB1-6 and PDTB1-7.
Go to Page 31, Step 242, Entry Point S.

211
Reconnect PDTB1-6 and PDTB1-7 (05-240).
(Entry Point JA)
Remove the minibus connectors in Table 8.
-Set Power to 1 (operator panel).

Table 8   -4V

Board	Minibus connector	MAP
A-A2	B3A14	0520,A
A-A3	B3A14	*0520,A
E-A1	B2A14	*1084,B
	B4A14	*
E-B1	B2A14	*1094,B
	B4A14	*

*Cables are feature sensitive and may not be used on
your machine.

The pin given for the minbus connector is for location
only. Remove the 4 pin connector from the pin side of
the board.

Does the machine power on?
Y N

212
One or more of the cables in Table 8 is bad.

2
7
C
M

213

(Entry Point JB)

-Set Power to 0 (operator panel).

Reconnect the minibus connector to one board in Table 8.

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

> **214**
>
> The board to which the last minibus was connected is bad.
>
> Reconnect all minibus connectors in Table 8.
>
> Go to the MAP for the bad board in Table 8.
>
> **Go To Map 0520, Entry Point A.**
>
> ---------------------
>
> ---or---
>
> **Go To Map 1084, Entry Point B.**
>
> ---------------------
>
> ---or---
>
> **Go To Map 1094, Entry Point B.**

215

Are all minibus connectors in Table 8 connected?

Y N

> **216**
>
> **Go to Step 213, Entry Point JB.**

217

The problem was a bad connection of the minibus connector.

218

Disconnect PDTB1-12 and PDTB1-13 (05-240, 05-360).

-Set Power to 0 (operator panel).

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

2 2
9 8
C C
N P

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

219
-Press and hold Dply Pwr Chk (CE panel).
Is byte 0 data a X'C2'?
Y N

    220
    -Press and hold Dply Pwr Chk (CE panel).
    -Operate Pwr Fault Dply to Search (CE panel).
    Is byte 0 data a X'42'?
    Y N

        221
        Save this place.
        When the new problem is solved, return here.
        With the load still removed, go to MAP 0500,
        Entry Point A.

        (Entry Point K)
        Reconnect PDTB1-12 and PDTB1-13.
        -Set Power to 1 (operator panel).
        Does the machine power on?
        Y N

            222
            -Press and hold Dply Pwr Chk (CE panel).
            Is byte 0 data a X'C2'?
            Y N

                223
                Go To Map 0500, Entry Point A.

            224
            Go to Page 29, Step 228, Entry Point KA.

        225
        The overcurrent fault was a secondary indication.

    226
    Reconnect PDTB1-12 and PDTB1-13.
    Go to Page 30, Step 236, Entry Point R.

227
Reconnect PDTB1-12 and PDTB1-13.
Go to Page 30, Step 236, Entry Point R.

228
Reconnect PDTB1-12 and PDTB1-13.
(Entry Point KA)
Remove the cables and minibus connectors in Table 9.
-Set Power to 1 (operator panel).

```
Table 9   +8.5V
.----------------------.
|      |  Cable/       |     |
|      |  minibus      |     |
| Board|  connector    |     |
|------+-----------+-----|
|  A-A1|  D6C02         |     |
|      |  G6D02         |     |
|      |  P1C13         |     |
|      |  S1D13         |     |
|  A-A2|  U3E01         |     |
|      |  U4E01         |     |
|      |  U5E01         |     |
|  A-A3|  U3E01    *   |     |
|      |  U4E01    *   |     |
|      |  U5E01    *   |     |
|  B-A1|  U5       *   |     |
 ----------------------
```

*Cables are feature senstive and may not be used on your machine.

The pin given for the minibus connector is for location only. Remove the 4 pin connector from the pin side of the board.

Does the machine power on?
Y N

229
One or more of the cables in Table 9 is bad.

230
(Entry Point KB)
-Set Power to 0 (operator panel).
Reconnect the cable or minibus connector to one board in Table 9.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

This step will be repeated until a bad board is isolated or all cables and minibus connectors have been reconnected.

3 3
0 0
C C
Q R

231

The board to which the last cable or minibus was connected is bad.

Reconnect all cables and minibus connectors in Table 9.

Go To Map 0520, Entry Point A.

232

Are all cables and minibus connectors in Table 9 connected?
Y N

> **233**
> **Go to Page 29, Step 230, Entry Point KB.**

234

The problem was a bad connection of the cable or minibus connector.

235
Go To Map 0513, Entry Point A.

236

(Entry Point R)

Jumper C-A1C2B04 to C-A1C2D08.

Remove J6 (05-240).

-Set Power to 1 (operator panel).

Reinstall J6.

Remove jumper

-Press and hold Dply Pwr Chk (CE panel).

Is byte 0 data a X'E1'?
Y N

> **237**
> **Go To Map 0513, Entry Point B.**

238

The multilevel filter assembly is bad.

---or---

The distribution PC board is bad.

239
(Entry Point T)
Jumper C-A1C2B04 to C-A1C2D08.
Remove J6 (05-240).
-Set Power to 1 (operator panel).
Reinstall J6.
Remove jumper
-Press and hold Dply Pwr Chk (CE panel).
Is byte 0 data a X'E1'?
Y N

> **240**
> **Go To Map 0513, Entry Point B.**

241
The distribution PC board is bad.

242
(Entry Point S)
Remove J5 (05-240).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **243**
> -Press and hold Dply Pwr Chk (CE panel).
> Record byte 0 data (CE panel).
> **Is byte 0 data A X'E5', X'E6', OR, X'E7'.**
> Y N
>
> > **244**
> > Reinstall J5.
> > **Go To Map 0513, Entry Point B.**
>
> **245**
> The multilevel filter assembly is bad.
> Reinstall J5.

246
The multilevel filter assembly is bad.
Reinstall J5.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	A	1	001
0519	B	4	024

001
(Entry Point A)
To isolate failing loads from the board, do the following:
Remove all cards from socket positions A to K (note 1). Some of the cards may not be present.
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP isolates a short in the load.

ENTRY CONDITIONS:
All cables have been reconnected. The problem has been isolated to one board. All card socket locations in this MAP refer to the failing board that has already been isolated.

START CONDITIONS:
Before starting this MAP, perform the operations in MAP 0519.

LOGIC CARDS TESTED:
All

Note 1: Do not remove any cables in these positions.

Does the machine power on?
Y N

  002
  Remove all cards from socket positions L to V on the failing board (note 1).
  -Set Power to 1 (operator panel).
  Does the machine power on?
  Y N

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```
5 4 2
A B C
```

003

Remove all cables (except A-A1Y1 and A-A1A2 if on board A-A1).

-Set Power to 1 (operator panel).

Does the machine power on?

Y N

> **004**
>
> **Is board A-A1 failing?**
>
> Y N
>
> > **005**
> >
> > The board is bad.
> > Reinstall all cards.
> > Reconnect all cables.
>
> **006**
>
> Remove cables A-A1A2 and A-A1Y1.
> Jumper from C-A1B2B13 to C-A1B2D08.
> Remove the jumper (see Note 2).
> **Does the machine power on?**
>
> Y N
>
> > **007**
> >
> > Board A-A1 is bad.
> > Reconnect cables.
> > Reinstall all cards.
>
> **008**
>
> Jumper from C-A1B2D10 to C-A1B2D08.
> Remove the jumper (see Note 3).
> Reconnect cable A-A1A2.
> Jumper from C-A1B2B13 to C-A1B2D08.
> Remove the jumper (see Note 2).
> **Does the machine power on?**
>
> Y N

Note 2: Installing and removing this jumper simulates setting power to 1.

Note 3: Installing and removing this jumper simulates setting power to 0.

```
3   3   3
D   E   F
```

009
Jumper from C-A1B2D10 to C-A1B2D08.
Remove the jumper (see Note 3).
Remove the cable from the operator panel.
Jumper from C-A1B2B13 to C-A1B2D08.
Remove the jumper (see Note 2).
Does the machine power on?
Y N

> **010**
> The cable is bad.
> Reconnect all cables.
> Reinstall all cards.

011
The operator panel is bad.
Reconnect all cables.
Reinstall all cards.

012
Reconnect cable A-A1Y1.
-Set Power to 0 (operator panel).
Remove cable C-A1A2.
Jumper from C-A1B2B13 to C-A1B2D08.
Remove the jumper (see Note 2).
Does the machine power on?
Y N

> **013**
> The cable is bad.
> Cable A-A1Y1 is bad.
> Reconnect all cables.
> Reinstall all cards.

014
Board C-A1 is bad.
Reconnect all cables.
Reinstall all cards.

015
One or more of the cables removed is failing.
Reinstall the cables one at a time and attempt power up until locating the failing cable.
Disconnect the other end of the failing cable.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **016**
> The cable is bad.
> Reinstall all cards and cables removed.

017
Does the failing cable go to the disk?
Y N

> **018**
> **Does the failing cable go to the diskette?**
> Y N
>
>> **019**
>> **Does the failing cable go to the CE panel (A-A1A3, A-A1A4, A-A1A5)?**
>> Y N
>>
>>> **020**
>>> **Does the failing cable go to another board?**
>>> Y N
>>>
>>>> **021**
>>>> The cable is bad.
>>>
>>> **022**
>>> The failure is at the second board.
>>> Reinstall all cards and cables on the first board.
>>> Reinstall the cable at the second board and repeat this procedure for the second board except do not remove the failing cable even if the MAP says to do so.
>>> **Go to Page 1, Step 001, Entry Point A.**

4 4 4
G H J

023
The CE panel is bad.
Reinstall all cables and cards removed.

024
(Entry Point B)
Remove the card from the diskette.
Reinstall cables
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   025
   The diskette drive is bad (circuit to ground).
   Reinstall cables and cards.

026
The card removed is bad.
Reinstall all cables and cards removed.

027
Remove the cards from the failing disk board
Reinstall cables.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   028
   The disk is bad (short circuit to ground).
   Reinstall all cables and cards removed.

029
One or more of the cards in disk board has a short
circuit to ground.
Install one card at a time to determine which card is
bad.
Reinstall all cables and cards removed.

030
Reinstall all cards removed earlier to locations A to Q.
Does the machine power on?
Y N

5
K L

031
Remove cards from locations N, P and Q.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   032
   Remove card at location M.
   -Set Power to 1 (operator panel).
   Does the machine power on?
   Y N

      033
      Card at location L is bad.
      Reinstall other cards removed earlier.

   034
   Card at location M is bad.
   Reinstall other cards removed earlier.

035
Reinstall cards to location N.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   036
   Card at location N is bad.
   Reinstall other cards removed earlier.

037
Reinstall card to location P.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   038
   Card at location P is bad.
   Reinstall other cards removed earlier.

039
Card at location Q is bad.
Reinstall other cards removed earlier.

040
Reinstall cards to locations R and S.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **041**
> Remove card from location S.
> -Set Power to 1 (operator panel).
> **Does the machine power on?**
> Y N
>
> > **042**
> > Card at location R is bad.
> > Reinstall other cards removed earlier.
>
> **043**
> Card at location S is bad.
> Reinstall other cards removed earlier.

044
Reinstall card to location T.
Does the machine power on?
Y N

> **045**
> Card at location T is bad.
> Reinstall other cards removed earlier.

046
Reinstall card to location U.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **047**
> Card at location U is bad.
> Reinstall other cards removed earlier.

048
Card at location V is bad.

049
Reinstall cards to socket position A to E.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **050**
> Remove cards from locations C, D and E.
> -Set Power to 1 (operator panel).
> **Does the machine power on?**
> Y N
>
> > **051**
> > Remove all cards in location A.
> > -Set Power to 1 (operator panel).
> > **Does the machine power on?**
> > Y N
> >
> > > **052**
> > > Card in location B is bad.
> > > Reinstall all cards removed earlier.
> >
> > **053**
> > One or more of the cards in location A is bad.
> > Reinstall one card at a time to isolate the bad card.
> > The card is bad.
> > Reinstall all cards removed earlier.
>
> **054**
> Reinstall cards to location C.
> -Set Power to 1 (operator panel).
> **Does the machine power on?**
> Y N
>
> > **055**
> > Card in location C is bad.
> > Reinstall all other cards which were removed earlier.

6 6
M N

056
Reinstall cards to location D.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    057
    Card at location D is bad.
    Reinstall other cards which were removed earlier.

058
Card at location E is bad.
Reinstall other cards which were removed earlier.

059
Reinstall cards to locations F and G.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    060
    Remove the card from location F.
    -Set Power to 1 (operator panel).
    Does the machine power on?
    Y N

        061
        Card in location G is bad.
        Reinstall all other cards removed earlier.

    062
    Card in location F is bad.
    Reinstall all other cards which were removed earlier.

063
Reinstall card to location H.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    064
    Card at location H is bad.
    Reinstall all other cards which were removed earlier.

P

065
Reinstall card to location J.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    066
    Card at location J is bad.
    Reinstall all other cards which were removed earlier.

067
Card at location K is bad.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
1080	A	1	001
1090	A	1	001

001
(Entry Point A)
-Set Power to 0 (operator panel).
Remove the cover (05-310) from the AC box (05-230).

DANGER

There is high voltage present inside the AC box as long as the machine is connected to the power line.

Connect the CE multimeter from terminal 4 (3) to terminal 6 (6) on relay K2 (see Note 2).
-Set Power to 1 (operator panel).

Does the CE multimeter read between 200 and 235 Vac (see Note 1)?
Y N

 002
 -Set Power to U (operator panel).
 Connect the CE multimeter from terminal 7 (1) to terminal 9 (4) on relay K2 (see Note 2).
 -Set Power to 1 (operator panel).
 Does the CE multimeter read between 200 and 235 Vac (see Note 1)?
 Y N

MAP DESCRIPTION:
This MAP leads to the failing FRU (inside the AC box) that caused the no AC to disks symptom.

ENTRY CONDITIONS:
The machine is powered up (CB1 and power switches on). There is no AC voltage on ACTB1-15 and ACTB1-16.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

Note 2: An alternate K2 is used in some countries (see 05-310). Numbers in parentheses identify the terminals on the alternate K2.

```
3   3   2
A   B   C
```

003

-Set Power to 0 (operator panel).
Connect the CE multimeter from ACTB1-7 to ACTB1-10.
-Set Power to 1 (operator panel).

Does the CE multimeter read between 200 and 235 Vac (see Note 1)?
Y N

┊ **004**
┊ -Set Power to 0 (operator panel).
┊ Connect the CE multimeter from ACTB1-7 to ACTB1-12.
┊ -Set Power to 1 (operator panel).
┊ **Does the CE multimeter read between 200 and 235 Vac (see Note 1)?**
┊ Y N
┊ ┊
┊ ┊ **005**
┊ ┊ ACTB1 is bad.
┊ ┊ A jumper is missing
┊ ┊ ---or---
┊ ┊ Screws are loose.
┊
┊ **006**
┊ The cables from ACTB1-7 and ACTB1-10 to relay K2 terminals 7 (1) and 9 (4) are bad (see Note 2).

007
The cables from ACTB1-7 and ACTB1-10 to relay K2 terminals 7 (1) and 9 (4) are bad (see Note 2).

Note 1: Use a CE multimeter to perform the measurements in this MAP. All transformers used in this system must have the primary windings connected as follows:

```
.----------------------.
|      | Line voltage  |
|XFMR |----------------|
| TB  | 50 HZ | 60 HZ  |
|----+--------+--------|
| 1   |Common |Common  |
| 2   |200 Vac|200 Vac |
| 3   |220 Vac|208 Vac |
| 4   |235 Vac|230 Vac |
| 5   |Ground |Ground  |
----------------------
```

008

Observe relay K2 while you:

-Set Power to 0 (operator panel).

-Set Power to 1 (operator panel).

Does relay K2 pick?

Y N

> **009**
>
> Connect the CE multimeter from the lower DC terminal (+) to the upper DC terminal (-) on relay K2.
>
> **Does the CE multimeter read more than 20 Vdc?**
>
> Y N
>
> > **010**
> >
> > The YA301DC4 net has an open circuit (see FSL Vol D).
>
> **011**
>
> Relay K2 is bad.

012

Relay K2 is bad.

013

The cables from relay K2 to ACTB1-15 and ACTB1-16 are bad.
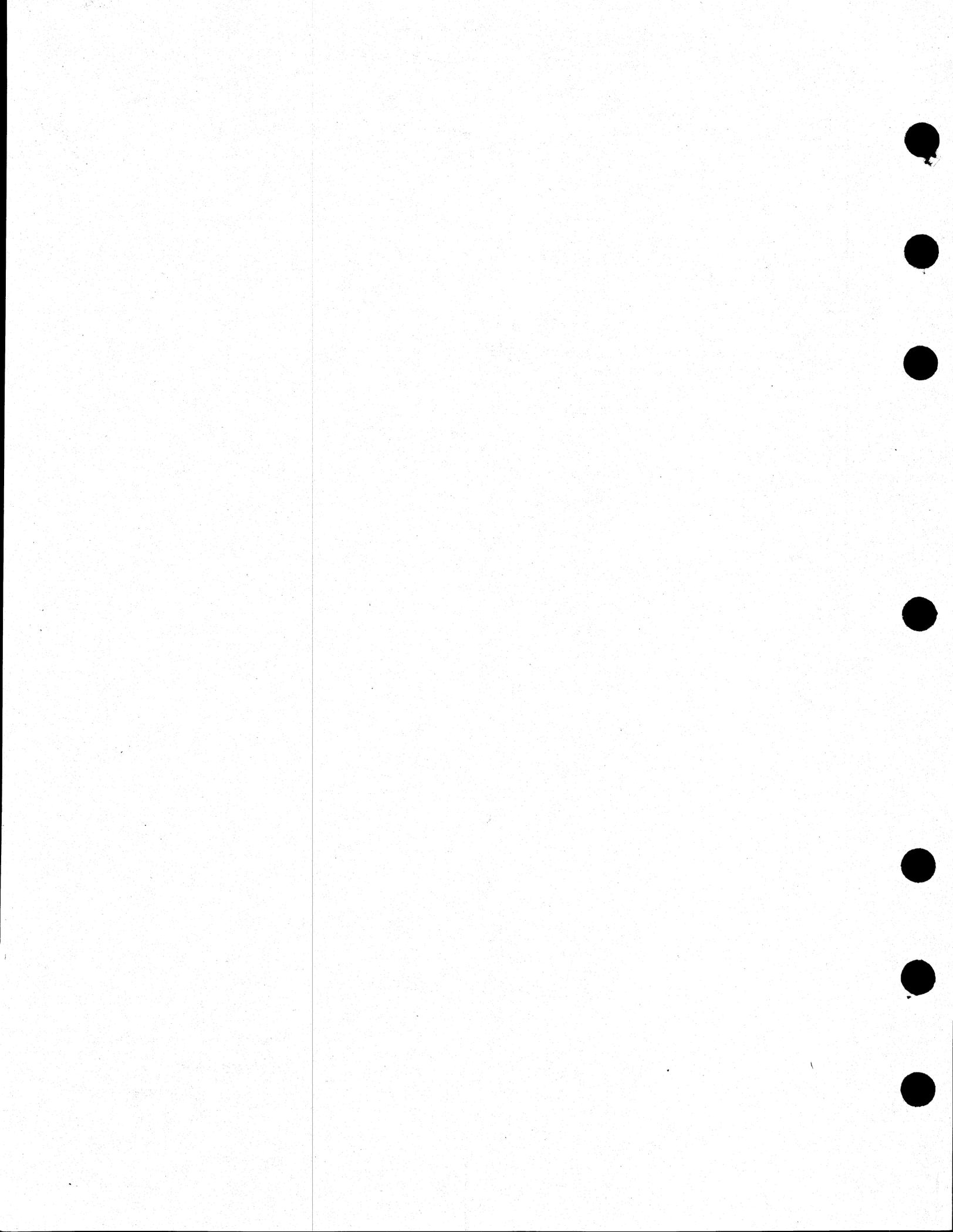
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0555	A	1	001

001
(Entry Point A)
-Set Power to 0 (operator panel).
-Set CB1 to 0 (AC distribution box) (05-230).

DANGER

High voltage is present in the AC box while the machine is connected to the power line.

Disconnect the feature power supply C AC cable from ACTB1-3 and ACTB1-5 (05-230).
Remove the F203 fuse (05-310).
Connect the CE multimeter between the cable removed from ACTB1-3 and the frame (see Note 1).

Does the CE multimeter read less than 100 ohms?
Y N

  002
  Connect the CE multimeter between the cable removed from ACTB1-3 and the cable removed from ACTB1-5.
  Does the CE multimeter read less than 100 ohms?
  Y N

MAP DESCRIPTION:
This MAP guides the CE to the failing FRU (inside or on the AC box) that caused a feature C UV indication on the CE panel.

ENTRY CONDITIONS:
The F203 fuse is bad. The feature power supply C ferroresonant transformer is disconnected.

START CONDITIONS:
Perform the operations in MAP 0555.

LOGIC CARDS TESTED:
None

Note 1: Use a CE multimeter to perform the measurements in this MAP. Perform all measurements on the R X 10 scale.

```
2 2 2
A B C
```

07JUL80   PN 8265889

EC 835009   PEC -------

MAP 0529-1

A B C
1 1 1

FEATURE C LEVEL UV

MAP 0529-2

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PAGE 2 OF 2

003
Connect the CE multimeter from the cable removed from TB7-1 to the other cable removed from TB7 on power supply C.
Does the CE multimeter read less than 100 ohms?
Y N

004
The cable from ACTB1-3 to the feature power supply C is bad (short circuit to ground).

005
Both cables connecting the feature power supply C ferroresonant transformer to ACTB1 are bad.

006
The F203 fuse holder assembly is bad.

007
The F203 fuse holder assembly is bad (short circuit to ground).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0558	A	1	001

001
(Entry Point A)
-Set Power to 0 (operator panel).
-Set CB1 to 0 (AC distribution box) (05-230).

DANGER

High voltage is present in the AC box while the machine is connected to the power line.

Disconnect the feature power supply D AC cable from ACTB1-4 and ACTB1-5 (05-230).
Remove the F204 fuse (05-310).
Connect the CE multimeter from the cable removed from ACTB1-4 to frame ground (see Note 1).

Does the CE multimeter read less than 100 ohms?
Y N

  002
  Connect the CE multimeter from the cable removed from ACTB1-4 to the cable removed from ACTB1-5.
  Does the CE multimeter read less than 100 ohms?
  Y N

MAP DESCRIPTION:
This MAP guides the CE to the failing FRU (inside or on the AC box) that caused a feature D UV indication on the CE panel.

ENTRY CONDITIONS:
The F204 fuse is bad. The feature power supply D ferroresonant transformer is disconnected.

START CONDITIONS:
Perform the operations in MAP 0558.

LOGIC CARDS TESTED:
None

Note 1: Use a CE multimeter to perform the measurements in this MAP. Perform measurements on the R X 10 scale.

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2 2 2
A B C

06OCT80   PN 8266252
EC 835034   PEC -------
MAP 0530-1

A B C
1 1 1

003

Connect the CE multimeter from the cable removed from TB8-1 to the other cable removed from TB8 on feature power supply D.
Does the CE multimeter read less than 100 ohms?
Y N

004

The cable from ACTB1-4 to the feature power supply D is bad (short circuit to ground).

005

The cable from the feature power supply D ferroresonant transformer to ACTB1 is bad.

006

The F204 fuse holder assembly is bad.

007

The F204 fuse holder assembly is bad (short circuit to ground).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0500	B
2	005	0529	A

001
(Entry Point A)
Remove the F203 fuse from the AC box (05-230).

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the AC box, the controller, or the supply.

ENTRY CONDITIONS:
A UV error is indicated on feature power supply C.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Is the F203 fuse good?
Y N

    002
    Install a good fuse in F203.
    -Set Power to 0 (operator panel).
    -Set Power to 1 (operator panel).
    Does the machine power on?
    Y N

        003
        Remove the F203 fuse.
        Is the F203 fuse good?
        Y N

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```
3 2 2 2
A B C D
```

004
-Set CB1 to 0 (AC distribution box).
Disconnect AC from TB7 (05-630) at feature power supply C (05-220) (see Note 1).
Install a good fuse in F203 (AC box).
-Set CB1 to 1 (AC distribution box).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Remove the F203 fuse.

Note 1: The CE multimeter may read as high as 235 Vac.

```
.---------------------.
|     | Line voltage  |
|XFMR |---------------|
| TB  | 50 HZ | 60 HZ |
|----+-------+--------|
| 1  |Common |Common  |
| 2  |200 Vac|200 Vac |
| 3  |220 Vac|208 Vac |
| 4  |235 Vac|230 Vac |
| 5  |Ground |Ground  |
----------------------
```

Is the F203 fuse good?
Y N

   005
   Install a good fuse in F203.

   Go To Map 0529, Entry Point A.

006
Reinstall the F203 fuse.
Feature power supply C is bad.
Reconnect the AC cable to TB7.

When the supply is isolated, check for bad fuse..

007
Reinstall fuse F203.
The blown fuse was caused by another problem.
Go To Map 0500, Entry Point B.

008
The blown fuse was the only problem.

009
Reinstall the F203 fuse.
Jumper C-A1A4B02 to C-A1A4B04.
Disconnect J11 (05-240).
Disconnect J12 (05-240).
Disconnect J13 (05-240).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **010**
> Connect the CE multimeter from C-A1A4B06(+) to
> C-A1A4D08(-).
> **Does the CE multimeter read more than +4 Vdc?**
> Y N
>
> > **011**
> > The YA134BB4 net has a short circuit (see FSL
> > Vol D).
> > Reconnect J11.
> > Reconnect J12.
> > Reconnect J13.
> > Remove jumper.
>
> **012**
> Bad protect card C-A1B2.
> Reconnect J11.
> Reconnect J12.
> Reconnect J13.
> Remove jumper.

A
1

4
E

013
While the machine power is on, connect the CE multimeter from the J13 pins to J13-1 (return) on the feature power supply C PC board as indicated in Note 2 and compare the reading to the low limit.

Does the CE multimeter read more than the low limit for every level?
Y N

014

DANGER

While the machine power is on, connect the CE multimeter across the AC cable at TB7 (05-630) (see Note 1).

Is any line voltage present at TB7?
Y N

6 5 5
F G H

Note 2:
Feature power supply C
J13 power pins
(05-210 for pin locations)

Level	Pins	Low limit
+5 V	2,3,6,9	4.5 Vdc
+8.5 V	5	7.6 Vdc
+12 V	8	10.8 Vdc
Return	1,4,7,10	Vdc
-5 V	12	-4.5 Vdc
-12 V	11	-10.8 Vdc

Note 1: The CE multimeter may read as high as 235 Vac.

XFMR TB	Line voltage	
	50 HZ	60 HZ
1	Common	Common
2	200 Vac	200 Vac
3	220 Vac	208 Vac
4	235 Vac	230 Vac
5	Ground	Ground

015
-Set Power to 0 (operator panel).
Remove the AC cable at TB7. Connect the CE
multimeter across the AC cable (see Note 1).

DANGER

High voltage will be present at the AC cable when
the machine power is on.
-Set Power to 1 (operator panel).
Is any line voltage present at the cable?
Y N

   016
   -Set Power to 0 (operator panel).
   The AC cable is bad.
   Reconnect the AC cable to TB7.
   Reconnect J11.
   Reconnect J12.
   Reconnect J13.
   Remove jumper.

017
The feature power supply C is bad.
Reconnect the AC cable to TB7.
Reconnect J11.
Reconnect J12.
Reconnect J13.
Remove jumper.

018
-Set Power to 0 (operator panel).
The feature power supply C is bad.
Reconnect J11.
Reconnect J12.
Reconnect J13.
Remove jumper.

019

-Set Power to 0 (operator panel).
Reconnect J13.
Remove the minibus connectors from the A-B3 board.
-Set Power to 1 (operator panel).
Connect the CE multimeter from the pins on cable J12
as indicated in Note 3 to J12-8(ground) and compare
the readings to the low limit.

**Does the CE multimeter read more than the low
limit for each level?**
Y N

> **020**
> The cable from J13 to J12 is bad.
> Reconnect J11.
> Reconnect J12.
> Reconnect all the minibus connectors to the A-B3
> board.
> Remove jumper.

021

-Set Power to 0 (operator panel).
Reconnect the minibus connectors to the A-B3 board.
-Set Power to 1 (operator panel).
Connect the CE multimeter from the pins on cable J12
as indicated in Note 3 to J12-8(ground) and compare
the readings to the low limit.

**Does the CE multimeter read more than the low
limit for each level?**
Y N

8 7
J K

Note 3:
Feature power supply C
  J12 cable sense pins
(05-210 for pin locations)

Level	Pins	Low limit
+5 V	1	4.5 Vdc
+8.5 V	5	7.6 Vdc
+12 V	6	10.8 Vdc
ground	8	ground
-5 V	3	-4.5 Vdc
-12 V	7	-10.8 Vdc

022
-Set Power to 0 (operator panel).
Reconnect J11 (05-240).
Reconnect J12 (05-240).
Remove jumper.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

023
Probe from C-A1B2S04(+) to ground(-) (see Note 4).
-Set the Latch switch to the Down position (General logic probe II).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).

Up   Light: On
Down Light: On

Are the lights correct?
Y N

024
Remove J11.
Connect the CE multimeter from J11-B05(+) to J11-D02(-) on the cable (05-210).

Does the CE multimeter read more than +4 Vdc?
Y N

025
Connect the CE multimeter from C-A1B2S04(+) to C-A1B2U08(-).
Does the CE multimeter read more than +4 Vdc?
Y N

026
Bad protect card C-A1B2.

Note 4: Connect the power leads to any D03(+) and D08(-) on the C-A1 power logic board for probe power.

When this problem is fixed, you can determine the OC error.

8 8 8 8
L M N P

027

The YA134AF4 net has an open circuit (see FSL Vol D).

028

The feature power supply C is bad.

029

Bad protect card C-A1B2.

030

A loose cable was the only problem.

031

-Set Power to 0 (operator panel).
Reconnect J11 (05-240).
Reconnect J12 (05-240).
Remove jumper.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    032

    The feature power supply C is bad.

033

A loose cable was the only problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

001
(Entry Point A)
Jumper C-A1A4B02 to C-A1A4B04.
Remove J11 (05-240).
Remove J13 (05-240).
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP locates the failing FRU that causes the OV error.

ENTRY CONDITIONS:
The error data was recorded. Control supply status indicator lights on lamp test. An OV error is indicated on feature power supply C.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Does the machine power on?
Y N

  002
  Remove C-A1B2.
  Connect the CE multimeter from C-A1A4B03(+) to C-A1A4D08(-).

  Does the CE multimeter read more than 1 ohm?
  Y N

    003
    The YA132BA1 net has a short circuit.
    Remove jumper.

  004
  Bad protect card C-A1B2.
  Remove jumper.

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2
A

005
With machine power on, connect the CE multimeter from J13-8(+) to J13-10(-) on the supply PC board (05-210).

Does the CE multimeter read more than 13.5 Vdc?
Y N

  006
  Remove all the minibus connectors from the A-B3 board.
  Remove J12.
  Reconnect J13.
  While the machine power is on, connect the CE multimeter from J12-6(+) to J12-8(-) on the cable (05-210).

  Does the CE multimeter read between 10.8 Vdc and 13.5 Vdc?
  Y N

    007
    The cable to J12 is bad.
    Remove jumper.

  008
  The feature power supply C is bad.
  Remove jumper.

009
The feature power supply C is bad.
Remove jumper.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	006	0585	A

001
(Entry Point A)
Disconnect J13 (05-240).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
-Press and hold Dply Pwr Chk (CE panel).

MAP DESCRIPTION:
This MAP determines the cause of an OC power check.

ENTRY CONDITIONS:
An OC error is indicated of feature power supply C with the load disconnected.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Is byte 0 data X'EB'?
Y N

002
Jumper C-A1A4B02 to C-A1A4B04.
Disconnect J11.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

003
Remove card C-A1B2.
Connect the CE multimeter from C-A1A4B05(+) to C-A1A4D08(-).

Does the CE multimeter read more than 1 ohm?
Y N

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```
2 2 2 2
A B C D
```

FEATURE C OC

5340 SYSTEMS UNIT

MAP 0557-2

004

The YA134AF4 net has a short circuit.
Reconnect J11.
Reconnect J13.
Remove jumper.

005

Bad protect card C-A1B2.
Reconnect J11.
Reconnect J13.
Remove jumper.

006

-Set Power to 0 (operator panel).
Reconnect J13.
Remove jumper.
Go To Map 0585, Entry Point A.

007

The cable from J13 has a short circuit.
Reconnect J13.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0500	B
2	005	0530	A

001
(Entry Point A)
Remove the F204 fuse from the AC box (05-230).

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the AC box, the controller, or the supply.

ENTRY CONDITIONS:
A UV error is indicated on feature power supply D.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Is the F204 fuse good?
Y N

   002
   Install a good fuse in F204.
   -Set Power to 0 (operator panel).
   -Set Power to 1 (operator panel).
   Does the machine power on?
   Y N

      003
      Remove the F204 fuse.
      Is the F204 fuse good?
      Y N

```
3 2 2 2
A B C D
```

B C D
1 1 1

FEATURE D UV

5340 SYSTEMS UNIT

PAGE 2 OF 8

MAP 0558-2

004

-Set CB1 to 0 (AC distribution box).
Disconnect the AC cable from TB8 (05-640) at feature power supply D (05-220) (see Note 1).
Install a good fuse in F204 (AC box).
-Set CB1 to 1 (AC distribution box).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Remove the F204 fuse.

Is the F204 fuse good?
Y N

   005
   Install a good fuse in F204.

   Go To Map 0530, Entry Point A.

006
Reinstall the F204 fuse.
Feature power supply D is bad.
Reconnect AC to TB8.

007
Reinstall fuse F204.
The blown fuse was caused by another problem.
Go To Map 0500, Entry Point B.

008
The blown fuse was the only problem.

Note 1: The CE multimeter may read as high as 235 Vac.

XFMR TB	Line voltage	
	50 HZ	60 HZ
1	Common	Common
2	200 Vac	200 Vac
3	220 Vac	208 Vac
4	235 Vac	230 Vac
5	Ground	Ground

When the supply is isolated, check for bad fuse..

A
1

009
Reinstall the F204 fuse.
Jumper C-A1A4B09 to C-A1A4B11.
Disconnect J23 (05-240).
Disconnect J24 (05-240).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   010
   -Set CB1 to 0 (AC distribution box).
   Remove C-A1B2.
   Connect the CE multimeter from C-A1A4B13(+) to
   C-A1A4D08(-).
   **Does the CE multimeter read more than 1 k
   ohms?**
   Y N

      011
      The YA134BB4 net has a short circuit to ground.
      Reconnect J23.
      Reconnect J24.
      Reinstall C-A1B2.
      Remove jumper.

   012
   Bad protect card C-A1B2.
   Reconnect J23.
   Reconnect J24.
   Remove jumper.

013
-Set Power to 0 (operator panel).
Reconnect J23.
Remove the 3 minibus connectors from the left side of
the A-A1 board.
-Set Power to 1 (operator panel).
Connect the CE multimeter from J24-9 (+) to J24-10(-)
on the cable (05-210).
Does the CE multimeter read more than 4.5 Vdc?
Y N

6 4
E F

014
-Set Power to 0 (operator panel).
Disconnect J23.

Connect the CE multimeter across the AC cable at TB8
(05-640) (see Note 1).

DANGER

-Set Power to 1 (operator panel).

Is any line voltage present at TB8?
Y N

> **015**
> -Set Power to 0 (operator panel).
> Remove the AC cable at TB8. Connect the CE
> multimeter across the AC cable (see Note 1).
>
> **DANGER**
>
> High voltage is present at the AC cable when the
> machine power is on.
> -Set Power to 1 (operator panel).
> **Is any line voltage present at the cable?**
> **Y N**
>
> > **016**
> > -Set Power to 0 (operator panel).
> > The AC cable is bad.
> > Reconnect the AC cable to TB8.
> > Reconnect J23.
> > Reconnect J24.
> > Reconnect the minibus connectors.
> > Remove jumper.

5 5
G H

Note 1: The CE multimeter may read as high as 235
Vac.

```
.--------------------.
|    | Line voltage  |
|XFMR|---------------|
| TB | 50 HZ | 60 HZ |
|----+-------+-------|
| 1  |Common |Common |
| 2  |200 Vac|200 Vac|
| 3  |220 Vac|208 Vac|
| 4  |235 Vac|230 Vac|
| 5  |Ground |Ground |
--------------------
```

017
The feature power supply D is bad.
Reconnect the AC cable to TB8.
Reconnect J24.
Reconnect the minibus connectors.
Remove jumper.

018
-Set Power to 0 (operator panel).
Connect the CE multimeter from J23-1, J23-2, J23-3
(05-210), and J24-9(+) to PDTB2-7 and PDTB2-8(-)
(05-360).
**Does the CE multimeter read less than 1 ohm for
each connection?**
Y N

> **019**
> The cable from J23 to J24 is bad.
> Reconnect the minibus connectors to the A-A1
> board.
> Remove jumper.

020
-Set Power to 0 (operator panel).
Connect the CE multimeter from J23-4, J23-5, J23-6
(05-210), and J24-10(+) to DC ground(-) (05-360).
**Does the CE multimeter read less than 1 ohm for
each connection?**
Y N

> **021**
> The cable from J23 to J24 is bad.
> Reconnect the minibus connectors to the A-A1
> board.
> Remove jumper.

022
-Set Power to 0 (operator panel).
Connect the CE multimeter from PDTB2-7(+) to DC
ground(-) (05-360).
Does the CE multimeter read more than 10 k ohms?
Y N

6 6
J K

E J K
3 5 5

FEATURE D UV

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MAP 0558-6

023

The cable from J23 to J24 is bad.
Reconnect the minibus connectors to the A-A1 board.
Remove jumper.

024

The feature power supply D is bad.
Reconnect J23.
Reconnect J24.
Reconnect the minibus connectors.
Remove jumper.

025

-Set Power to 0 (operator panel).
Reconnect the minibus connectors to the A-A1 board.
-Set Power to 1 (operator panel).
Connect the CE multimeter from J24-9(+) to J24-10(-) on the cable.
Does the CE multimeter read more than 4.5 Vdc?
Y N

  026
  -Set Power to 0 (operator panel).
  Reconnect J24 (05-240).
  Remove jumper.
  -Set Power to 1 (operator panel).
  Does the machine power on?
  Y N

    027
    Probe from C-A1B2S08(+) to ground(-) (see Note 4).
    -Set the Latch switch to the Down position (General logic probe II).
    -Set Power to 0 (operator panel).
    -Set Power to 1 (operator panel).

    Up   Light: On
    Down Light: On

    (Step 027 continues)

Note 4: Connect the power leads to any D03(+) and D08(-) on the C-A1 power logic board for probe power.

7 7
L M

(Step 027 continued)
Are the lights correct?
Y N

028
Remove J24.
Connect the CE multimeter from J24-7 on the
cable (05-210) to ground (-).

**Does the CE multimeter read more than +4
Vdc?**
Y N

029
Connect the CE multimeter from
C-A1B2S04(+) to ground(-).
**Does the CE multimeter read more than
+4 Vdc?**
Y N

030
Bad protect card C-A1B2.

031
Check for an open or short circuit in net
YA142AA05 (see FSL Vol D).

032
The feature power supply D is bad.

033
Bad protect card C-A1B2.

034
A loose cable was the only problem.

035
-Set Power to 0 (operator panel).
Reconnect J24 (05-240).
Remove jumper.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

8 8
N P

When this problem is fixed, you may determine the OC
error.

036

The feature power supply D is bad.

037

A loose cable was the only problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

001
(Entry Point A)
Jumper C-A1A4B09 to C-A1A4B11.
Remove J23 (05-240).
Remove J24 (05-240).
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP locates the failing FRU that causes the OV error.

ENTRY CONDITIONS:
The error data was recorded. Control Supply Status indicator lights on Lamp test. An OV error is indicated on feature power supply D.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Does the machine power on?
Y N

> **002**
> Remove C-A1B2.
> Connect the CE multimeter from C-A1A4B10(+) to C-A1A4D08(-).
> **Does the CE multimeter read more than 1 k ohms?**
> Y N
>
> > **003**
> > The YA142AA06 net has a short circuit.
> > Reconnect J23 and J24.
> > Remove jumper.

2 2
A B

A B
1 1

004
Bad protect card C-A1B2.
Remove jumper.
Reconnect J23 and J24.

005
-Set Power to 0 (operator panel).
Reconnect J23.
Remove the 3 minibus connectors from the left side of
the A-A1 board.
Connect the CE multimeter from J24-9(+) to J24-10(-)
on the cable (05-210).
-Set Power to 1 (operator panel).
Does the CE multimeter read more than 6.2 Vdc?
Y N

  006
  -Set Power to 0 (operator panel).
  Reconnect the 3 minibus connectors to the left side
  of the A-A1 board.
  -Set Power to 1 (operator panel).
  Connect the CE multimeter from J24-9(+) to
  J24-10(-) on the cable (05-210).
  **Does the CE multimeter read between 4.5 Vdc
  and 5.5 Vdc?**
  Y N

    007
    -Set Power to 0 (operator panel).
    Connect the CE multimeter from J23-4, J23-5,
    J23-6 (05-210), and J24-10(+) to DC ground(-)
    (05-360).
    **Does the CE multimeter read less than 1 ohm
    for each connection?**
    Y N

      008
      The cable from J23 to J24 is bad.
      Remove jumper.

    009
    The feature power supply D is bad.
    Remove jumper.

010
-Set Power to 0 (operator panel).
Reconnect J24.
Remove jumper.
-Set Power to 1 (operator panel).
Does the machine power up?
Y N

  011
  The feature power supply D is bad.

012
A loose cable was the only problem.

013
The feature power supply D is bad.
Remove jumper.
Reconnect the minibus connectors.

C D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0586	A

001
(Entry Point A)
Jumper C-A1A4B09 to C-A1A4B11.
Disconnect J23 (05-240).
Disconnect J24 (05-240).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP determines the cause of an OC power check.

ENTRY CONDITIONS:
An OC error is indicated of feature power supply D with the load disconnected.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Does the machine power on?
Y N

  002
  Remove card C-A1B2.
  Connect the CE multimeter from C-A1A4B12(+) to C-A1A4D08(-).

  Does the CE multimeter read more than 1 ohm?
  Y N

    003
    The YA142AA05 net has a short circuit.
    Reconnect J23.
    Reconnect J24.
    Remove jumper.

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2 2
A B

004

Bad protect card C-A1B2.

Reconnect J23.

Reconnect J24.

Remove jumper.

005

-Set Power to 0 (operator panel).

Connect the CE multimeter from PDTB2-7 to ground (05-360).

Does the CE multimeter read more than 1 k ohm?

Y N

006

The cable from J23 to J24 is bad.

Remove jumper.

007

Reconnect J23.

Remove jumper.

Go To Map 0586, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	A	1	001

001
(Entry Point A)
Remove A-A1M4, A-A1N4, A-A1P4 and A-A1Q4.
-Set Power to 1 (operator panel).

Does the machine power on?
Y N
│
│ **002**
│ Remove A-A1R4 and A-A1S4.
│ -Set Power to 1 (operator panel).
│ **Does the machine power on?**
│ Y N
│ │
│ │ **003**
│ │ Remove A-A1T4.
│ │ -Set Power to 1 (operator panel).
│ │ **Does the machine power on?**
│ │ Y N
│ │ │ │
│ │ │ │
│ │ │ │
│ │ │ │
│ │ │ │
2 2 2 2
A B C D

MAP DESCRIPTION:
This MAP isolates a short circuit in the load.

ENTRY CONDITIONS:
The cables are connected. The problem is isolated to 8 storage cards.

START CONDITIONS:
Before starting this MAP, perform the operations in MAP 0519.

LOGIC CARDS TESTED:
A-A1M4, A-A1N4, A-A1P4, A-A1Q4, A-A1R4, A-A1S4, A-A1T4, A-A1U4

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004
Remove A-A1U4.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

　　005
　　Bad board.
　　A-A1.

006
Bad card
A-A1U4.

007
Bad card
A-A1T4.

008
Reinstall card A-A1S4.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

　　009
　　Bad card
　　A-A1S4.

010
Bad card
A-A1R4.

011
Reinstall cards A-A1P4 and A-A1Q4.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

　　012
　　Remove A-A1P4.
　　-Set Power to 1 (operator panel).
　　Does the machine power on?
　　Y N

E F G

013
Bad card
A-A1Q4.

014
Bad card
A-A1P4.

015
Reinstall card A-A1N4.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

　　016
　　Bad card
　　A-A1N4.

017
Bad card
A-A1M4.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0516	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	007	0580	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP locates a failing FRU for feature power supply B (+5V level UV) or goes to the Protection MAP if no fault exists.

ENTRY CONDITIONS:
Fault data was recorded.
A UV fault was indicated on the +5V level.
Control supply status indicator lights with lamp test.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

Note 1: This jumper permits relay K1 to be controlled by the IPO switch.

Note 2: Momentarily is from 3 to 5 seconds or just long enough to get a reading.

-Set Power to 0 (operator panel).
-Set the IPO switch to 0 (left side) (05-230).
Jumper from C-A1B2G13 to C-A1B2J08 (see Note 1).
Connect the CE multimeter from PDTB1-1 (+) to the ground plate (-) (05-360) on the distribution assembly (05-220).
-Set the IPO switch to 1 (left side) momentarily while observing the CE multimeter (see Note 2).
Does the CE multimeter read between +4.6 and +5.6 Vdc? (if the line is open a -5 Vdc appears.)
Y N

3 2
A B

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002

-Set the IPO switch to 0 (left side).
Disconnect J7 (05-240) from the distribution assembly.
Connect the CE multimeter between J7-2 (+) and J7-3
(-) of the cable from feature power supply B (05-210).
-Set the IPO switch to 1 (left side).
**Does the CE multimeter read between 4.65 and 5.8
Vdc?**
Y N

   003

   Feature power supply B is bad.
   -Set the IPO switch to 0 (left side).
   Remove   the   jumper   from   C-A1B2G13   to
   C-A1B2J08.
   -Set the IPO switch to 1 (left side).

004

-Set the IPO switch to 0 (left side).
Remove the plastic insulators from the AC capacitor C4
(05-600) (see Note 4).

DANGER

Voltages up to 660 Vac are present on the AC capacitor
when power is at the ferroresonant transformer. Verify
that power was removed and short circuit the capacitor
terminals together before touching the terminals.

Disconnect the leads from the AC capacitor.
Using the CE multimeter on the 'R X 1K' scale, check
the capacitor by placing probes across the terminals.
Is the AC capacitor C4 good (see Note 3)?
Y N

   005

   Feature power supply B is bad.
   Remove   the   jumper   from   C-A1B2G13   to
   C-A1B2J08.
   -Set the IPO switch to 1 (left side).

3
C

Note 3: If the capacitor is good, the CE multimeter
should deflect to or near 0 ohms and then return to a
high resistance.

Note 4: If feature power supply A is also installed, do
one of the following to permit access to C4:
Loosen the mounting screws on feature power supply A
and slide it toward the center of the machine if space
permits.
---or---
Loosen the mounting screws on feature power supply B
and slide it half way out of the machine.

006

J7 was loose

---or---

The distribution PC board assembly is bad.

-Set the IPO switch to 0 (left side).

Remove the jumper from C-A1B2G13 to C-A1B2J08.

-Set the IPO switch to 1 (left side).

007

-Set the IPO switch to 0 (left side).

With +5V level UV on feature power supply B,

Go To Map 0580, Entry Point A.
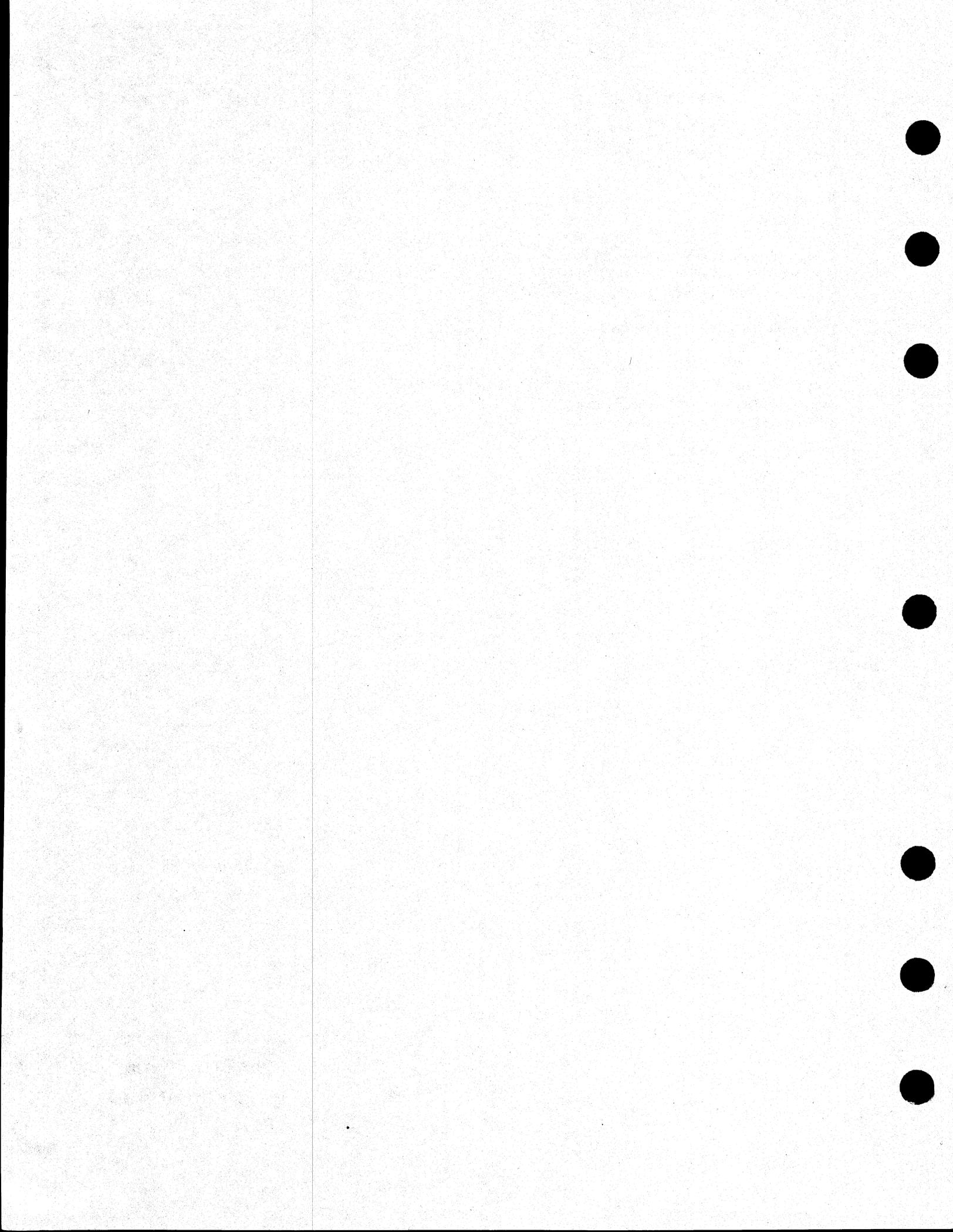
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0501	A	1	001
0502	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	012	0585	A
4	014	0586	A
4	016	0594	A

001
(Entry Point A)
Remove protect card C-A1B2.
Remove cable C-A1A4T and C-A1A4B, if present.
Remove cable C-A1Z1, if present.
-Set CB1 to 1 (AC distribution box) at AC box (05-230).

MAP DESCRIPTION:
This MAP determines the cause of the control supply status indicator not working when lamp test is pressed.

ENTRY CONDITIONS:
The machine does not power up.
All control supply fuses are good.
CB is set to 0.
The power switch is set to 0.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2 and C-A1C2

Is the control supply status indicator on at the power logic board C-A1 (05-220)?
Y N

3 2
A B

05JAN81   PN 4237508

EC 835083   PEC 835000

MAP 0571-1

002

-Set CB1 to 0 (AC distribution box).

Remove base sense card C-A1C2.

Remove feature sense or regulator card C-A1C4, if present.

Remove feature sense card C-A1C5, if present.

-Set CB1 to 1 (AC distribution box).

Connect the CE multimeter from the C-A1 board pin to ground on board C-A1 as indicated in Note 1 and compare the reading to the range as indicated in Note 2 for each level.

Note 1:

Power logic board C-A1
voltage pins

Level	Pins	Ground
+5V	C2D03	C2D08
+24V	C2D11	C2D08
-24V	C2D06	C2D08
-5V	C2J06	C2D08

Note 2:

Control supply table
See FSL VOL D

LEV	Low Range	Net
+5Vdc	+4.6Vdc	YA020JJ09
+24Vdc	+22.0Vdc	YA020JJ04
-24Vdc	-22.0Vdc	YA020JJ12
-5Vdc	-4.6Vdc	YA020JJ08

Does every level read above the low range?

Y N

003

Isolate the failing FRU (see Note 2 for net).

3
C

004
-Set CB1 to 0 (AC distribution box).
Reinstall feature sense or regulator card C-A1C4, if present.
Reinstall feature sense card C-A1C5, if present.
Reinstall protect card C-A1B2.
-Set CB1 to 1 (AC distribution box).
Connect the CE multimeter from C-A1B2G10 (+) to ground (-).
-Press and hold Lamp Test (CE panel).
Does the CE multimeter read from 4.6 to 5.2 Vdc?
Y N

  005
  -Set CB1 to 0 (AC distribution box).
  Reinstall base sense card C-A1C2.
  The YA303BC3 net has an open circuit or short circuit to ground (see FSL, Vol D).
  -Set CB1 to 1 (AC distribution box).

006
Bad base sense card C-A1C2.

007
-Set CB1 to 0 (AC distribution box).
Reinstall protect card C-A1B2.
-Set CB1 to 1 (AC distribution box).
Connect the CE multimeter from C-A1B2D11 (+) to C-A1B2D08(-).
-Press and hold Lamp Test (CE panel).
Does the CE multimeter read more than +4 Vdc?
Y N

  008
  -Set CB1 to 0 (AC distribution box).
  Remove the protect card C-A1B2.
  Use the CE multimeter on the 'R X 1' scale.
  Connect the CE multimeter from C-A1B2D11 (+) to C-A1B2D08(-).
  -Press and hold Lamp Test (CE panel).
  Does the CE multimeter read more than 1 ohm?
  Y N

D E F

009
Bad lamp test switch
---or---
The CE140AA72 net has a short circuit to ground (see FSL, Vol D).
Isolate the bad FRU.
-Set CB1 to 1 (AC distribution box).

010
Bad protect card C-A1B2.
-Set CB1 to 1 (AC distribution box).

011

CAUTION

-Set CB1 to 0 (AC distribution box)
If C-A1A4T is connected incorrectly with control power on, the logic of feature power supply C will be destroyed.

Reconnect cable C-A1A4T, if present.
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from C-A1B2D11 (+) to C-A1B2D08(-).
-Press and hold Lamp Test (CE panel).
Does the CE multimeter read more than +4 Vdc?
Y N

  012
  Go To Map 0585, Entry Point A.

013
-Set CB1 to 0 (AC distribution box).
Reconnect cable C-A1A4B, if present.
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from C-A1B2D11 (+) to C-A1B2D08(-).
-Press and hold Lamp Test (CE panel).
Does the CE multimeter read more than +4 Vdc?
Y N

G H
3 3

014
Go To Map 0586, Entry Point A.

015
-Set CB1 to 0 (AC distribution box).
Reconnect cable C-A1Z1, if present.
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from C-A1B2D11 (+) to
C-A1B2D08(-).
-Press and hold Lamp Test (CE panel).
Does the CE multimeter read more than +4 Vdc?
Y N

   016
   Go To Map 0594, Entry Point A.

017
Bad protect card C-A1B2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0501	A	1	001
0502	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
6	030	0500	A
3	005	0533	A
6	024	0585	A
6	026	0586	A
6	028	0594	A

001

(Entry Point A)

Remove J21 (05-240) from the control supply (see Note 1).

Read Note 2.

-Set CB1 to 1 (AC distribution box) at AC box (05-230).
Connect the CE multimeter from the J21 voltage pin to the J21 ground pin on the control supply PC board (05-210) as indicated in Note 3 and compare the reading to the range in Note 4 for each level (05-320).

MAP DESCRIPTION:
This MAP isolates the cause of a bad fuse.

ENTRY CONDITIONS:
-CB1 is Off.
Fuse is bad for the second time.

START CONDITIONS:
Before starting this MAP, perform the operations in MAP 0502.

LOGIC CARDS TESTED:
C-A1B2, C-A1C2, C-A1C4 and C-A1C5

Note 1: Removal of cable J21 or cable C-A1A3 isolates the control supply ground from DC ground or AC frame ground.

Note 2: Removals and connections may be done with CB1 set to 1 (ON) when done in order.

Does every level read above the low range?
Y N

002
The control supply is bad.

2
A

003

Remove the cable from C-A1A3 (see Note 1).
Connect J21.
Connect the CE multimeter from the voltage pin to the
ground pin on cable C-A1A3 as indicated in Note 5 and
compare the reading to the range as indicated in Note 4
for each level.

Note 3:
Control supply voltage pins
(05-210 for pin locations)

Level	Pins	Ground
+5V	J21-10	J21-6
+24V	J21-4	J21-6
-24V	J21-12	J21-6
-5V	J21-8	J21-6

Note 4:
Control supply table
See FSL VOL D

LEV	Low Range	Net
+5Vdc	+4.6Vdc	YA020JJ09
+24Vdc	+22.0Vdc	YA020JJ04
-24Vdc	-22.0Vdc	YA020JJ12
-5Vdc	-4.6Vdc	YA020JJ08

Note 5:
Control supply voltage cable
(C-A1A3)

Level	Pins	Ground
+5V	D02	D08
+24V	B05	D08
-24V	B07	D08
-5V	D06	D08

Does every level read above the low range?
Y N

3 3
B C

004

-Set CB1 to 0 (AC distribution box).
Install a new fuse for any fuse that is bad on the control supply.
Did the +24V level read good in the last step?
Y N

005
Go To Map 0533, Entry Point A.

006

Cable C-A1A3 is bad.
-Set CB1 to 1 (AC distribution box).
-Set the IPO switch to 1 (left side).

007

Remove card C-A1C2 and if present C4, C5.
Remove card C-A1B2.
Remove cable C-A1A2.
Remove cable C-A1A4T and C-A1A4B, if present.
Remove cable C-A1Z1, if present.
Connect cable C-A1A3.
Connect the CE multimeter from the voltage pin to the ground pin on board C-A1 as indicated in Note 6 and compare the reading to the range as indicated in Note 4 for each level.

Note 6:
Power logic board C-A1
voltage pins

Level	Pins	Ground
+5V	C2D03	C2D08
+24V	C2D11	C2D08
-24V	C2D06	C2D08
-5V	C2J06	C2D08

Note 4:
Control supply table
See FSL VOL D

LEV	Low Range	Net
+5Vdc	+4.6Vdc	YA020JJ09
+24Vdc	+22.0Vdc	YA020JJ04
-24Vdc	-22.0Vdc	YA020JJ12
-5Vdc	-4.6Vdc	YA020JJ08

Does every level read above the low range?
Y N

4 4
D E

008
Power logic board C-A1 is bad.

009
Connect cable C-A1A2.
Connect the CE multimeter from C-A1A2D03 (+) to
C-A1A2D08 (-).
Does the CE multimeter read more than 4.6Vdc?
Y N

> **010**
> The YA320AA01 net has an open circuit or a short
> circuit to ground (see FSL, Vol D).

011
With the CE multimeter still connected from
C-A1A2D03 (+) to C-A1A2D08 (-),
-Press and hold Dply Pwr Chk (CE panel).
Does the CE multimeter read more than 4.6Vdc?
Y N

> **012**
> The YA320AA01 net has a short circuit to ground
> (see FSL, Vol D).

013
-Set CB1 to 0 (AC distribution box) (05-230).
Install protect card C-A1B2.
-Set CB1 to 1 (AC distribution box).
Connect the CE multimeter from C-A1B2D03 (+) to
C-A1B2D08 (-).
Does the CE multimeter read more than 4.6Vdc?
Y N

> **014**
> Bad protect card C-A1B2.

5
F

015
-Set CB1 to 0 (AC distribution box).
Install base sense card C-A1C2.
-Set CB1 to 1 (AC distribution box).
-Press and hold Lamp Test (CE panel).
Is the control supply status indicator on (05-370) at the power logic board (05-220)?
Y N

> **016**
> -Set CB1 to 0 (AC distribution box).
> Install a new fuse for any fuse that is bad on the control supply.
> -Set CB1 to 1 (AC distribution box).
> Remove protect card C-A1B2.
> **Is the control supply status indicator on?**
> Y N
>
> > **017**
> > Bad base sense card C-A1C2.
> > Install a new fuse for any fuse that is bad on the control supply.
> > Reinstall all cards removed earlier from power logic board C-A1.
>
> **018**
> Bad protect card C-A1B2.
> Reinstall all cards removed earlier from power logic board C-A1.

019
-Set CB1 to 0 (AC distribution box)
Install card C-A1C4, if present.
-Set CB1 to 1 (AC distribution box)
-Press and hold Lamp Test (CE panel).
Is the control supply status indicator on?
Y N

> **020**
> Bad feature card C-A1C4.

The control supply status indicator checks all four voltage levels.

021
-Set CB1 to 0 (AC distribution box)
Install card C-A1C5, if present.
-Set CB1 to 1 (AC distribution box)
-Press and hold Lamp Test (CE panel).
Is the control supply status indicator on?
Y N

> **022**
> Bad feature sense card C-A1C5.

023

CAUTION

-Set CB1 to 0 (AC distribution box)
Note: If C-A1A4T is connected incorrectly with control
power on, the logic of feature power supply C will be
destroyed.
Reconnect cable C-A1A4T, if present.
-Set CB1 to 1 (AC distribution box)
-Press and hold Lamp Test (CE panel).

Is the control supply status indicator on?
Y N

> **024**
> -Set CB1 to 0 (AC distribution box)
> Install a new fuse for any fuse that is bad on the
> control supply.
> **Go To Map 0585, Entry Point A.**

025
-Set CB1 to 0 (AC distribution box).
Reconnect cable C-A1A4B, if present.
-Set CB1 to 1 (AC distribution box).
-Press and hold Lamp Test (CE panel).
Is the control supply status indicator on?
Y N

H J

026
-Set CB1 to 0 (AC distribution box).
Install a new fuse for any fuse that is bad on the
control supply.
Go To Map 0586, Entry Point A.

027
-Set CB1 to 0 (AC distribution box).
Reconnect cable C-A1Z1, if present.
-Set CB1 to 1 (AC distribution box).
-Press and hold Lamp Test (CE panel).
Is the control supply status indicator on?
Y N

> **028**
> -Set CB1 to 0 (AC distribution box).
> Install a new fuse for any fuse that is bad on the
> control supply.
> **Go To Map 0594, Entry Point A.**

029
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

> **030**
> **Go To Map 0500, Entry Point A.**

031
The preceding problem was a loose cable or card.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0500	A	1	001
0577	B	4	019

001
(Entry Point A)
Probe C-A1B2B03 (+) (see Note 1).

Up   Light: On
Down Light: On

MAP DESCRIPTION:
This MAP checks the power on reset to card C-A1B2,
then checks for a connection to a working switch.

ENTRY CONDITIONS:
Machine off.
Lamp test works.
No check lights.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2 and C-A1C2

Are the lights correct?
Y N

    002
    Probe C-A1B2B02 (+) (see Note 1).

    Up   Light: On
    Down Light: On

Note 1: Connect to any D03 (+) and D08 (-) on board
C-A1 for probe power.

    Are the lights correct?
    Y N

        003
        Bad protect card C-A1B2.

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05JAN81   PN 4237513

EC 835083   PEC 835000

MAP 0576-1

2 2
A B

004
The YA302EG3 net has an open circuit (see FSL Vol D).
Bad power logic board C-A1.

005
Probe C-A1B2J06 (+) (see Note 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   006
   Remove base sense card C-A1C2.
   Connect the CE multimeter from C-A1C2B02 (+) to C-A1C2D08 (-).
   Does the CE multimeter read more than 4 Vdc?
   Y N

      007
      Connect the CE multimeter from C-A1B2J06 (+) to C-A1B2D08 (-).
      Does the CE multimeter read more than 4 Vdc?
      Y N

         008
         Connect the CE multimeter from C-A1B2D03 (+) to C-A1B2D08(-).
         Does the CE multimeter read more than 4.6 Vdc?
         Y N

            009
            Bad control supply.
            Install base sense card C-A1C2.

         010
         Bad protect card C-A1B2.
         Install base sense card C-A1C2.

Note 1: Connect to any D03 (+) and D08 (-) on board C-A1 for probe power.

4 3 3
C D E

011
The YA200AA1 net has an open circuit (see FSL Vol D).
Install base sense card C-A1C2.

012
Connect the CE multimeter from C-A1C2D04 (+) to C-A1C2D08 (-).
Does the CE multimeter read more than 4 Vdc?
Y N

> **013**
> The YA320AA03 net has an open circuit (see FSL Vol D).
> Install base sense card C-A1C2.

014
Connect the CE multimeter from C-A1C2G11 to C-A1C2G12.
Does the CE multimeter read more than 35 Vac?
Y N

> **015**
> Remove J21 (05-240) from the control supply.
> Install base sense card C-A1C2.
> Connect the CE multimeter from J21-1 to J21-3 on the control supply PC board (05-210, 05-320).
> **Does the CE multimeter read more than 35 Vac?**
> Y N
>
> > **016**
> > The control supply is bad.
>
> **017**
> The YA020JJ01 net has an open circuit (see FSL Vol D).
> ---or---
> YA020JJ03 net has an open circuit (see FSL Vol D).

018
Bad base sense card C-A1C2.

019
(Entry Point B)
-Set Power to 0 (operator panel).
Probe C-A1B2B13(+) (see Note 1).
Connect the probe ground to C-A1B2D10 (-).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **020**
> Probe C-A1B2D10 (+) (see Note 1).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
>> **021**
>> The OP110AA31 net has an open circuit (see FSL
>> Vol D).
>
> **022**
> Connect the CE multimeter from C-A1B2B13 (+) to
> C-A1B2D08 (-).
> **Does the CE multimeter read more than 1 Vdc?**
> Y N
>
>> **023**
>> The OP110AA32 net has a short circuit to ground
>> (see FSL Vol D).
>
> **024**
> Bad protect card C-A1B2.

Note 1:
Connect to any D03 (+) and D08 (-) on board C-A1 for
probe power.

5
F

025
-Set Power to 1 (operator panel).
Probe C-A1B2D10 (+) (see Note 1).
Connect the probe ground to C-A1B2B13 (-).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **026**
> Probe C-A1B2B13 (+) (see Note 1).
> Connect the probe ground to C-A1B2D08 (-).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **027**
> > The OP110AA32 net has an open circuit (see FSL
> > Vol D).
>
> **028**
> Connect the CE multimeter from C-A1B2D10 (+) to
> C-A1B2D08 (-).
> **Does the CE multimeter read more than 1 Vdc?**
> Y N
>
> > **029**
> > The OP110AA31 net has a short circuit to ground
> > (see FSL Vol D).
>
> **030**
> Bad protect card C-A1B2.

031
-Set Power to 0 (operator panel).
Bad protect card C-A1B2.

Note 1: Connect to any D03 (+) and D08 (-) on board
C-A1 for probe power.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

001
(Entry Point A)
Connect the CE multimeter from C-A1B2J13(+) to C-A1B2J08(-).

MAP DESCRIPTION:
This MAP verifies that the cables are connected or repairs the problem.

ENTRY CONDITIONS:
A cable check error is indicated for feature power supply.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Does the CE multimeter read more than 1 Vdc?
Y N

  002
  Bad protect card C-A1B2.

003
Connect the CE multimeter from C-A1A4B04(+) to C-A1A4D08(-).
Does the CE multimeter read more than 1 Vdc?
Y N

  004
  Is feature power supply C installed (05-220)?
  Y N

2 2 2
A B C

MAP 0581-1

A B C
1 1 1

CABLE CHECK FEATURE

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PAGE 2 OF 3

D E   MAP 0581-2

005

The jumper from C-A1A4B02 to C-A1A4B04 is installed incorrectly.

---or---

The jumper is missing.

---or---

Bad board.

C-A1.

006

The cable from C-A1A4T to J11 (05-240) is installed incorrectly.

---or---

Bad cable.

---or---

Bad board.

C-A1

---or---

Feature power supply C is bad.

007

Connect the CE multimeter from C-A1A4B11(+) to C-A1A4D08(-).

Does the CE multimeter read more than 1 Vdc?

Y N

008

Is feature power supply D installed (05-220)?

Y N

009

The jumper from C-A1A4B09 to C-A1A4B11 is installed incorrectly.

---or---

The jumper is missing.

---or---

Bad board.

C-A1.

010

The cable from C-A1A4B to J24 (05-240) is installed incorrectly.

---or---

Bad cable.

---or---

Bad board.

C-A1

---or---

Feature power supply D is bad.

011

Connect the CE multimeter from C-A1A5B04(+) to C-A1A5D08(-).

Does the CE multimeter read more than 1 Vdc?

Y N

012

The jumper from C-A1A5B02 to C-A1A5B04 is installed incorrectly.

---or---

The jumper is missing.

---or---

Bad board.

C-A1.

013

Connect the CE multimeter from C-A1A5B11(+) to C-A1A5D08(-).

Does the CE multimeter read more than 1 Vdc?

Y N

014

The jumper from C-A1A5B09 to C-A1A5B11 is installed incorrectly.

---or---

The jumper is missing.

---or---

Bad board.

C-A1.

015
Connect the CE multimeter from C-A1A6D04(+) to C-A1A5D08(-).
Does the CE multimeter read more than 1 Vdc?
Y N

    016
    Is feature power G installed (05-250)?
    Y N

        017
        The jumper from C-A1A6B04 to C-A1A6D04 is installed incorrectly.
        ---or---
        The jumper is missing.
        ---or---
        Bad board.
        C-A1.

    018
    The cable from C-A1Z1 to C-B1J7 and C-B1J5 (05-260) is installed incorrectly.
    ---or---
    Bad cable.
    ---or---
    Bad board.
    C-A1
    ---or---
    Bad board.
    C-B1
    ---or---
    The C-B1J3 cable (05-260) is installed incorrectly.
    ---or---
    Bad cable.
    C-B1J3
    ---or---
    Bad card
    C-B1J6

019
Bad board.
C-A1.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
1080	C	5	024
1090	C	5	024

001
(Entry Point A)
-Set Power to 0 (operator panel).
Connect the CE multimeter from C-A1B2G11 (+) to C-A1B2J08 (-).

MAP DESCRIPTION:
This MAP checks the drive circuit for the K2 relay.

ENTRY CONDITIONS:
For Entry Point A:
K1 is on.
K2 is not on.

For Entry Point C:
K1 is on.
K2 will not open.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2

Does the CE multimeter read more than 20 Vdc?
Y N

002
The YA301DC4 net has an open circuit (see FSL, Vol D)

003
Are any wires connected to E11 (05-220) on the DC distribution assembly?
Y N

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2   2
A   B

A B
1 1

004
-Set Power to 1 (operator panel).
Probe C-A1B2J10 (see note 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  005
  Check the CH009AG3 net (+Disk Brake Fault) for
  an open circuit (see FSL, Vol D).
  Does the net have an open circuit?
  Y N

    006
    Run MDI program for disk.

  007
  Isolate the failing FRU.

008
Go to Page 4, Step 021, Entry Point B.

009
Probe C-A1B2S09 (+) (see note 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  010
  Check the YA080BB02 net (+Brake Fault A) for an
  open circuit (see FSL Vol D).
  Does the net have an open circuit?
  Y N

    011
    Run MDI program for disk.

Note 1: Connect to any D03 (+) and D08 (-) on power
logic board C-A1 for probe power.

3 3
C D

012
Isolate the failing FRU.

013
Probe C-A1B2U09 (+).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  014
  Are two disks installed in the machine?
  Y N

    015
    Is the jumper installed from E12 to E13
    (05-220) on the DC distribution assembly?
    Y N

      016
      Install a jumper from E12 to E13.

    017
    The YA080BB03 net has an open circuit (see FSL
    Vol D).

  018
  Check the YA080BB02 net (+Brake Fault B) for an
  open circuit (see FSL Vol D).
  Does the net have an open circuit?
  Y N

    019
    Run MDI program for disk.

  020
  Isolate the failing FRU.

4
E

021
(Entry Point B)
Bad protect card C-A1B2 (see note 2).
Does the card replacement eliminate the problem?
Y N

022
Bad diode on K2 or bad K2 (05-300).
Bad protect card C-A1B2.

023
The protect card was the only problem.

Note 2: A bad diode on K2 may have caused the bad card.

024
(Entry Point C)
-Set Power to 0 (operator panel).
Remove E13 (05-360) from the base distribution assembly (05-220).
Connect the CE multimeter from E13(+) to ground(-) (05-360).
Does the CE multimeter read more than +4 Vdc?
Y N

> **025**
> Remove C-A1B2.
> Connect the CE multimeter from E13(+) to ground(-).
> **Does the CE multimeter read more than 1 ohm?**
> **Y N**
>
> > **026**
> > The YA080BB03 net has a short circuit to ground (see FSL Vol D).
>
> **027**
> Bad protect card C-A1B2.

028
Remove E12 (05-220).
Connect the CE multimeter from E12(+) to ground(-).
Does the CE multimeter read more than 4 Vdc?
Y N

> **029**
> Remove C-A1B2.
> Connect the CE multimeter from E12(+) to ground(-).
> **Does the CE multimeter read more than 1 ohm?**
> **Y N**
>
> > **030**
> > The YA080BB02 net has a short circuit to ground (see FSL Vol D).
>
> **031**
> Bad protect card C-A1B2.

F

032
Connect the CE multimeter from C-A1B2G11(+) to C-A1B2J08(-).
Does the CE multimeter read more than 20 Vdc?
Y N

> **033**
> Remove C-A1B2.
> Connect the CE multimeter from C-A1B2G11(+) to C-A1B2J08(-).
> **Does the CE multimeter read more than 20 Vdc?**
> **Y N**
>
> > **034**
> > Net YA301DC42 is short circuited to ground.
> > --------------------
> > The YA301DC42 net has a short circuit to ground (see FSL Vol D).
>
> **035**
> Bad protect card C-A1B2.

036
Bad K2 (05-300).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
0513	A	1	001
0557	A	1	001
0571	A	1	001
0572	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the cable to feature power supply C or in the supply.

ENTRY CONDITIONS:
An error is indicated when the J11 cable is connected to feature power supply C.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

(Step 001 continues)

(Step 001 continued)

-Set CB1 to 0 (AC distribution box).
Disconnect J11 (if not already disconnected) (05-240).
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from the pin on the J11 cable as indicated in Note 1 to J11-D02 (ground) (05-210) and compare the reading to the low limit as indicated in Note 2 for each level.

Note 1:
J11 cable voltage pin
(05-210 for pin locations)

Level	Pins	Ground
+5 V	D03	D02
+24 V	D04	D02
-24 V	D06	D02
-5 V	D05	D02

Note 2:
Control supply table
(See the FSL Vol D)

Level	Low	High	Net
+5 V	+4.6	+5.5	YA320AA04
+24 V	+22.0	+26.4	YA020JJ04
-24 V	-22.0	-26.4	YA020JJ12
-5 V	-4.6	-5.5	YA020JJ08

Does each level read above the low limit?
Y N

  002
  The net for the bad level has an open circuit or a
  short circuit or a short circuit to ground.

003
The feature power supply C is bad.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
0513	A	1	001
0560	A	1	001
0571	A	1	001
0572	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	0572	A

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the cable to feature power supply D or in the supply.

ENTRY CONDITIONS:
An error is indicated anytime the J24 cable is connected to feature power supply D.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

(Step 001 continues)

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(Step 001 continued)

-Set CB1 to 0 (AC distribution box).
Disconnect J24 (if not already disconnected) (05-240).
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from the pin on the J24 cable as indicated in Note 1 to J24-3 (ground) (05-210) and compare the reading to the range as indicated in Note 2 for each level.

Note 1:
 J24 cable voltage pin
 (05-210 for pin locations)

```
.----------------------.
|Level|  Pins  | Ground |
|-----+-------+--------|
| +5 V| J24-1  |  J24-3  |
| -5 V| J24-4  |  J24-3  |
----------------------
```

Note 2:
    Control Supply Table
    (See the FSL Vol D)

```
.--------------------------.
|Level| Low  |High |  Net    |
|-----+-----+-----+---------|
| +5 V| +4.6| +5.5|YA320AA04|
| -5 V| -4.6| -5.5|YA020JJ08|
--------------------------
```

Does each level read above the low range?
Y N

| |
| | **002**
| | The net for the bad level is open or has a short
| | circuit to ground.
| | **Go To Map 0572, Entry Point A.**
|
003
The feature power supply D is bad.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0591	A	1	001

001
(Entry Point A)
-Set Power to 0 (operator panel).
-Set CB1 to 0 (AC distribution box) (05-230).

Disconnect the feature power G AC cable from ACTB7-4 and ACTB7-7 (05-250).
Remove the F207 fuse (05-670).
Connect the CE multimeter between the cable removed from ACTB7-4 and the frame (see Note 1).

Does the CE multimeter read less than 100 ohms?
Y N

   002
   Connect the CE multimeter between the cable removed from ACTB7-4 and the cable removed from ACTB7-7.
   Does the CE multimeter read less than 100 ohms?
   Y N

MAP DESCRIPTION:
This MAP guides the CE to the failing FRU (inside or on the feature AC box) that caused a feature G UV indication on the CE panel.

ENTRY CONDITIONS:
The F207 fuse is bad. The feature power G ferroresonant transformer is disconnected.

START CONDITIONS:
Perform the operations in MAP 0591.

LOGIC CARDS TESTED:
None

Note 1: Use a CE multimeter to perform the measurements in this MAP. Perform all measurements on the R X 10 scale.

2 2 2
A B C

A B C
1 1 1

FEATURE AC BOX

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PAGE 2 OF 2

MAP 0590-2

003
Connect the CE multimeter from the cable removed from TB9-1 to the other cable removed from TB9 on the feature power G ferroresonant transformer.
Does the CE multimeter read less than 100 ohms?
Y N

> **004**
> The cable from ACTB7-4 to the feature power G ferroresonant transformer is bad (short circuit to ground).

005
The cable from the feature power G ferroresonant transformer to ACTB7 is bad.

006
The F207 fuse holder assembly is bad.

007
The F207 fuse holder assembly is bad (short circuit to ground).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	0500	B
2	005	0590	A

001
(Entry Point A)
Remove the F207 fuse from the feature AC box (05-670).

Is the F207 fuse good?
Y N

  002
  Install a good fuse in F207.
  -Set Power to 0 (operator panel).
  -Set Power to 1 (operator panel).
  Does the machine power on?
  Y N

    003
    Remove the F207 fuse.
    Is the F207 fuse good?
    Y N

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the feature AC box, the controller, or the supply.

ENTRY CONDITIONS:
A UV error is indicated on feature power G.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-B1J6

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```
3 2 2 2
A B C D
```

06OCT80   PN 8266259

EC 835034   PEC -------

MAP 0591-1

004

-Set CB1 to 0 (AC distribution box).
Disconnect AC from TB9 (05-680) at the feature power G ferroresonant transformer (05-250) (see Note 1).
Install a good fuse in F207 (feature AC box).
-Set CB1 to 1 (AC distribution box).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Remove the F207 fuse.

Is the F207 fuse good?
Y N

    005
    Install a good fuse in F207.

    Go To Map 0590, Entry Point A.

006
Reinstall the F207 fuse.
The feature power G ferro is bad.
Reconnect AC to TB9.

007
Reinstall the F207 fuse.
The blown fuse was caused by another problem.
Go To Map 0500, Entry Point B.

008
The blown fuse was the only problem.

Note 1: The CE multimeter may read as high as 235 Vac.

XFMR TB	Line voltage	
	50 HZ	60 HZ
1	Common	Common
2	200 Vac	200 Vac
3	220 Vac	208 Vac
4	235 Vac	230 Vac
5	Ground	Ground

When the supply is isolated, check for bad fuse..

009
Reinstall the F207 fuse.
Jumper C-A1A6B04 to C-A1A6D04.
Disconnect C-B1J3 and C-B1J4 (05-680).
Remove card C-B1J6.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

    010
    Connect the CE multimeter from C-A1B6A04(+) to
    C-A1B5D08(-).
    Does the CE multimeter read more than +4 Vdc?
    Y N

        011
        The YA184AC4 net has a short circuit (see FSL,
        Vol D).
        Reconnect C-B1J3.
        Reconnect C-B1J4.
        Reinstall C-B1J6.
        Remove jumper.

    012
    Bad protect card C-A1B2.
    Reconnect C-B1J3.
    Reconnect C-B1J4.
    Reinstall C-B1J6.
    Remove jumper.

4
E

013

While the machine power is on, connect the CE multimeter from the C-B1J3 or C-B1J4 pins to the return on the feature power G filter assembly board as indicated in Note 2 and compare the reading to the low limit.

Does the CE multimeter read more than the low limit for every level?

Y N

014

DANGER

While the machine power is on, connect the CE multimeter across the AC cable at TB9 (05-680) (see Note 1).

(Step 014 continues)

9
F

Note 2: Feature power G
filter assembly board
C-B1J3/J4 power pins
(05-210 for pin locations)

Level	Low Limit	Pin	Rtn
+24 V	21.6 Vdc	B06	B05
		D06	D05
+12 V	11.0 Vdc	B02	B12
			D12
		B03	B12
+5 V	4.5 Vdc	B04	D12
		D03	
-4 V	-3.6 Vdc	B13	B12
		D13	D12
-12 V	-11.0 Vdc	D02	B12
			D12

Note 1: The CE multimeter may read as high as 235 Vac.

XFMR TB	Line voltage	
	50 HZ	60 HZ
1	Common	Common
2	200 Vac	200 Vac
3	220 Vac	208 Vac
4	235 Vac	230 Vac
5	Ground	Ground

(Step 014 continued)
Is any line voltage present at TB9?
Y N

> **015**
> -Set Power to 0 (operator panel).
> Remove the AC cable at TB9. Connect the CE
> multimeter across the AC cable (see Note 1).
>
> **DANGER**
>
> High voltage will be present at the AC cable when
> the machine power is on.
> -Set Power to 1 (operator panel).
>
> **Is any line voltage present at the cable?**
> Y N
>
> > **016**
> > -Set Power to 0 (operator panel).
> > Connect the CE multimeter from ACTB7-2 to
> > ACTB7-5 (see Note 1).
> >
> > **DANGER**
> >
> > High voltage will be present at ACTB7 when the
> > machine power is on.
> > -Set Power to 1 (operator panel).
> > **Is any line voltage present at ACTB7?**
> > Y N
> >
> > > **017**
> > > -Set Power to 0 (operator panel).
> > > The cable from the AC box to the feature AC
> > > box is bad.
> > > Reconnect the AC cable to TB9.
> > > Reconnect C-B1J3.
> > > Reconnect C-B1J4.
> > > Reinstall C-B1J6.
> > > Remove jumper.

Note 1: The CE multimeter may read as high as 235
Vac.

```
.--------------------.
|      | Line voltage |
|XFMR  |--------------|
| TB   | 50 HZ | 60 HZ |
|---+-------+-------|
| 1 |Common |Common |
| 2 |200 Vac|200 Vac|
| 3 |220 Vac|208 Vac|
| 4 |235 Vac|230 Vac|
| 5 |Ground |Ground |
--------------------
```

7 6 6
G H J

018
-Set Power to 0 (operator panel).
Connect the CE multimeter from ACTB7-7 to
ACTB7-5 (see Note 1).

DANGER

High voltage will be present at ACTB7 when the
machine power is on.
-Set Power to 1 (operator panel).
Is any line voltage present at ACTB7?
Y N

    019
    -Set Power to 0 (operator panel).
    The F207 fuse holder assembly is bad.
    Reconnect the AC cable to TB9.
    Reconnect C-B1J3.
    Reconnect C-B1J4.
    Reinstall C-B1J6.
    Remove jumper.

020
-Set Power to 0 (operator panel).
The AC cable to TB9 is bad.
Reconnect C-B1J3.
Reconnect C-B1J4.
Reinstall C-B1J6.
Remove jumper.

021
The feature power G ferro is bad.
Reconnect the AC cable to TB9.
Reconnect C-B1J3.
Reconnect C-B1J4.
Reinstall C-B1J6.
Remove jumper.

022
-Set Power to 0 (operator panel).
Remove C-B1J1 & C-B1J2 (05-680).
-Set Power to 1 (operator panel).

Connect the CE multimeter from voltage pins to the common pins on the cable from the ferroresonant transformer as indicated in Note 3 and compare the voltage to the low limit.

Note 3: Feature power G
Transformer voltage pins
(05-210 for pin locations)

```
.-----------------------.
|Pin  |Common|Low limit|
|-----+------+---------|
|J2-1|  J2-3 |   22 Vac |
|J2-2|  J2-3 |   22 Vac |
|J1-1|  J1-4 |   11 Vac |
|J1-5|  J1-4 |   11 Vac |
|J1-3|  J1-2 |   11 Vac |
|J1-6|  J1-2 |   11 Vac |
|J1-7|  J1-9 |  4.5 Vac |
|J1-8|  J1-9 |  4.5 Vac |
|J2-4|  J2-6 |  3.6 Vac |
|J2-5|  J2-6 |  3.6 Vac |
-----------------------
```

Does the CE multimeter read more than the low limit for every reading?
Y N

023
-Set Power to 0 (operator panel).
Remove the plastic insulators from the AC capacitor C1 (05-680).

DANGER

Voltages up to 550 Vac are present on the AC capacitor when the power is at the ferroresonant transformer. Verify that the power was removed and short circuit capacitor terminals together before touching the terminals.

Disconnect the leads from the AC capacitor.
Using the CE multimeter on the 'R X 1K' scale, check the capacitor by placing probes across the terminals.
Is the AC capacitor good (see Note 4)?
Y N

Note 4: If the capacitor is good, the CE multimeter will deflect to or near 0 ohms and then return to a high resistance.

8 8 8
K L M

024

The feature power G AC capacitor is bad.
Reconnect C-B1J1 & C-B1J2.
Reconnect C-B1J3 & C-B1J4.
Reinstall C-B1J6.
Remove jumper.

025

The feature power G ferro is bad.
Reconnect C-B1J1 & C-B1J2.
Reconnect C-B1J3 & C-B1J4.
Reinstall C-B1J6.
Remove jumper.

026

-Set Power to 0 (operator panel).
Reconnect C-B1J1 & C-B1J2.
Reconnect C-B1J3 & C-B1J4.
Reinstall C-B1J6.
Remove jumper.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

027

The feature power G filter assembly board C-B1 is bad.

028

A loose cable was the only problem.

029

Remove card C-B1J6.

Connect the CE multimeter from the C-B1J6 voltage
sense pins to the common sense pin as indicated in
Note 5 and compare the voltage to the low limit.

**Does the CE multimeter read more than the low
limit for each level?**

Y N

030
The feature power G filter assembly board C-B1 is
bad.
Reconnect C-B1J3.
Reconnect C-B1J4.
Reinstall C-B1J6.
Remove jumper.

031
-Set Power to 0 (operator panel).
Reinstall C-B1J6.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

032
Bad sense card C-B1J6.
Reconnect C-B1J3 & C-B1J4.

Note 5:

Feature power G
filter assembly board
C-B1J6 sense pins
(05-210 for pin locations)

Level	Low Limit	Pin	Com
+24 V	21.6 Vdc	D13	J10
+12 V	11.0 Vdc	D10	J07
+5 V	4.5 Vdc	J04	J07
-4 V	-3.6 Vdc	J05	J07
-12 V	-11.0 Vdc	D07	J07

1
0
N

033
-Set Power to 0 (operator panel).
Reconnect C-B1J3 & C-B1J4.
-Set Power to 1 (operator panel).
Does the machine power on?
Y N

   034
   -Set Power to 0 (operator panel).
   Remove card C-B1J6.
   -Set Power to 1 (operator panel).
   Connect the CE multimeter from the C-B1J6 voltage
   sense pins to the common sense pin indicated in
   Note 5 and compare the voltage to the low limit.
   **Does the CE multimeter read more than the low
   limit for each level?**
   Y N

      035
      Record the level or levels that read less than the
      low limit.
      **Does the CE multimeter read less than the
      low limit for more than one level?**
      Y N

Note 5: Feature power G
   filter assembly board
   C-B1J6 sense pins
(05-210 for pin locations)

Level	Low Limit	Pin	Com
+24 V	21.6 Vdc	D13	J10
+12 V	11.0 Vdc	D10	J07
+5 V	4.5 Vdc	J04	J07
-4 V	-3.6 Vdc	J05	J07
-12 V	-11.0 Vdc	D07	J07

1 1 1 1
4 4 4 1
P Q R S

036
-Set Power to 0 (operator panel).
Disconnect C-B1J1 & C-B1J2.
Connect the CE multimeter from the voltage pins to the
common pin on the cable from the ferroresonant
transformer as indicated in Note 6 for the recorded
level.
**Does the CE multimeter read less than 1 ohm for
both voltage pins?**
Y N

Note 6: Feature power G
Transformer cable pins
(05-210 for pin locations)

```
.----------------------.
|Level |Voltage| Common|
|------+-------+-------|
| 24 V |  J2-1 |  J2-3 |
|      |  J2-2 |  J2-3 |
|------+-------+-------|
| 12 V |  J1-6 |  J1-2 |
|      |  J1-3 |  J1-2 |
|------+-------+-------|
|  5 V |  J1-7 |  J1-9 |
|      |  J1-8 |  J1-9 |
|------+-------+-------|
| -4 V |  J2-4 |  J2-6 |
|      |  J2-5 |  J2-6 |
|------+-------+-------|
|-12 V |  J1-5 |  J1-4 |
|      |  J1-1 |  J1-4 |
 ----------------------
```

037
The feature power G ferroresonant transformer is
bad.
Reinstall C-B1J6.
Remove jumper.

1
2
T

038
Disconnect C-B1J3 & C-B1J4.
Connect the CE multimeter from the AC input pin(+) to
the DC output pin(-) on the filter assembly board as
indicated in Note 7 for the recorded level.
**Does the CE multimeter read less than 1 k ohm for
all three input pins?**
Y N

Note 7: Feature power G
Filter assembly board
C-B1 pins
(05-210 for pin locations)

Level	AC Input	DC Output
24 V	J2-1	J3B06
24 V	J2-2	J3B06
24 V Rtn	J2-3	J3B05
12 V	J1-6	J3B02
12 V	J1-3	J3B02
12 V Rtn	J1-2	J3B12
5 V	J1-7	J3B03
5 V	J1-8	J3B03
5 V Rtn	J1-9	J3B12
-4 V Rtn	J2-4	J3B12
-4 V Rtn	J2-5	J3B12
-4 V	J2-6	J3B13
-12 V Rtn	J1-5	J3B12
-12 V Rtn	J1-1	J3B12
-12 V	J1-4	J3D02

039
The feature power G filter assembly board C-B1 is
bad.
Remove jumper.

1
3
U

040
Probe from C-A1B2S02(+) to C-A1B2U08(-) (see Note 8).
-Set the Latch switch to the Down position (General logic probe II).
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  041
  Remove C-B1J5.
  Connect the CE multimeter from C-B1J5B11(+) to
  C-B1J5D08(-) on the cable (05-210).

  Does the CE multimeter read more than +4 Vdc?
  Y N

    042
    Connect the CE multimeter from C-A1B2S02(+) to
    C-A1B2U08(-).
    Does the CE multimeter read more than +4 Vdc?
    Y N

      043
      Bad protect card C-A1B2.

    044
    The YA184AB4 net has an open circuit (see FSL Vol D).

  045
  The feature power G ferro is bad.
  ---or---
  Bad sense card C-B1J6.

046
Bad protect card C-A1B2.

Note 8: This is to check for an OC that is causing the UV. Connect the power leads to any D03(+) and D08(-) on the C-A1 power logic board for probe power.

When this problem is fixed, you may determine the OC error.

047
-Set Power to 0 (operator panel).
Remove the plastic insulators from the AC capacitor C1 (05-680).

DANGER

Voltages up to 550 Vac are present on the AC capacitor when the power is at the ferroresonant transformer. Verify that the power was removed and short circuit capacitor terminals together before touching the terminals.

Disconnect the leads from the AC capacitor.
Connect the CE multimeter across the red leads from the ferroresonant transformer.
Does the CE multimeter read less than 10 ohms?
Y N

048
The feature power G ferro is bad.

049
The feature power G AC capacitor is bad.

050
The feature power G filter assembly board C-B1 is bad.
Check for loose screws.

051
Remove jumper.
Loose cable was the only problem.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0510	A	1	001

001
(Entry Point A)
Jumper C-A1A6B04 to C-A1A6D04.
Remove C-B1J3 & C-B1J4 (05-680).
Remove C-B1J5 & C-B1J7 (05-680).
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP locates the failing FRU that causes the OV error.

ENTRY CONDITIONS:
The error data was recorded. Control Supply Status indicator lights on Lamp test. An OV error is indicated on feature power G.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-B1J6

Does the machine power on?
Y N

002
Remove C-A1B2.
Connect the CE multimeter from C-A1A6C04(+) to C-A1B5D08(-).
Does the CE multimeter read more than 1 ohm?
Y N

003
The YA182BB1 net has a short circuit (see FSL, Vol D).
Remove jumper.

004
Bad protect card C-A1B2.
Remove jumper.

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2
A

005

With machine power on, connect the CE multimeter from C-B1J3B12(+) to C-B1J3D02(-) on the feature power G filter assembly board (05-680).
Does the CE multimeter read more than 13.5 Vdc?
Y N

> **006**
> Remove card C-B1J6.
> While the machine power is on, connect the CE multimeter from C-B1J6J07(+) to C-B1J6D05(-).
> **Does the CE multimeter read between 10.8 Vdc and 13.5 Vdc?**
> Y N
>
> > **007**
> > The feature power G filter assembly board C-B1 is bad.
> > Remove jumper.
>
> **008**
> Remove C-B1J1 (05-680).
> With machine power on, connect the CE multimeter from J1-1 to J1-4 (05-210) on the cable from the ferroresonant transformer.
> **Does the CE multimeter read more than 13.5 Vac?**
> Y N
>
> > **009**
> > The feature power G filter assembly board is bad.
> > Remove jumper.
>
> **010**
> The feature power G ferroresonant transformer is bad.
> Remove jumper.

011
Bad sense card C-B1J6.
Remove jumper.

The -12 Vdc level is the only level sensed for over voltage.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	A	1	001

001
(Entry Point A)
Remove card C-B1J6 (05-680).
Jumper C-A1A6B04 to C-A1A6D04.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).

MAP DESCRIPTION:
This MAP determines the cause of an OC power check.

ENTRY CONDITIONS:
An OC error is indicated of feature power G with the load disconnected at C-B1J3 and C-B1J4.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-B1J6

Does the machine power up?
Y N

002
Remove card C-A1B2.
Connect the CE multimeter from C-A1A6E04(+) to ground(-).

Does the CE multimeter read more than 1 ohm?
Y N

003
The YA184AB4 net has a short circuit to ground.
Reconnect C-B1J3 & C-B1J4.
Reinstall C-B1J6.
Reinstall C-A1B2.
Remove jumper.

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2 2
A B

004

Bad protect card C-A1B2.

Reconnect C-B1J3 & C-B1J4.

Reinstall C-B1J6.

Remove jumper.

005

Bad sense card C-B1J6.

---or---

The feature power G filter assembly board C-B1 is bad.

Reconnect C-B1J3 and C-B1J4.

MAP 0594-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
0513	A	1	001
0571	A	1	001
0572	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP determines if the cause of the failure is in the cable to feature power G or in the supply.

ENTRY CONDITIONS:
An error is indicated when the C-B1J7 cable is connected to feature power G.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-B1J6

(Step 001 continues)

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(Step 001 continued)

-Set CB1 to 0 (AC distribution box).
Disconnect C-B1J7 (if not already disconnected) (05-680).
-Set CB1 to 1 (AC distribution box)
Connect the CE multimeter from the pin on the C-B1J7 cable as indicated in Note 1 to C-B1J7-5 (ground) (05-210) and compare the reading to the range as indicated in Note 2 for each level.

Note 1:
C-B1J7 cable voltage pin
(05-210 for pin locations)

```
.---------------------.
|Level|  Pins  |Ground |
|-----+--------+-------|
| +5 V|11,13,14|   5   |
|+24 V|   4    |   5   |
|-24 V|   15   |   5   |
| -5 V|   2    |   5   |
---------------------
```

Note 2:
        Control Supply Table
        (See the FSL Vol D)

```
.---------------------------.
|Level|  Low |High |   Net    |
|-----+-----+-----+---------|
| +5 V| +4.6| +5.2|YA020JJ09|
|+24 V|+22.0|+26.4|YA020JJ04|
|-24 V|-22.0|-26.4|YA020JJ12|
| -5 V| -4.6| -5.5|YA020JJ08|
---------------------------
```

Does each level read above the low range?
Y N

002
The net for the bad level has an open circuit or short circuit to ground.

3
A

003

Remove C-B1J6 card.
Reconnect C-B1J7.
Connect the CE multimeter from the voltage pin as indicated in Note 3 to D08 (ground) and compare the reading to the range as indicated in Note 2 for each level.

Note 3:
C-B1J6 card voltage pin

```
.------------------.
|Level|Pins |Ground|
|-----+-----+------|
| +5 V| D03 | D08  |
|+24 V| D11 | D08  |
|-24 V| D06 | D08  |
| -5 V| J06 | D08  |
.------------------.
```

Does each level read above the low range?
Y N

004

The feature power G filter assembly board C-B1 is bad.

005

Bad sense card C-B1J6.
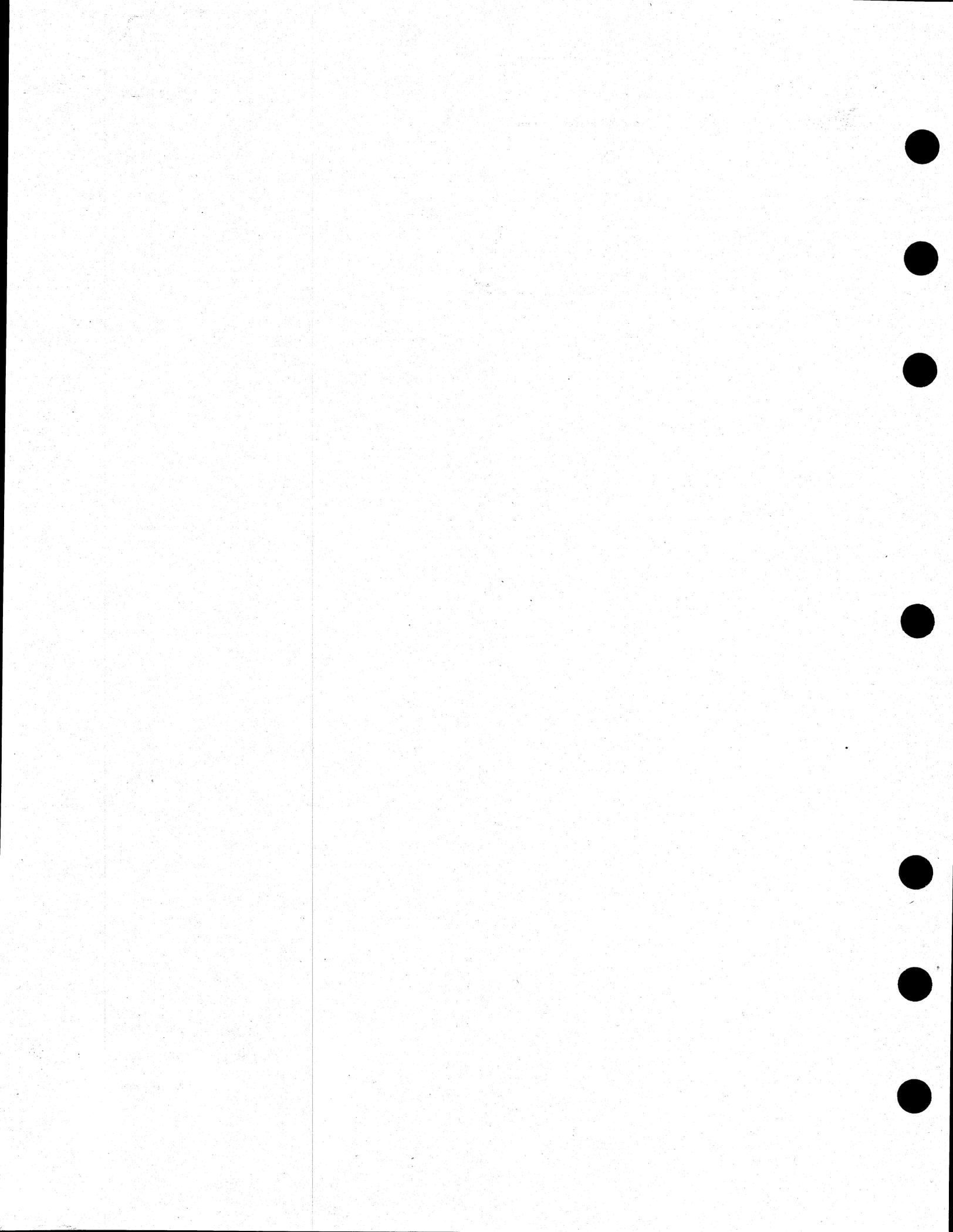
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0511	A	1	001
1020	A	1	001
1020	B	6	028
1030	A	1	001
1030	B	6	028

001
(Entry Point A)

MAP DESCRIPTION:
This MAP checks the drive circuit for relay K4.

ENTRY CONDITIONS:
Entry Point A:
K1 and K2 are on.
K4 is not on.

Entry Point B:
K1 and K2 are on.
K4 will not open.

START CONDITIONS:
None

LOGIC CARDS TESTED:
C-A1B2, C-B1J6

With power on, connect the CE multimeter from C-B1J5D07(+) (05-210, 05-260, Note 2) on the probe side of the cable to frame ground(-).
Does the CE multimeter read more than 20 Vdc?
Y N

Note 2: For C-B1J5, B02 is on the bottom.

|
| |
| |
| |
| |
| |
2 2
A B

002
-Set Power to 0 (operator panel).
Remove C-B1J6.
Connect the CE multimeter from D13 to B12 on the
C-B1J6 card.
Does the CE multimeter read less than 1 ohm?
Y N

  003
  Bad sense card C-B1J6.

004
The feature power G filter assembly board C-B1 is
bad.

005
With power on, connect the CE multimeter from
C-B1J5B02(+) on the probe side of the cable (05-210,
Note 2) to frame ground(-).
Does the CE multimeter read more than 20 Vdc?
Y N

  006
  -Set Power to 0 (operator panel).
  Disconnect C-B1J5.
  Connect the CE multimeter from C-B1J5D07(+) to
  C-B1J5B02(-).
  **Does the CE multimeter read more than 320
  ohms?**
  Y N

    007
    The AC cable in the feature AC box has an open
    circuit.
    ---or---
    Relay K4 is bad.

  008
  Relay K4 is bad.
  ---or---
  The DC cable in the feature AC box has an open
  circuit.

Note 2: For C-B1J5, B02 is on the bottom.

3
C

009
Connect the CE multimeter from C-B1J5D02(+) on the
probe side of the cable (05-210) to frame ground(-).
Does the CE multimeter read more than 4 Vdc?
Y N

> **010**
> -Set Power to 0 (operator panel).
> Remove C-A1B2.
> Connect the CE multimeter from C-A1B2G04(+) to
> C-A1B2J08(-).
> **Does the CE multimeter read more than 4 Vdc?**
> Y N
>
>> **011**
>> -Set CB1 to 0 (AC distribution box)
>> Remove C-B1J6.
>> Connect the CE multimeter from C-A1B2G04(+) to
>> C-B1J6B07(-).
>> **Does the CE multimeter read less than 1
>> ohm?**
>> Y N
>>
>>> **012**
>>> The YA301DD4 net has an open circuit.
>>
>> **013**
>> Bad sense card C-B1J6.
>
> **014**
> Bad protect card C-A1B2.

015
Connect the CE multimeter from C-B1J3D04(+) on the
probe side of the cable (05-210) to frame ground(-).
Does the CE multimeter read less than 1 Vdc?
Y N

> **016**
> -Set Power to 0 (operator panel).
> The YA181AC2 net has an open circuit.

4
D

017
Connect the CE multimeter from C-B1J4D04(+) on the probe side of the cable (05-210) to frame ground(-).
Does the CE multimeter read less than 1 Vdc?
Y N

> **018**
> -Set Power to 0 (operator panel).
> The YA181BA2 net has an open circuit.

019
-Set Power to 0 (operator panel).
Remove C-B1J6.
Disconnect C-B1J5 and C-B1J7.
Disconnect C-B1J3 and C-B1J4.
Connect the CE multimeter from C-B1J3D04(+) to C-B1J6B08(-).
Does the CE multimeter read less than 1 ohm?
Y N

> **020**
> The feature power G filter assembly board C-B1 is bad.

021
Connect the CE multimeter from C-B1J4D04 to C-B1J6B10.
Does the CE multimeter read less than 1 ohm?
Y N

> **022**
> The feature power G filter assembly board C-B1 is bad.

023
Connect the CE multimeter from C-B1J5B02 (note 2) to C-B1J6B02.
Does the CE multimeter read less than 1 ohm?
Y N

> **024**
> The feature power G filter assembly board C-B1 is bad.

Note 2: For C-B1J5, B02 is on the bottom.

5
E

025

Bad sense card C-B1J6 (see Note 1).

Does the card replacement eliminate the problem?
Y N

026
Bad diode on relay K4 or bad relay K4 (05-670).
Bad sense card C-B1J6.

027

The sense card was the only problem.

Note 1: A bad diode on relay K4 may have caused the bad card.

028
(Entry Point B)
-Set Power to 0 (operator panel).
Disconnect C-B1J4 (05-260).
Connect the CE multimeter from C-B1J4D04(+) to C-B1J4D11(-).
Does the CE multimeter read more than +4 Vdc?
Y N

> **029**
> Remove C-B1J6.
> Connect the CE multimeter from C-B1J4D04(+) to C-B1J4D11(-).
> **Does the CE multimeter read more than 1 ohm?**
> **Y N**
>
> > **030**
> > The feature power G filter assembly board C-B1 is bad.
>
> **031**
> Bad sense card C-B1J6.

032
Disconnect C-B1J3 (05-260).
Connect the CE multimeter from C-B1J3D04(+) to C-B1J3D11(-).
Does the CE multimeter read more than 4 Vdc?
Y N

> **033**
> Remove C-B1J6.
> Connect the CE multimeter from C-B1J3D04(+) to C-B1J3D11(-).
> **Does the CE multimeter read more than 1 ohm?**
> **Y N**
>
> > **034**
> > The feature power G filter assembly board C-B1 is bad.
>
> **035**
> Bad sense card C-B1J6.

7
F

036
Connect the CE multimeter from C-B1J5B02(+) on the probe side of the cable (05-210, see Note 2) to frame ground(-).
Does the CE multimeter read more than 20 Vdc?
Y N

    037
    -Set Power to 0 (operator panel).
    Remove C-B1J6.
    Connect the CE multimeter from C-B1J6B02(+) to C-B1J6D08(-).
    Does the CE multimeter read more than 1 ohm?
    Y N

        038
        The YA184AA1 net has a short circuit to ground.

    039
    Bad sense card C-B1J6.

040
Bad relay K4 (05-670).

Note 2: For C-B1J5, B02 is on the bottom.
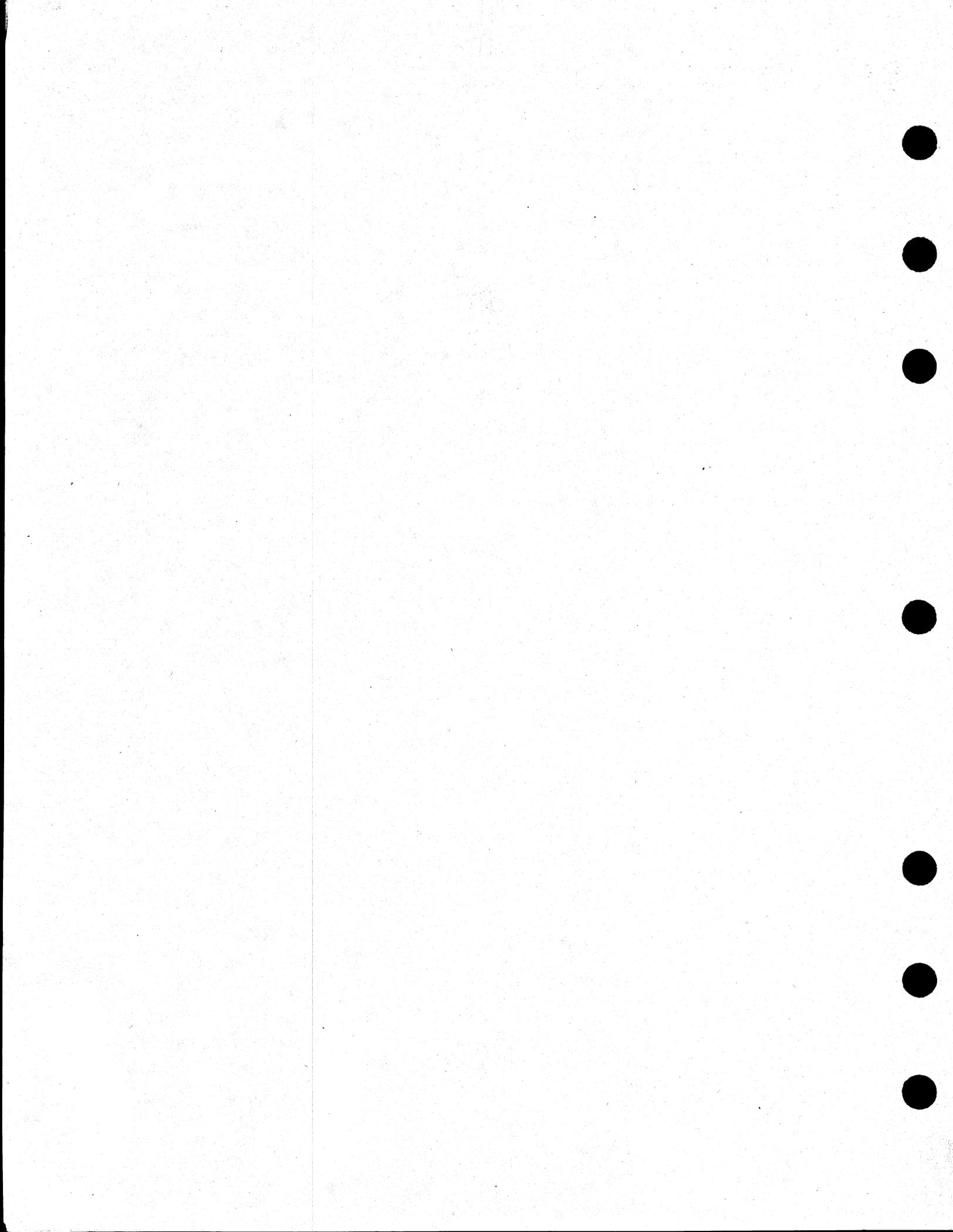
ENTRY POINTS   EXIT POINTS

```
---------------------------------          ------------------------------
FROM   | ENTER THIS MAP                     EXIT THIS MAP | TO
-------+-----------------------             --------------+--------------
MAP    | ENTRY  PAGE     STEP               PAGE    STEP  | MAP      ENTRY
NUMBER | POINT  NUMBER   NUMBER             NUMBER  NUMBER| NUMBER   POINT
-------+-----------------------             --------------+--------------
       | No entry in this table              1      |  0801     A
                                             1      |  0804     A
                                             1      |  0836     A
```

MAP DESCRIPTION:
This is the Printer Error Symptom
MAP. It goes to the correct MAP
for the symptom indicated.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

Select from the following symptoms:

```
*****************************************
*                               | Exit  *
*          Symptom              | To    *
*                               | MAP   *
*****************************************|*******
*  Printer power on problems    |0804   *
*-------------------------------+------ *
*  Cable interlock check        |0836   *
*-------------------------------+------ *
*  For all other 3262 line      |       *
*  printer error symptoms       |0801   *
*-------------------------------+------ *
*  Intermittent problems        |0800   *
*-------------------------------+------ *
*  Printer function             |       *
*  test description             |0800   *
*-------------------------------+------ *
```

If you suspect that the problem is

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EC 834838   PEC 834773

MAP 0800-1

intermittent, run ERAP to aid in
isolating the failing function.

See 5340 MLM (85-000).
Description of Printer Function Tests:

Matrix Print Test----TE290

The program fires one hammer per line and spaces until each print position contains a character or digit. This test identifies hammers not printing or printing lightly. The program prints and spaces 132 lines. All not-ready and check conditions are displayed by the DCP print routine.

H Pattern Print Test----TE291

The program prints lines of Hs so the CE can visually inspect the print quality by comparing the horizontal and vertical relationship of the Hs. The program prints and spaces 25 lines. All not-ready and check conditions are displayed by the DCP print routine.

T Pattern Print Test----TE292

The program prints lines of Ts so the CE can visually inspect the print quality by comparing the horizontal and vertical relationship of the Ts. The program prints and spaces 25 lines. All not-ready and check conditions are displayed by the DCP print routine.

Ripple Print Test----TE293

The program prints lines of the belt image so the CE can visually check the quality of the print belt. An inspection of each character in each set should be made to determine whether the belt needs cleaning or exchanging. The program prints and spaces as many lines as the character set size dictates. The printing is increased one position from home for each line of print. All not-ready and check conditions are displayed by the DCP print routine.

Carriage Space/Skip Test----TE294

The program prints the number of lines that it is going to space or skip, then it spaces or skips. The program spaces or skips the following combination of lines: 1, 2, 4, 6, 8, 16, 32. The printed output should be inspected to ensure that the correct number of spaces or skips were taken. All not-ready and check conditions are displayed by the DCP print routine.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0181	A	1	001
0800	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	003	0804	A

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Entry MAP. This MAP aids in determining the correct action to take in diagnosing failures in the printer and the printer attachment.

START CONDITIONS:
The system and printer power are on.
Ensure that the belt and ribbon are installed and that the forms are loaded in the printer.
Check that the throat is closed and the belt cover is fastened tightly.

LOGIC CARDS TESTED:
A-A2S2, A-A2U2 AND A-A2T2

Is the Power On indicator On (printer console)?
Y N

  002
  -Set printer Power to Off (printer).
  Leave the System Power on.
  Ensure that CP1,2,3,4, and CB01(Mainline circuit breaker) are in the Up position.
  See 3262 Line Printer MLM.
  -Set printer Power to On (printer).
  -Press Reset (CE panel).
  Is the Power On indicator On (printer console)?
  Y N

    003
    Go To Map 0804, Entry Point A.

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2 2
A B

004
Go to Step 005, Entry Point B.

005
(Entry Point B)
Obvious printer problems are:

The forms are jammed.
The type belt is broken.
The ribbon is torn or jammed.
Unusual noise, smoke or torn paper exists.

Are there any obvious printer problems?
Y N

006
Will the printer be serviced using concurrent maintenance?
Y N

007
(Entry Point C)

NOTE: You must have a dedicated system to take this path.

If the printer MDI diagnostics have been run,
The following information includes suggestions that might aid you in finding a machine problem.

Use the MAP Description and the supplemental column (right column) information in the MAPs to aid you in your analysis of the problem.

Look at the error recordings using ERAP. Use the Error Recording Information (80-000) to help analyze the Error History Table information for the different areas. If the error recording information is applicable, go to the MAP indicated. If the error recording information fails to fix the problem, return here.

If the error recording information fails to fix the problem or an error recording does not exist, go
(Step 007 continues)

3 3
C D

(Step 007 continued)
to the Intermittent Failure Replacement List MAP (5001).

Run the printer MDI diagnostics as follows:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to 'FF00'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load (operator panel).
When the Main Menu is displayed on the system console, select the MDI MAPs option.
When the next screen appears, select the Line Printer option and continue as prompted by the display.

NOTE:
If a processor check is encountered anywhere in the softmaps, the correct repair action is to:

1. Reseat the crossover connectors from board A1 to A2.
2. Reseat cards at A-A2T2 and A-A2U2 (printer attachment).
3. Bad card A-A2T2
   ---or---
   A-A2U2 card (printer attachment).
4. Check continuity on the channel interface signals to the cards at A-A2T2 and A-A2U2 (printer attachment). See the net list, page AD100, in FSL Volume D.

008

(Entry Point D)

Load the concurrent maintenance supervisor and run
the printer MDI diagnostics.

See the 5340 Diagnostic Service Guide (99-040).

Can the printer MDI diagnostics be executed?

Y N

   009

   The printer must be serviced with a dedicated
   system.

   Go to Page 2, Step 007, Entry Point C.

010

Follow the instructions indicated by the printer MDI
diagnostics.

011

**Is the printer being serviced using concurrent
maintenance?**

Y N

   012

   Record the indicated error or symptom for use in the
   3262 Line Printer Entry MAP.

   Reinstall any cables removed earlier.

   Reinstall any logic cards removed earlier.

   -Set Power to 1 (operator panel).

   -Set printer Power to On (printer).

   -Set Mode Selector to the Proc Run position (CE
   panel).

   -Set Address/Data switches to the X'FF00' position.

   -Set MSIPL switch to the diskette position (CE
   panel).

   -Set CSIPL switch to the diskette position (CE
   panel).

   -Set all other CE panel switches to their down
   positions.

   Insert diskette DIAGB1.

   -Press Load switch (operator panel).

   -Select the TU Select option.

   -Select the Line Printer option.

   -Select TE217 which loads the line printer functional
   microcode into the printer controller.

   (Step 012 continues)

E

(Step 012 continued)

Go to the 3262 Printer Entry MAP 0010, Entry Point
A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

013

Go to Step 008, Entry Point D.

ENTRY POINTS
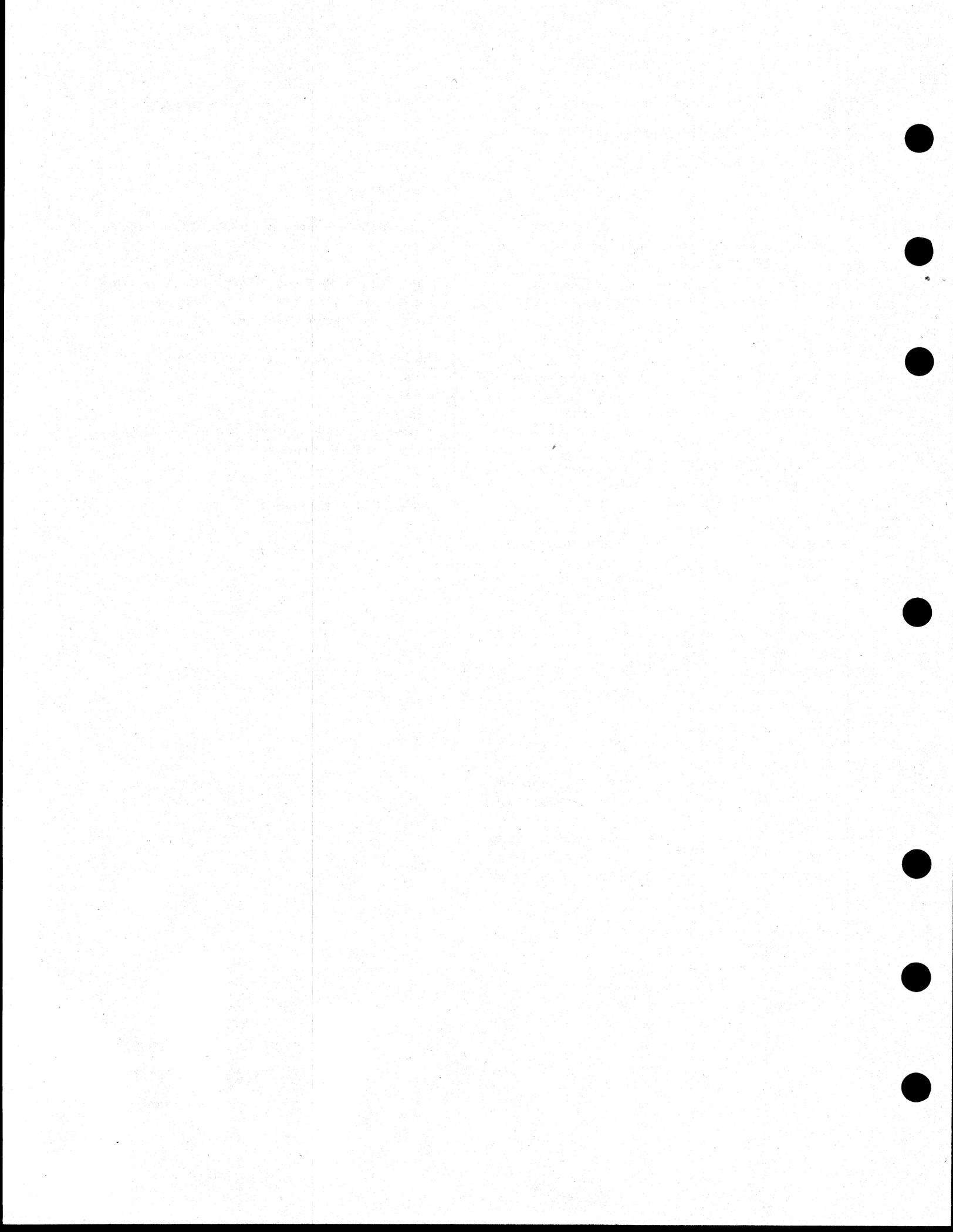
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0863	A	1	001

001
(Entry Point A)

Tear off the section of the forms where you printed the printer function tests and observe the output using this MAP. For a description of the printer function tests, see MAP 0800.

If this MAP does not find the problem, then go to MAP 0814, Entry Point E.

Did the carriage go into forms runaway?
Y N

    002
    Did the carriage space and skip correctly?
    Y N

        003
        Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

    004
    The following information will alalyze the print quality of the output. See printer unti MIM (02-040).
    Is a ribbon problem indicated?
    Y N

        005
        Is the printing smudged?
        Y N

MAP DESCRIPTION:
This MAP will determine if the Print transport mechanism is operating properly. It will also analyze the print quality of the output.

START CONDITIONS:
None

LOGIC CARDS TESTED:
None

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```
3 3 2 2
A B C D
```

006
Is there a horizontal cutoff problem?
Y N

   007
   Is there a vertical registration problem?
   Y N

      008
      Is there a horizontal registration problem?
      Y N

         009
         Are any print positions missing?
         Y N

            010
            Are the print lines wavy?
            Y N

               011
               This is the end of the printer good
               machine test path.

               If a printer problem still exists.
               The following information includes
               suggestions that might aid you in finding
               a machine problem.

               Use the MAP Description and the
               supplemental column (right column)
               information in the MAPs to aid you in
               your analysis of the problem.

               Look at the error recordings using ERAP.
               Use the Error Recording Information
               (80-000) to help analyze the Error History
               Table information for the different areas.
               If the error recording information is
               applicable, go to the MAP indicated. If
               the error recording information fails to fix
               the problem, return here.

               If the error recording information fails to
               (Step 011 continues)

E F G H J

C E F G H J   MAP 0802-2
1

(Step 011 continued)
fix the problem or an error recording
does not exist, go to the Intermittent
Failure Replacement List MAP (5001).

012
Go to the 3262 Line Printer Entry MAP
0010, Entry Point A.

013
Go to the 3262 Line Printer Entry MAP
0010, Entry Point A.

014
Go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

015
Go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

016
Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

017
Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

018

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

019

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0181	A	1	001
0800	A	1	001
0801	A	1	001
0818	A	1	001
0820.	A	1	001
0851	A	1	001
0869	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	014	0816	E

001
(Entry Point A)

MAP DESCRIPTION:
This MAP aids you in determining the cause of the printer power problem.

START CONDITIONS:
The system power is On.

LOGIC CARDS TESTED:
A-A2U2, A-A2T2

Does the 3262 Line Printer Power On indicator (printer console) fail to come On and remain On?
Y N

   002
   Is the 3262 Line Printer power On and the system power Off?
   Y N

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003

The -Power On interface line is not at the expected
level.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

004

(Entry Point C)

**Is the printer being serviced using concurrent
maintenance?**

Y N

  005
  Remove the printer adapter card at A-A2U2.
  -Set Power to 1 (operator panel).
  Probe A-A2U2J12 (-Power On).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

006

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2G09 (-Power On).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  007
  Bad card A-A2T2, A-A2U2

008

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).

Probe A-A2V3B02 (-Power On).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  009
  The -Power On interface line is not at the expected
  level.
  Record the indicated error or symptom for use in the
  3262 Line Printer Entry MAP.
  Reinstall any cables removed earlier.
  Reinstall any logic cards removed earlier.
  -Set Power to 1 (operator panel).
  -Set printer Power to On (printer).
  -Set Mode Selector to the Proc Run position (CE
  panel).
  -Set Address/Data switches to the X'FF00' position.
  -Set MSIPL switch to the diskette position (CE
   panel).
  -Set CSIPL switch to the diskette position (CE
  (Step 009 continues)

(Step 009 continued)
panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

010
Bad cable at location A-A2V3.
---or---
Bad -Power On net on I/O board A2 (FSL Volume D, PT003).

011
There is a printer power problem indicated.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
(Step 011 continues)

(Step 011 continued)
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

012
The -Power On interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.
(Step 012 continues)

(Step 012 continued)

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

013
Is the Function indicator light Off (CE-Mode)
(printer console)?
Y N

 014
 Go To Map 0816, Entry Point E.

015
-Set printer Power to Off (printer).
Leave the System Power on.
Ensure that CP1,2,3,4 and CB01 (Mainline circuit
breaker) are in the Up position..
See 3262 Line Printer MLM.
-Set printer Power to On (printer).
-Press Reset (CE panel).

Did the Power On indicator (printer console) appear
and remain On?
Y N

 016
 -Return to the Main Menu and run TU Select option.
 -Select the Line Printer option.
 -Select the TE262 option which is the Printer Sense
 Test.

 Did the TU return a result byte of '0800' (Thermal
 check 1)?
 Y N

1
0
H J K
    9

017
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select the TE265 option which is the Switch Reg
Sense Test.

Did the TU return a result byte of '0400' (Thermal
check 2)?
Y N

 018
 Is the printer being serviced using concurrent
 maintenance?
 Y N

  019
  Check for a loose card at A-A2U2, and loose
  cables at locations:
  A-A2V3
  D-B5 See system MLM (08-400).
  -Set Power to 1 (operator panel).

  Did the Power On indicator (printer console)
  appear and remain On?
  Y N

   020
   -Return to the Main Menu and run TU Select
   option.
   -Select the Line Printer option.
   -Select TE28C which is the Printer Power On
   Latch Test.
   Did the TU return a result byte of '8000'
   (Power Complete not active)?

   Y N

8 8 8 5 5
L M N P Q

021
A Power On problem has been indicated.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE
panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE
panel).
-Set CSIPL switch to the diskette position (CE
panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point
A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

022
**Did the Power On indicator (printer console) appear
and then disappear?**
Y N

7 6
R S

S
5

023

Add a jumper between the following points:

    A-A2U2J08 and A-A2U2J12 (Ground and -Power On)
    A-A2U2P08 and A-A2U2G13 (Ground and Printer On)

**Did the Power On indicator (printer console) appear
and remain On?**

Y N

   024

   Check continuity between D-B5B02 and A-A2V3B02
   (-Power On)

   Was continuity OK?
   Y N

      025

      Remove all jumpers installed earlier.
      Bad cable at location A-A2V3.
      ---or---
      Bad -Power On net on I/O board A2 (FSL Volume
      D, PT003).

   026

   Remove all jumpers installed earlier.
   The -Power On interface line is not at the expected
   level..
   Record the indicated error or symptom for use in the
   3262 Line Printer Entry MAP.
   Reinstall any cables removed earlier.
   Reinstall any logic cards removed earlier.
   -Set Power to 1 (operator panel).
   -Set printer Power to On (printer).
   -Set Mode Selector to the Proc Run position (CE
   panel).
   -Set Address/Data switches to the X'FF00' position.
   -Set MSIPL switch to the diskette position (CE
   panel).
   -Set CSIPL switch to the diskette position (CE
   panel).
   -Set all other CE panel switches to their down
   positions.
   Insert diskette DIAGB1.
   -Press Load switch (operator panel).
   (Step 026 continues)

7
T

(Step 026 continued)
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

027
Remove all jumpers installed earlier.
Bad card A-A2U2

028
Add a jumper between A-A2V3D08 (Ground) and A-A2V3B08 (-Power complete).
Did the Power On indicator (printer console) appear and remain On?
Y N

> **029**
> Remove jumper
> Bad card A-A2U2

030
Remove jumper
Check continuity between D-B5B08 and A-A2V3B08 (-Power complete).
Was continuity OK?
Y N

U V

031
Bad cable at location A-A2V3.
---or---
Bad -Power complete net on I/O board A2 (FSL Volume D, PT003).

032
The -Power complete interface line is not at the expected level..
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

L M N
4 4 4

PRINTER POWER ON MAP

5340 SYSTEMS UNIT

PAGE 8 OF 10

X   MAP 0804-8

033

The printer power problem is repaired.

034

The –Power On interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

–Set printer Power On (printer).

–Return to the Main Menu and run TU Select option.

–Select the Line Printer option.

–Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

035

Is the printer being serviced using concurrent maintenance?

Y N

9
W X

036

Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Check for a short between A-A2T2M08 and A-A2T2P08 (-Thermal Check 2 and Ground).

Was a short indicated?

Y N

037

The –Thermal Check 2 interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

–Set Power to 1 (operator panel).

–Set printer Power to On (printer).

–Set Mode Selector to the Proc Run position (CE panel).

–Set Address/Data switches to the X'FF00' position.

–Set MSIPL switch to the diskette position (CE panel).

–Set CSIPL switch to the diskette position (CE panel).

–Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

–Press Load switch (operator panel).

–Select the TU Select option.

–Select the Line Printer option.

–Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

(Step 037 continues)

(Step 037 continued)
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

038
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2M08 (-Thermal Check 2).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **039**
> Bad card A-A2T2

040
Bad cable at location A-A2V3.
---or---
Bad -Thermal Check 2 net on I/O board A2 (FSL Volume D, PT003).

041
The -Thermal Check 2 interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the (Step 041 continues)

(Step 041 continued)
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

042
Is the printer being serviced using concurrent maintenance?
Y N

> **043**
> Disconnect the printer interface cables at the system cable tower, location D-B5.   See 5340 MLM (08-400).
> Check for a short between A-A2T2M07 and A-A2T2P08 (-Thermal Check 1 and Ground).
> **Was a short indicated?**
> Y N
>
> > **044**
> > The -Thermal Check 1 interface line is not at the expected level.
> > Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
> > Reinstall any cables removed earlier.
> > Reinstall any logic cards removed earlier.
> > -Set Power to 1 (operator panel).
> > -Set printer Power to On (printer).
> > -Set Mode Selector to the Proc Run position (CE panel).
> > -Set Address/Data switches to the X'FF00' position.
> > -Set MSIPL switch to the diskette position (CE panel).
> > -Set CSIPL switch to the diskette position (CE (Step 044 continues)

07JUL80   PN 8265829

EC 835000   PEC 834838

MAP 0804-9

(Step 044 continued)
panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

045
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2M07 (-Thermal Check 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  046
  Bad card A-A2T2

047
Bad cable at location A-A2V3.
---or---
Bad -Thermal Check 1 net on I/O board A2 (FSL Volume D, PT003).

048
The -Thermal Check 1 interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

049
The printer power problem is repaired.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0851	A	1	001
0853	A	1	001
0859	A	1	001
0861	A	1	001
0869	A	1	001
0873	A	1	001

001
(Entry Point A)
Ensure that the four top card connectors that are positioned over the cards at A-A2S2, A-A2T2 and A-A2U2 are installed properly (See FSL Volume D, page AC322).

The top card connectors in the W and X positions are different from those in the Y and Z positions.

Were the four top card connectors installed properly?
Y N

   002
   Return to the Main Menu and run the MDI MAPs.

003
Is the printer being serviced using concurrent maintenance?
Y N

MAP DESCRIPTION:
This is the Printer controller MAP. It will find the failing FRU by swapping the work station controller card (A-A2N2) and the printer controller card (A-A2S2) if they are the same part number.

START CONDITIONS:
-Set Power to 1 (operator panel).

LOGIC CARDS TESTED:
A-A2S2, A-A2T2, A-A2U2, A-A2M2, A-A2N2

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4 2
A B

004
Determine if the logic cards in locations A-A2N2 and A-A2S2 are the same part number (Reference Logic pages AC3XX in FSL, Volume D).

Are both cards the same part number?
Y N

> **005**
> Bad card A-A2S2
> ---or---
> A-A2T2
> ---or---
> A-A2U2

006
The reasons you are entering this MAP are as follows:

The printer controller card at A-A2S2 and the work station controller card at A-A2N2 are the same part number.

For diagnostic purposes, these cards are swapped in order to determine if the printer controller card at A-A2S2 is failing.

Note:
When swapping the cards at A-A2N2 and A-A2S2 (which you will be asked to swap later), always check the top card connectors for broken or bent pins and ensure that they are seated correctly. See 5340 MLM (08-300).

Have you already run the work station MDI diagnostics?
Y N

4
C D

007
Run the work station MDI diagnostics as follows:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to X'F100'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load (operator panel).
When the machine stops (when all CE panel lights except P1 are off), remove DIAGB1 and insert DIAGB4.

Are all CE panel lights except P1 on?
Y N

> **008**
> -Press CE Start (CE panel).
> If a processor check occurs anywhere in the softmaps, do the following:
>
> Reseat the crossover connectors from board A1 to A2.
> Reseat card A-A2M2 (work station attachment).
> Card A-A2M2 is bad (work station attachment).
> Continuity check the channel interface signals to card A-A2M2 (work station attachment). See page AD100 in FSL Volume D.
> Note: This information is not available at this time.
>
> The softmaps either find the bug or a display appears on the console indicating No Trouble Found.
>
> **Did the work station MDI diagnostics find a problem?**
> Y N

4 4 3
E F G

MAP 0806-2

009
(Entry Point B)
Swap the two cards at A-A2S2 and A-A2N2.
-Set Power to 1 (operator panel).
Run the work station MDI diagnostics as follows:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to X'F100'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load (operator panel).
When the machine stops (when all CE panel lights except P1 are off), remove DIAGB1 and insert DIAGB4.

Are all CE panel lights except P1 on?
Y N

> **010**
> -Press CE Start (CE panel).
> It is acceptable at this point that the work station MDI diagnostics indicate an error run to the No Trouble Found display (after approximately 5 minutes). Do not take any corrective action indicated by the work station MAPs or diagnostics, but return to this point in this MAP and continue.
>
> **Did the work station MDI diagnostics find a problem or did the error symptom change?**
> Y N

H J K

011
Run the printer MDI diagnostics as follows:
-Set Mode Selector to Proc Run (CE panel).
-Set Address/Data switches to X'FF00'.
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down position.
Insert diskette DIAGB1.
-Press Load (operator panel).
-Wait for the Main Menu display and select MDI MAPs.
-When the next screen appears, select the Line Printer option.
Then follow the instructions on the display.
Regardless of how the printer MDI diagnostics terminate, return to this point in this MAP and continue.

Did the printer MDI diagnostics run without an error?
Y N

> **012**
> Bad card A-A2T2
> ---or---
> A-A2U2

013
The controller card (A-A2S2) you swapped to A-A2N2 is bad.
Return the card originally swapped to A-A2S2 to A-A2N2.

014
The controller card (A-A2S2) you swapped to A-A2N2 is bad.
Return the card originally swapped to A-A2S2 to A-A2N2.

015
Go to System Entry MAP 0101, Entry Point A.

A C E F
1 2 2 2

PRTR CNTLR MAP

5340 SYSTEMS UNIT

PAGE 4 OF 4

MAP 0806-4

016
Follow the instructions in the work station diagnostics, then go to Entry Point B of this MAP.

017
Go to System Entry MAP 0101, Entry Point A.

018
@
Go to Page 3, Step 009, Entry Point B.

019
Bad card A-A2S2
---or---
A-A2T2
---or---
A-A2U2

PRINTER CONSOLE LIGHT MAP

5340 SYSTEMS UNIT

MAP 0808-1

PAGE 1 OF 12

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	B	10	050
0820	C	2	005
0820	D	4	020
0820	E	7	035
0857	A	1	001
0857	F	2	007
0857	G	4	022
0857	H	7	037
0857	I	10	052

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Console Light Error MAP.

This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are On. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Did the Forms indicator fail to flash?
Y N

   002
   Did the Interlock indicator fail to flash?
   Y N
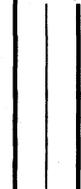
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```
7 4 2
A B C
```

003

Did the Check indicator fail to flash?
Y N

004
The Ready indicator failed to flash.
Go to Page 10, Step 050, Entry Point B.

005
(Entry Point C)
Probe A-A2T2S02 (-Check indicator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

006
Probe A-A2T2S02 (-Check indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

007
(Entry Point F)

Is the printer being serviced using concurrent maintenance?
Y N

4 3 3
D E F G

008
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Check continuity between D-B5D09 and A-A2T2S02.

Was continuity OK?
Y N

009
Bad cable at location A-A2V3.
---or---
Bad -Check indicator net on I/O board A2
(FSL Volume D, PT003).

010
The -Check indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 010 continues)

F
2

CONSOLE LIGHT MAP
5340 SYSTEMS UNIT

PAGE 3 OF 12

E
2

MAP 0808-3

(Step 010 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

011
The -Check indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

012
-Set printer Power to Off (printer).
Leave the System Power on.

Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Probe A-A2T2S02 (-Check indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

013
The -Check indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

014
Is the printer being serviced using concurrent maintenance?
Y N

4 4
H J

13JUL79   PN 8265831
EC 834838   PEC 834773
             MAP 0808-3

015

Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S02 (-Check indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **016**
> Bad card A-A2T2.

017

Bad cable at location A-A2V3.
---or---
Bad -Check indicator net on I/O board A2
(FSL Volume D, PT003).

018

The -Check indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 018 continues)

(Step 018 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

019
Bad card A-A2T2

020
(Entry Point D)
Probe A-A2T2M13 (-Interlock indicator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **021**
> Probe A-A2T2M13 (-Interlock indicator).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **022**
> > **(Entry Point G)**
> >
> > **Is the printer being serviced using concurrent maintenance?**
> > Y N

7 6 5 5
K L M N

023
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Check continuity between D-B5D11 and A-A2T2M13.

Was continuity OK?
Y N

> **024**
> Bad cable at location A-A2V3.
> ---or---
> Bad -Interlock indicator net on I/O board A2
> (FSL Volume D, PT003).

025
The -Interlock indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 025 continues)

(Step 025 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

026
The -Interlock indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

027
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).

Probe A-A2T2M13 (-Interlock indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  028
  The -Interlock indicator interface line is not at the
  expected level.
  Record the indicated error or symptom for use in the
  3262 Line Printer Entry MAP.
  Reinstall any cables removed earlier.
  Reinstall any logic cards removed earlier.
  -Set printer Power On (printer).
  -Return to the Main Menu and run TU Select option.
  -Select the Line Printer option.
  -Select TE217 which loads the line printer functional
  microcode into the printer controller.

  Go to the 3262 Line Printer Entry MAP 0010, Entry
  Point A.

029
**Is the printer being serviced using concurrent
maintenance?**
Y N

P Q

030
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).

Probe A-A2T2M13 (-Interlock indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  031
  Bad card A-A2T2.

032
Bad cable at location A-A2V3.
---or---
Bad -Forms indicator net on I/O board A2
(FSL Volume D, PT003).

033
The -Interlock indicator interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

(Step 033 continues)

13JUL79   PN 8265831

EC 834838   PEC 834773

MAP 0808-6

A K
1 4

U

(Step 033 continued)
The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A,
for further diagnosis of the interface line that was
not at the expected level.

034
Bad card A-A2T2

035
(Entry Point E)
Probe A-A2T2U02 (-Forms indicator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    036
    Probe A-A2T2U02 (-Forms indicator).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

        037
        (Entry Point H)

        Is the printer being serviced using concurrent maintenance?
        Y N

9 8 8
R S T U

038
Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).

Check continuity between D-B5D12 and A-A2T2U02.

Was continuity OK?
Y N

    039
    Bad cable at location A-A2V3.
    ---or---
    Bad -Forms indicator net on I/O board A2
    (FSL Volume D, PT003).

040
The -Forms indicator interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 040 continues)

13JUL79   PN 8265831
EC 834838   PEC 834773
MAP 0808-7

(Step 040 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

041
The -Forms indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

042
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Probe A-A2T2U02 (-Forms indicator).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

043
The -Forms indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

044
Is the printer being serviced using concurrent maintenance?
Y N

13JUL79   PN 8265831

EC 834838   PEC 834773

MAP 0808-8

045
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2U02 (-Forms indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  046
  Bad card A-A2T2.

047
Bad cable at location A-A2V3.
---or---
Bad -Forms indicator net on I/O board A2
(FSL Volume D, PT003).

048
The -Forms indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 048 continues)

(Step 048 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

049
Bad card A-A2T2

A
A

MAP 0808-10

050
(Entry Point B)
Probe A-A2T2S03 (-Ready indicator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

051
Probe A-A2T2S03 (-Ready indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

052
(Entry Point I)

Is the printer being serviced using concurrent maintenance?
Y N

053
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Check continuity between D-B5D13 and A-A2T2S03.

Was continuity OK?
Y N

054
Bad cable at location A-A2V3.
---or---
Bad -Ready indicator net on I/O board A2 (FSL Volume D, PT003).

1 1 1
2 1 1 A
X Y Z A
A

055
The -Ready indicator interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

056

The -Ready indicator interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

057

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

Probe A-A2T2S03 (-Ready indicator).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

058

The -Ready indicator interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

059

Is the printer being serviced using concurrent maintenance?

Y N

1   1
2   2
A   A
B   C

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EC 834838   PEC 834773

MAP 0808-11

060

Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S03 (-Ready indicator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

061
Bad card A-A2T2.

062

Bad cable at location A-A2V3.
---or---
Bad -Ready indicator net on I/O board A2
(FSL Volume D, PT003).

063

The -Ready indicator interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 063 continues)

(Step 063 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

064
Bad card A-A2T2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	B	2	004
0820	C	5	021
0820	D	8	038
0820	E	11	055
0867	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Console Key Error MAP. This MAP finds the failing FRU or goes to the correct Printer Box MAP if necessary.

START CONDITIONS:
The system and printer power are On. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and and covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
I/O cables
Printer cable

Was -Stop/Reset key the interface line that was not at the expected level?
Y N

  002
  Was -Carriage restore key the interface line that was not at the expected level?
  Y N

```
1
1   8   2
A   B   C
```

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C
1

G

003

Was -Carriage space key the interface line that was not at the expected level?

Y N

> **004**
> (Entry Point B)
> Probe A-A2T2P11 (-Ready key).
>
> Up   Light: Off
> Down Light: On
>
> Are the lights correct?
> Y N
>
> > **005**
> > Probe A-A2T2P11 (-Ready key).
> >
> > Up   Light: Off
> > Down Light: Off
> >
> > Are the lights correct?
> > Y N
> >
> > > **006**
> > > Bad card A-A2T2.
> >
> > **007**
> > Gating used:
> >
> > Set probe switches.
> > -Gate Ref to GND.
> > -Latch to Down.
> >
> > Probe A-A2T2P11 (-Ready key).
> > Press and release the -Ready key.
> >
> > Up   Light: On
> > Down Light: On
> >
> > Are the lights correct?
> > Y N

5   3 3
D   E F   G

008

Is the printer being serviced using concurrent maintenance?

Y N

> **009**
> Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).
> Check continuity between D-B5D10 and A-A2T2P11(-Ready key).
> **Was continuity OK?**
> Y N
>
> > **010**
> > Bad cable at location A-A2V3.
> > ---or---
> > Bad -Ready key net on I/O board A2 (FSL Volume D, PT003).

011

The -Ready key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

(Step 011 continues)

3
H

CONSOLE KEY ERROR MAP

5340 SYSTEMS UNIT

PAGE 3 OF 13

(Step 011 continued)

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

012
The -Ready key interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).
(Step 012 continues)

(Step 012 continued)

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

013
Bad card A-A2T2.

014
Is the printer being serviced using concurrent maintenance?
Y N

> **015**
> Remove the printer adapter card at A-A2T2.
> -Set Power to 1 (operator panel).
> Probe A-A2T2P11 (-Ready key).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
>> **016**
>> Bad card A-A2T2.
>
> **017**
> Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).
> -Set Power to 1 (operator panel).
> Probe A-A2T2P11 (-Ready key).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N

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MAP 0810-3

018

The -Ready key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

019

Bad cable at location A-A2V3.

---or---

Bad -Ready key net on I/O board A2 (FSL Volume D, PT003).

020

The -Ready key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

021
(Entry Point C)
Probe A-A2T2S12 (-Carriage space key).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

026
Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).
Check continuity between D-B5B05 and A-A2T2S12(
-Carriage space key).
Was continuity OK?
Y N

> **022**
> Probe A-A2T2S12 (-Carriage space key).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
>> **023**
>> Bad card A-A2T2.
>
> **024**
> Gating used:
>
> Set probe switches.
> -Gate Ref to GND.
> -Latch to Down.
>
> Probe A-A2T2S12 (-Carriage space key).
> Press and release the -Carriage space key.
>
> Up   Light: On
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
>> **025**
>> **Is the printer being serviced using concurrent**
>> **maintenance?**
>> Y N

> > **027**
> > Bad cable at location A-A2V3.
> > ---or---
> > Bad -Carriage space key net on I/O board A2 (FSL
> > Volume D, PT003).

028
The -Carriage space key interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
(Step 028 continues)

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MAP 0810-5

6 6 6
M N P Q

(Step 028 continued)

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

029

The -Carriage space key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

030

Bad card A-A2T2.

031

Is the printer being serviced using concurrent maintenance?

Y N

032

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2S12 (-Carriage space key).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

033

Bad card A-A2T2.

034

Disconnect the printer interface cables at the system cable tower, location D-B5.   See 5340 MLM (08-400).

-Set Power to 1 (operator panel).

Probe A-A2T2S12 (-Carriage space key).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

035

The -Carriage space key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

036

Bad cable at location A-A2V3.
---or---
Bad -Carriage space key net on I/O board A2 (FSL Volume D, PT003).

037

The -Carriage space key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

038
(Entry Point D)
Probe A-A2T2S13 (-Carriage restore key).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **039**
> Probe A-A2T2S13 (-Carriage restore key).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **040**
> > Bad card A-A2T2.
>
> **041**
> Gating used:
>
> Set probe switches.
> -Gate Ref to GND.
> -Latch to Down.
>
> Probe A-A2T2S13 (-Carriage restore key).
> Press and release the -Carriage restore key.
>
> Up   Light: On
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **042**
> > **Is the printer being serviced using concurrent maintenance?**
> > Y N

9 9 9
U V W X

043
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400). Check continuity between D-B5B06 and A-A2T2S13(-Carriage restore key).
Was continuity OK?
Y N

> **044**
> Bad cable at location A-A2V3.
> ---or---
> Bad -Carriage restore key net on I/O board A2 (FSL Volume D, PT003).

045
The -Carriage restore key interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
(Step 045 continues)

(Step 045 continued)
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

046
The –Carriage restore key interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
–Set printer Power On (printer).
–Return to the Main Menu and run TU Select option.
–Select the Line Printer option.
–Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

047
Bad card A-A2T2.

048
**Is the printer being serviced using concurrent
maintenance?**
Y N

  049
  Remove the printer adapter card at A-A2T2.
  –Set Power to 1 (operator panel).
  Probe A-A2T2S13 (–Carriage restore key).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    050
    Bad card A-A2T2.

  051
  Disconnect the printer interface cables at the system
  cable tower, location D-B5.   See 5340 MLM
  (08-400).
  –Set Power to 1 (operator panel).
  Probe A-A2T2S13 (–Carriage restore key).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

052

The -Carriage restore key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

053

Bad cable at location A-A2V3.

---or---

Bad -Carriage restore key net on I/O board A2 (FSL Volume D, PT003).

054

The -Carriage restore key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

A
1

A
E

055
(Entry Point E)
Probe A-A2T2P12 (-Stop/Reset key).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **056**
> Probe A-A2T2P12 (-Stop/Reset key).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **057**
> > Bad card A-A2T2.
>
> **058**
> Gating used:
>
> Set probe switches.
> -Gate Ref to GND.
> -Latch to Down.
>
> Probe A-A2T2P12 (-Stop/Reset key).
> Press and release the -Stop/Reset key.
>
> Up   Light: On
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **059**
> > **Is the printer being serviced using concurrent maintenance?**
> > Y N

```
1  1  1
2  2  2
A  A  A  A
B  C  D  E
```

060
Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400). Check continuity between D-B5B12 and A-A2T2P12(-Stop/Reset key).
Was continuity OK?
Y N

> **061**
> Bad cable at location A-A2V3.
> ---or---
> Bad -Stop/Reset key net on I/O board A2 (FSL Volume D, PT003).

062
The -Stop/Reset key interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
(Step 062 continues)

13JUL79   PN 8265832

EC 834838   PEC 834773

MAP 0810-11

(Step 062 continued)

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

063

The -Stop/Reset key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

064

Bad card A-A2T2.

065

Is the printer being serviced using concurrent maintenance?

Y N

066

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2P12 (-Stop/Reset key).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

067

Bad card A-A2T2.

068

Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).

-Set Power to 1 (operator panel).

Probe A-A2T2P12 (-Stop/Reset key).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

1 1 1
3 3 3
A A A
F G H

A G 1 2
A H 1 2

CONSOLE KEY ERROR MAP

5340 SYSTEMS UNIT

PAGE 13 OF 13

A F 1 2

MAP 0810-13

069

The -Stop/Reset key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

070

Bad cable at location A-A2V3.

---or---

Bad -Stop/Reset key net on I/O board A2 (FSL Volume D, PT003).

071

The -Stop/Reset key interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	B	2	003
0820	C	4	018
0820	D	7	033
0865	B	2	003
0865	C	4	018
0865	D	7	033

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Control Switch Error MAP. This MAP finds the failing FRU or goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
System and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Was -Carriage 8LPI the interface line that was not at the expected level?
Y N

  002
  Was -Throat closed the interface line that was not at the expected level?
  Y N

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7 4 2
A B C

CONTROL SWITCH MAP

5340 SYSTEMS UNIT

MAP 0812-2

003

(Entry Point B)

Remove the forms from under the +End of Forms switch.

Probe A-A2T2S08 (+End of Forms).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **004**
>
> Install the forms under the +End of Forms switch.
> Probe A-A2T2S08 (+End of Forms).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> **Y N**
>
> > **005**
> >
> > **Is the printer being serviced using concurrent maintenance?**
> > **Y N**
> >
> > > **006**
> > >
> > > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> > >
> > > Check continuity between D-B4G02 and A-A2T2S08(+End of Forms).
> > > **Was continuity OK?**
> > > **Y N**
> > >
> > > > **007**
> > > >
> > > > Bad cable at location A-A2V4.
> > > > ---or---
> > > > Bad +End of Forms net on I/O board A2 (FSL Volume D, PT003).

008

The +End of Forms interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

```
3 3 3
D E F  G
```

009

The +End of Forms interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

010

Bad card A-A2T2.

011

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2S08 (+End of Forms).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

012

The +End of Forms interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

013

Is the printer being serviced using concurrent maintenance?
Y N

4 4
H J

014
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S08 (+End of Forms).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   015
   Bad card A-A2T2.

016
Bad cable at location A-A2V4.
---or---
Bad +End of Forms net on I/O board A2 (FSL Volume D, PT003).

017
The +End of Forms interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 017 continues)

(Step 017 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

018
(Entry Point C)
Open the printer throat mechanism.
Probe A-A2T2M03 (-Throat closed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   019
   Close the printer throat mechanism.
   Probe A-A2T2M03 (-Throat closed).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      020
      Is the printer being serviced using concurrent maintenance?
      Y N

6 5 5 5
K L M N

021

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Check continuity between D-B4G04 and A-A2T2M03(-Throat closed).
Was continuity OK?
Y N

> **022**
> Bad cable at location A-A2V4.
> ---or---
> Bad -Throat closed net on I/O board A2 (FSL Volume D, PT003).

023

The -Throat closed interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 023 continues)

(Step 023 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

024

The -Throat closed interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

025
Bad card A-A2T2.

026
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2M03 (-Throat closed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

027
The -Throat closed interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

028
Is the printer being serviced using concurrent maintenance?
Y N

029
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2M03 (-Throat closed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

030
Bad card A-A2T2.

031
Bad cable at location A-A2V4.
---or---
Bad -Throat closed net on I/O board A2 (FSL Volume D, PT003).

032
The -Throat closed interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 032 continues)

13JUL79   PN 8265833

EC 834838   PEC 834773

MAP 0812-6

P Q

(Step 032 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

033
(Entry Point D)
Put the 6/8 LPI Switch in the 8 LPI position.

Probe A-A2T2S09 (-Carriage 8LPI).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **034**
> Put the 6/8 LPI Switch in the 6 LPI position.
> Probe A-A2T2S09 (-Carriage 8LPI).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> **Y N**
>
> > **035**
> > **Is the printer being serviced using concurrent**
> > **maintenance?**
> > **Y N**

8 8 8
R S T U

036
Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).

Check continuity between D-B5B11 and A-A2T2S09(
-Carriage 8LPI).
Was continuity OK?
Y N

> **037**
> Bad cable at location A-A2V3.
> ---or---
> Bad -Carriage 8LPI net on I/O board A2 (FSL
> Volume D, PT003).

038
The -Carriage 8LPI interface line is not at the expected
level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 038 continues)

(Step 038 continued)

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

039

The -Carriage 8LPI interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

040

Bad card A-A2T2.

041

Is the printer being serviced using concurrent maintenance?

Y N

042

Put the 6/8 LPI Switch in the 8 LPI position.

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2S09 (-Carriage 8LPI).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

043

Bad card A-A2T2.

044

Disconnect the printer interface cables at the system cable tower, location D-B5.   See 5340 MLM (08-400).

-Set Power to 1 (operator panel).

Probe A-A2T2S09 (-Carriage 8LPI).

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

9 9 9
V W X

045

The -Carriage 8LPI interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

046

Bad cable at location A-A2V3.

---or---

Bad -Carriage 8LPI net on I/O board A2 (FSL Volume D, PT003).

047

The -Carriage 8LPI interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

MAP 0814-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	B	2	004
0820	C	15	073
0820	D	11	050
0820	E	7	027
0871	C	15	073

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer CLTWRAP Error MAP.

This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Was -Carriage go the interface line that was not at the expected level?
Y N

  002
  Was -Close contactor the interface line that was not at the expected level?
  Y N

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```
1 1
5 1 2
A B C
```

003

Was -Activate paper clamp the interface line that was not at the expected level?

Y N

> **004**
> (Entry Point B)
> Probe A-A2T2M02 (-Belt go).
>
> Up   Light: Off
> Down Light: Off
>
> Are the lights correct?
> Y N
>
>> **005**
>> Probe A-A2T2M02 (-Belt go).
>>
>> Up   Light: On
>> Down Light: Off
>>
>> Are the lights correct?
>> Y N
>>
>>> **006**
>>> Run TU select and loop on diagnostic test TE276.
>>> Probe A-A2T2M02 (-Belt go).
>>>
>>> Up   Light: Off
>>> Down Light: Flashing
>>>
>>> Are the lights correct?
>>> Y N
>>>
>>>> **007**
>>>> -Press the ATTN key to stop the test loop.
>>>> **Is the printer being serviced using concurrent maintenance?**
>>>> Y N

008

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2M02 (-Belt go).

Up   Light: On
Down Light: Off

Are the lights correct?

Y N

> **009**
> Probe A-A2T2M02 (-Belt go).
>
> Up   Light: Off
> Down Light: On
>
> Are the lights correct?
> Y N
>
>> **010**
>> Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
>>
>> Check continuity between D-B4J12 and A-A2T2M02 (-Belt go).
>> **Was continuity OK?**
>> Y N
>>
>>> **011**
>>> Bad cable at location A-A2V4.
>>> ---or---
>>> Bad -Belt go net on I/O board A2 (FSL Volume D, PT003).

7 5 5 5 4
D E F G H J

4 3 3
K L M

012

The -Belt go interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

013

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2M02 (-Belt go)

Up   Light: Off
Down Light: On

Are the lights correct?

Y N

  014

  The -Belt go interface line is not at the expected level.

  Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

  Reinstall any cables removed earlier.

  Reinstall any logic cards removed earlier.

  -Set Power to 1 (operator panel).

  -Set printer Power to On (printer).

  -Set Mode Selector to the Proc Run position (CE panel).

  -Set Address/Data switches to the X'FF00' position.

  -Set MSIPL switch to the diskette position (CE panel).

  -Set CSIPL switch to the diskette position (CE panel).

  -Set all other CE panel switches to their down positions.

  Insert diskette DIAGB1.

  -Press Load switch (operator panel).

  -Select the TU Select option.

  -Select the Line Printer option.

  -Select TE217 which loads the line printer functional microcode into the printer controller.

  Go to the 3262 Printer Entry MAP 0010, Entry Point A.

  If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and
  (Step 014 continues)

4
N

MAP 0814-3

H K N
2 2 3

CTLWRAP ERR TEST MAP

MAP 0814-4

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(Step 014 continued)
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

015
Bad cable at location A-A2V4.
---or---
Bad -Belt go net on I/O board A2 (FSL Volume D,
PT003).

016
Bad card A-A2T2.

017
The -Belt go interface line is not at the expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
(Step 017 continues)

E F G
2 2 2

CTLWRAP ERR TEST MAP

MAP 0814-5

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(Step 017 continued)
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

018
-Press the ATTN key to stop the test loop.
Go to Step 022, Entry Point I.

019
Run TU select and loop on diagnostic test TE276.
Probe A-A2T2M02 (-Belt go).

Note: Observe the probe for several seconds.

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

> **020**
> -Press the ATTN key to stop the test loop.
>
> Bad card A-A2T2.

021
-Press the ATTN key to stop the test loop.
Go to Step 022, Entry Point I.

022
(Entry Point I)
Is the printer being serviced using concurrent maintenance?
Y N

6 6
P Q

023

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Check continuity between D-B4J12 and A-A2T2M02 (-Belt go).

Was continuity OK?

Y N

> **024**
>
> Bad cable at location A-A2V4.
>
> ---or---
>
> Bad -Belt go net on I/O board A2 (FSL Volume D, PT003).

025

The -Belt go interface line is not at the expected level. Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

(Step 025 continues)

(Step 025 continued)

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

026

The -Belt go interface line is not at the expected level. Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.
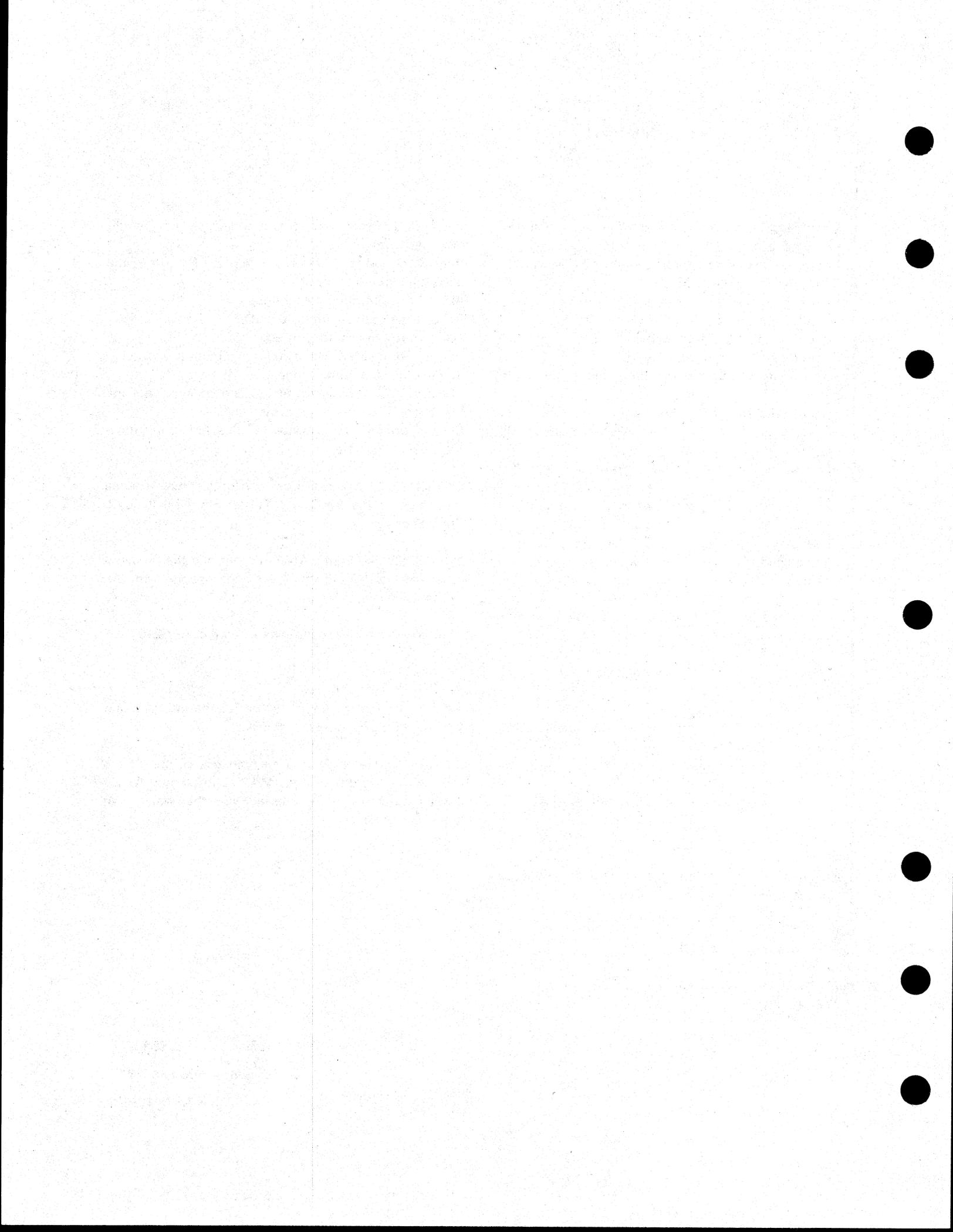
027
(Entry Point E)
Probe A-A2T2P07 (-Activate paper clamp)

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **028**
> Probe A-A2T2P07 (-Activate paper clamp).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **029**
> > Run TU select and loop on diagnostic test TE276.
> > Probe A-A2T2P07 (-Activate paper clamp).
> >
> > Up   Light: Off
> > Down Light: Flashing
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **030**
> > > -Press the ATTN key to stop the test loop.
> > > **Is the printer being serviced using concurrent maintenance?**
> > > Y N

031
Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2P07 (-Activate paper clamp).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **032**
> Probe A-A2T2P07 (-Activate paper clamp).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **033**
> > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> >
> > Check continuity between D-B4J07 and A-A2T2P07 (-Activate paper clamp).
> > **Was continuity OK?**
> > Y N
> >
> > > **034**
> > > Bad cable at location A-A2V4.
> > > ---or---
> > > Bad -Activate paper clamp net on I/O board A2 (FSL Volume D, PT003).

1
0 9 9 9
R S T U V

9 8 8
W X Y

035

The -Activate paper clamp interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

036

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2P07 (-Activate paper clamp).

Up   Light: Off
Down   Light: On

Are the lights correct?
Y N

> **037**
>
> The -Activate paper clamp interface line is not at the expected level.
>
> Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
>
> Reinstall any cables removed earlier.
>
> Reinstall any logic cards removed earlier.
>
> -Set Power to 1 (operator panel).
>
> -Set printer Power to On (printer).
>
> -Set Mode Selector to the Proc Run position (CE panel).
>
> -Set Address/Data switches to the X'FF00' position.
>
> -Set MSIPL switch to the diskette position (CE panel).
>
> -Set CSIPL switch to the diskette position (CE panel).
>
> -Set all other CE panel switches to their down positions.
>
> Insert diskette DIAGB1.
>
> -Press Load switch (operator panel).
>
> -Select the TU Select option.
>
> -Select the Line Printer option.
>
> -Select TE217 which loads the line printer functional microcode into the printer controller.
>
> Go to the 3262 Printer Entry MAP 0010, Entry Point A.
>
> If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and (Step 037 continues)

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EC 834838   PEC 834773

MAP 0814-8

U W Z
7 7 8

CTLWRAP ERR TEST MAP

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S T
7 7

MAP 0814-9

(Step 037 continued)
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

038
Bad cable at location A-A2V4.
---or---
Bad -Activate paper clamp net on I/O board A2
(FSL Volume D, PT003).

039
Bad card A-A2T2.

040
The -Activate paper clamp interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 040 continues)

(Step 040 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A,
for further diagnosis of the interface line that was
not at the expected level.

041
-Press the ATTN key to stop the test loop.
Go to Page 10, Step 045, Entry Point H.

042
Run TU select and loop on diagnostic test TE276.
Probe A-A2T2P07 (-Activate paper clamp).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

043
-Press the ATTN key to stop the test loop.

Bad card A-A2T2.

044
-Press the ATTN key to stop the test loop.

The -Activate paper clamp interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
(Step 044 continues)

(Step 044 continued)

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

045
(Entry Point H)
Is the printer being serviced using concurrent maintenance?
Y N

> **046**
> Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
>
> Check continuity between D-B4J07 and A-A2T2P07 (-Activate paper clamp).
> **Was continuity OK?**
> Y N
>
> > **047**
> > Bad cable at location A-A2V4.
> > ---or---
> > Bad -Activate paper clamp net on I/O board A2 (FSL Volume D, PT003).
>
> **048**
> The -Activate paper clamp interface line is not at the expected level.
> Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
> Reinstall any cables removed earlier.
> Reinstall any logic cards removed earlier.
> -Set Power to 1 (operator panel).
> -Set printer Power to On (printer).
> -Set Mode Selector to the Proc Run position (CE panel).
> -Set Address/Data switches to the X'FF00' position.
> -Set MSIPL switch to the diskette position (CE panel).
> -Set CSIPL switch to the diskette position (CE panel).
> -Set all other CE panel switches to their down positions.
> (Step 048 continues)

(Step 048 continued)
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

049
The -Activate paper clamp interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

(Step 049 continues)

(Step 049 continued)
The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

050
(Entry Point D)
Probe A-A2T2S05 (-Close contactor).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

   051
   Probe A-A2T2S05 (-Close contactor).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      052
      Run TU select and loop on diagnostic test TE268.
      Probe A-A2T2S05 (-Close contactor).

      Up   Light: Off
      Down Light: Flashing

      Are the lights correct?
      Y N

```
1 1 1
3 3 3
A A A  A
B C D  E
```

053
-Press the ATTN key to stop the test loop.
Is the printer being serviced using concurrent maintenance?
Y N

   054
   Remove the printer adapter card at A-A2T2.

   -Set Power to 1 (operator panel).

   Probe A-A2T2S05 (-Close contactor).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      055
      Probe A-A2T2S05 (-Close contactor).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         056
         Disconnect the printer interface cable at the
         system cable tower, location D-B4. See 5340
         MLM (08-400).

         Check continuity between D-B4J09 and
         A-A2T2S05 (-Close contactor).
         Was continuity OK?
         Y N

            057
            Bad cable at location A-A2V4.
            ---or---
            Bad -Close contactor net on I/O board A2
            (FSL Volume D, PT003).

```
1 1 1 1
3 3 2 2
A A A A
F G H J
```

058

The -Close contactor interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

059

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2S05 (-Close contactor).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?

Y N

060

The -Close contactor interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and

(Step 060 continues)

1
3
A
K

(Step 060 continued)
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

061
Bad cable at location A-A2V4.
---or---
Bad -Close contactor net on I/O board A2 (FSL
Volume D, PT003).

062
Bad card A-A2T2.

063
The -Close contactor interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 063 continues)

(Step 063 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

OPTION 2. Get dedicated maintenance control
of the system and return to this MAP, Entry
Point A, for further diagnosis of the interface
line that was not at the expected level.

064
-Press the ATTN key to stop the test loop.
Go to Step 068, Entry Point G.

065
Run TU select and loop on diagnostic test TE268.
Probe A-A2T2S05 (-Close contactor).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

066
-Press the ATTN key to stop the test loop.

Bad card A-A2T2.

067
-Press the ATTN key to stop the test loop.
Go to Step 068, Entry Point G.

068
(Entry Point G)
**Is the printer being serviced using concurrent
maintenance?**
Y N

1 1
4 4
A A
L M

069

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Check continuity between D-B4J09 and A-A2T2S05 (-Close contactor).
Was continuity OK?
Y N

> **070**
> Bad cable at location A-A2V4.
> ---or---
> Bad -Close contactor net on I/O board A2 (FSL Volume D, PT003).

071

The -Close contactor interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 071 continues)

(Step 071 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

072

The -Close contactor interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

073
(Entry Point C)
Probe A-A2T2U13 (-Carriage go).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **074**
> Probe A-A2T2U13 (-Carriage go).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **075**
> > Run TU select and loop on diagnostic test TE278.
> > Probe A-A2T2U13 (-Carriage go).
> >
> > Up   Light: Off
> > Down Light: Flashing
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **076**
> > > -Press the ATTN key to stop the test loop.
> > > **Is the printer being serviced using concurrent maintenance?**
> > > Y N

077
Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2U13 (-Carriage go).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **078**
> Probe A-A2T2U13 (-Carriage go).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **079**
> > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> >
> > Check continuity between D-B4J04 and A-A2T2U13 (-Carriage go).
> > **Was continuity OK?**
> > Y N
> >
> > > **080**
> > > Bad cable at location A-A2V4.
> > > ---or---
> > > Bad -Carriage go net on I/O board A2 (FSL Volume D, PT003).

```
1 1 1 1
9 7 7 7
A A A A      A
N P Q R      S
```

```
1 1 1
7 6 6
A A A
T U V
```

A
U
1
5

MAP 0814-16

081

The -Carriage go interface line is not at the expected
level.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down
positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

082

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2U13 (-Carriage go).

Up   Light: Off

Down Light: On

Are the lights correct?

Y N

083

The -Carriage go interface line is not at the expected
level.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE
panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE
panel).

-Set CSIPL switch to the diskette position (CE
panel).

-Set all other CE panel switches to their down
positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point
A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
(Step 083 continues)

1
7
A
W

A A A
R T W
1 1 1
5 5 6
5 5

CTLWRAP ERR TEST MAP

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A A
P Q
1 1
5 5
5 5

MAP 0814-17

(Step 083 continued)
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

084
Bad cable at location A-A2V4.
---or---
Bad -Carriage go net on I/O board A2 (FSL
Volume D, PT003).

085
Bad card A-A2T2.

086
The -Carriage go interface line is not at the expected
level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 086 continues)

(Step 086 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A,
for further diagnosis of the interface line that was
not at the expected level.

087
-Press the ATTN key to stop the test loop.
Go to Page 19, Step 099, Entry Point F.

088
Run TU select and loop on diagnostic test TE278.
Probe A-A2T2U13 (-Carriage go).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **089**
> -Press the ATTN key to stop the test loop.
>
> Bad card A-A2T2.

090
**Is the printer being serviced using concurrent
maintenance?**
Y N

1 1
8 8
A A
X Y

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EC 834838   PEC 834773

MAP 0814-17

091

-Press the ATTN key to stop the test loop.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400). Check continuity between D-B4J04 and A-A2T2U13 (-Carriage go).

Was continuity OK?

Y N

> **092**
>
> Bad cable at location A-A2V4.
>
> ---or---
>
> Bad -Carriage go net on I/O board A2 (FSL Volume D, PT003).

093

Was a Carriage Check 4 indicated?

Y N

> **094**
>
> The -Carriage go interface line is not at the expected level.
>
> Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
>
> Reinstall any cables removed earlier.
>
> Reinstall any logic cards removed earlier.
>
> -Set Power to 1 (operator panel).
>
> -Set printer Power to On (printer).
>
> -Set Mode Selector to the Proc Run position (CE panel).
>
> -Set Address/Data switches to the X'FF00' position.
>
> -Set MSIPL switch to the diskette position (CE panel).
>
> -Set CSIPL switch to the diskette position (CE panel).
>
> -Set all other CE panel switches to their down positions.
>
> Insert diskette DIAGB1.
>
> -Press Load switch (operator panel).
>
> -Select the TU Select option.
>
> -Select the Line Printer option.
>
> -Select TE217 which loads the line printer functional microcode into the printer controller.
>
> (Step 094 continues)

(Step 094 continued)

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

095

Go to the -Carriage advance MAP 0824, Entry Point A.

096

Was a Carriage Check 4 indicated?

Y N

> **097**
>
> The -Carriage go interface line is not at the expected level.
>
> Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
>
> Record this MAP and step number.
>
> Reinstall any cables removed earlier.
>
> -Set printer Power On (printer).
>
> -Return to the Main Menu and run TU Select option.
>
> -Select the Line Printer option.
>
> -Select TE217 which loads the line printer functional microcode into the printer controller.
>
> Several options are available at this time for further diagnosis. They are:
>
> OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.
>
> If the 3262 Line Printer MAPs do not find the
> (Step 097 continues)

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MAP 0814-18

(Step 097 continued)
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A,
for further diagnosis of the interface line that was
not at the expected level.

098
Go to the -Carriage advance MAP 0824, Entry Point
A.

099
(Entry Point F)
Is the printer being serviced using concurrent
maintenance?
Y N

   100
   Disconnect the printer interface cable at the system
   cable tower, location D-B4.   See 5340 MLM
   (08-400).

   Check   continuity   between   D-B4J04   and
   A-A2T2U13.
   Was continuity OK?
   Y N

      101
      Bad cable at location A-A2V4.
      ---or---
      Bad -Carriage go net on I/O board A2 (FSL
      Volume D, PT003).

102
The -Carriage go interface line is not at the expected
level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

103

The -Carriage go interface line is not at the expected
level.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional
microcode into the printer controller.

Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0804	E	2	004
0820	B	9	053
0820	C	6	034
0820	D	4	019
0820	E	2	004

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Belt Up To Speed, Ribbon Check and Printer Busy Error Test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Was -Ribbon check the interface line that was not at the expected level?
Y N

> **002**
> **Was -Belt up to speed the interface line that was not at the expected level?**
> Y N

9 6 2
A B C

003

Was -Printer busy the interface line that was not at the expected level?

Y N

> **004**
>
> **(Entry Point E)**
>
> Probe A-A2T2B11 (-CE switch on).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
>
> Y N
>
> > **005**
> >
> > Probe A-A2T2B11 (-CE switch on).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> >
> > Y N
> >
> > > **006**
> > >
> > > Bad card A-A2T2.
> >
> > **007**
> >
> > **Is the printer being serviced using concurrent maintenance?**
> >
> > Y N
> >
> > > **008**
> > >
> > > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> > > Check continuity between D-B4G11 and A-A2T2B11(-CE switch on).
> > >
> > > **Was continuity OK?**
> > >
> > > Y N

009

Bad cable at location A-A2V4.

---or---

Bad -CE switch on net on I/O board A2 (FSL Volume D, PT003).

010

The -CE switch on interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

4 3 3
D E F G H

011

The -CE switch on interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

012

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2B11 (-CE switch on).

Up   Light: Off

Down Light: On

Are the lights correct?

Y N

|

    013

    The -CE switch on interface line is not at the expected level.

    Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

    Reinstall any cables removed earlier.

    Reinstall any logic cards removed earlier.

    -Set printer Power On (printer).

    -Return to the Main Menu and run TU Select option.

    -Select the Line Printer option.

    -Select TE217 which loads the line printer functional microcode into the printer controller.

    Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

014

Is the printer being serviced using concurrent maintenance?

Y N

| |

4 4
J K

D J K
2 3 3

UTSPD-RIB TEST MAP

5340 SYSTEMS UNIT

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M   MAP 0816-4

015

Remove the printer adapter card at A-A2T2.

-Set Power to 1 (operator panel).

Probe A-A2T2B11 (-CE switch on).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    016
    Bad card A-A2T2.

017

Bad cable at location A-A2V4.

---or---

Bad -CE switch on net on I/O board A2 (FSL Volume D, PT003).

018

Bad card A-A2T2

---or---

Bad cable at location A-A2V4.

---or---

Bad -CE switch on net on I/O board A2 (FSL Volume D, PT003).

019

(Entry Point D)

Probe A-A2T2P13 (-Printer busy).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

6
L M

020

Probe A-A2T2P13 (-Printer busy).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    021
    Bad card A-A2T2.

022

Is the printer being serviced using concurrent maintenance?
Y N

    023

    Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

    Check continuity between D-B4J13 and A-A2T2P13(-Printer busy).

    Was continuity OK?
    Y N

        024

        Bad cable at location A-A2V4.

        ---or---

        Bad -Printer busy net on I/O board A2 (FSL Volume D, PT003).

025

The -Printer busy interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

026

The -Printer busy interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

027
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2P13 (-Printer busy).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

| | **028**
| | The -Printer busy interface line is not at the expected
| | level.
| | Record the indicated error or symptom for use in the
| | 3262 Line Printer Entry MAP.
| | Reinstall any cables removed earlier.
| | Reinstall any logic cards removed earlier.
| | -Set printer Power On (printer).
| | -Return to the Main Menu and run TU Select option.
| | -Select the Line Printer option.
| | -Select TE217 which loads the line printer functional
| | microcode into the printer controller.
| |
| | Go to the 3262 Line Printer Entry MAP 0010, Entry
| | Point A.

029
Is the printer being serviced using concurrent
maintenance?
Y N

Q R

030
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2P13 (-Printer busy).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

| | **031**
| | Bad card A-A2T2.

032
Bad cable at location A-A2V4.
---or---
Bad -Printer busy net on I/O board A2 (FSL
Volume D, PT003).

033
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Printer busy net on I/O board A2 (FSL Volume
D, PT003).

034
(Entry Point C)
Probe A-A2T2J10 (-Belt up to speed)

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

8 7
S T

MAP 0816-6

035
Probe A-A2T2J10 (-Belt up to speed).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  036
  Bad card A-A2T2.

037
Run TU select and loop on diagnostic test TE296.
Probe A-A2T2J10 (-Belt up to speed).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  038
  -Press the ATTN key to stop the test loop.
  Is the printer being serviced using concurrent
  maintenance?
  Y N

    039
    Disconnect the printer interface cable at the
    system cable tower, location D-B4. See 5340
    MLM (08-400).
    Check continuity between D-B4G12 and
    A-A2T2J10(-Belt up to speed).
    Was continuity OK?
    Y N

      040
      Bad cable at location A-A2V4.
      ---or---
      Bad -Belt up to speed net on I/O board A2
      (FSL Volume D, PT003).

041
Check continuity between D-B4J12 and A-A2T2M02 (
-Belt go).
Was continuity OK?
Y N

  042
  Bad cable at location A-A2V4.
  ---or---
  Bad -Belt go net on I/O board A2 (FSL Volume D,
  PT003)..

043
The -Belt up to speed interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
(Step 043 continues)

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MAP 0816-7

8 8
U V W

(Step 043 continued)
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

044
One or more of the following interface lines is not at
the expected level:
-Belt up to speed
-Belt go

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

045
-Press the ATTN key to stop the test loop.
Bad card A-A2T2.

046
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2J10 (-Belt up to speed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   047
   The -Belt up to speed interface line is not at the
   expected level.
   Record the indicated error or symptom for use in the
   3262 Line Printer Entry MAP.
   Reinstall any cables removed earlier.
   Reinstall any logic cards removed earlier.
   -Set printer Power On (printer).
   -Return to the Main Menu and run TU Select option.
   -Select the Line Printer option.
   -Select TE217 which loads the line printer functional
   microcode into the printer controller.

   Go to the 3262 Line Printer Entry MAP 0010, Entry
   Point A.

048
**Is the printer being serviced using concurrent
maintenance?**
Y N

```
A X Y
1 8 8
```

UTSPD-RIB TEST MAP

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```
A
A
```

MAP 0816-9

049
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2J10 (-Belt up to speed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  050
  Bad card A-A2T2.

051
Bad cable at location A-A2V4.
---or---
Bad -Belt up to speed net on I/O board A2 (FSL
Volume D, PT003).

052
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Belt up to speed net on I/O board A2 (FSL
Volume D, PT003).

053
(Entry Point B)
Probe A-A2T2G08 (-Ribbon check).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

054
Probe A-A2T2G08 (-Ribbon check).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  055
  Bad card A-A2T2.

056
**Is the printer being serviced using concurrent
maintenance?**
Y N

  057
  Disconnect the printer interface cable at the system
  cable tower, location D-B4.   See 5340 MLM
  (08-400).
  Check   continuity   between   D-B4G09   and
  A-A2T2G08.
  Was continuity OK?
  Y N

    058
    Bad cable at location A-A2V4.
    ---or---
    Bad -Ribbon check net on I/O board A2 (FSL
    Volume D, PT003).

```
1 1   A
1 1   A
Z A
```

```
1 1
0 0
A A
B C
```

059
The -Ribbon check interface line is not at the expected
level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

060
The -Ribbon check interface line is not at the expected
level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

061
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2G08 (-Ribbon check).

```
Up    Light: Off
Down Light: On
```

Are the lights correct?
Y N

> **062**
> The -Ribbon check interface line is not at the
> expected level.
> Record the indicated error or symptom for use in the
> 3262 Line Printer Entry MAP.
> Reinstall any cables removed earlier.
> Reinstall any logic cards removed earlier.
> -Set printer Power On (printer).
> -Return to the Main Menu and run TU Select option.
> -Select the Line Printer option.
> -Select TE217 which loads the line printer functional
> microcode into the printer controller.
>
> Go to the 3262 Line Printer Entry MAP 0010, Entry
> Point A.

063
**Is the printer being serviced using concurrent
maintenance?**
Y N

A A
D E

064
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2G08 (-Ribbon check).

```
Up    Light: Off
Down Light: On
```

Are the lights correct?
Y N

> **065**
> Bad card A-A2T2.

066
Bad cable at location A-A2V4.
---or---
Bad -Ribbon check net on I/O board A2 (FSL
Volume D, PT003).

067
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Ribbon check net on I/O board A2 (FSL Volume
D, PT003).
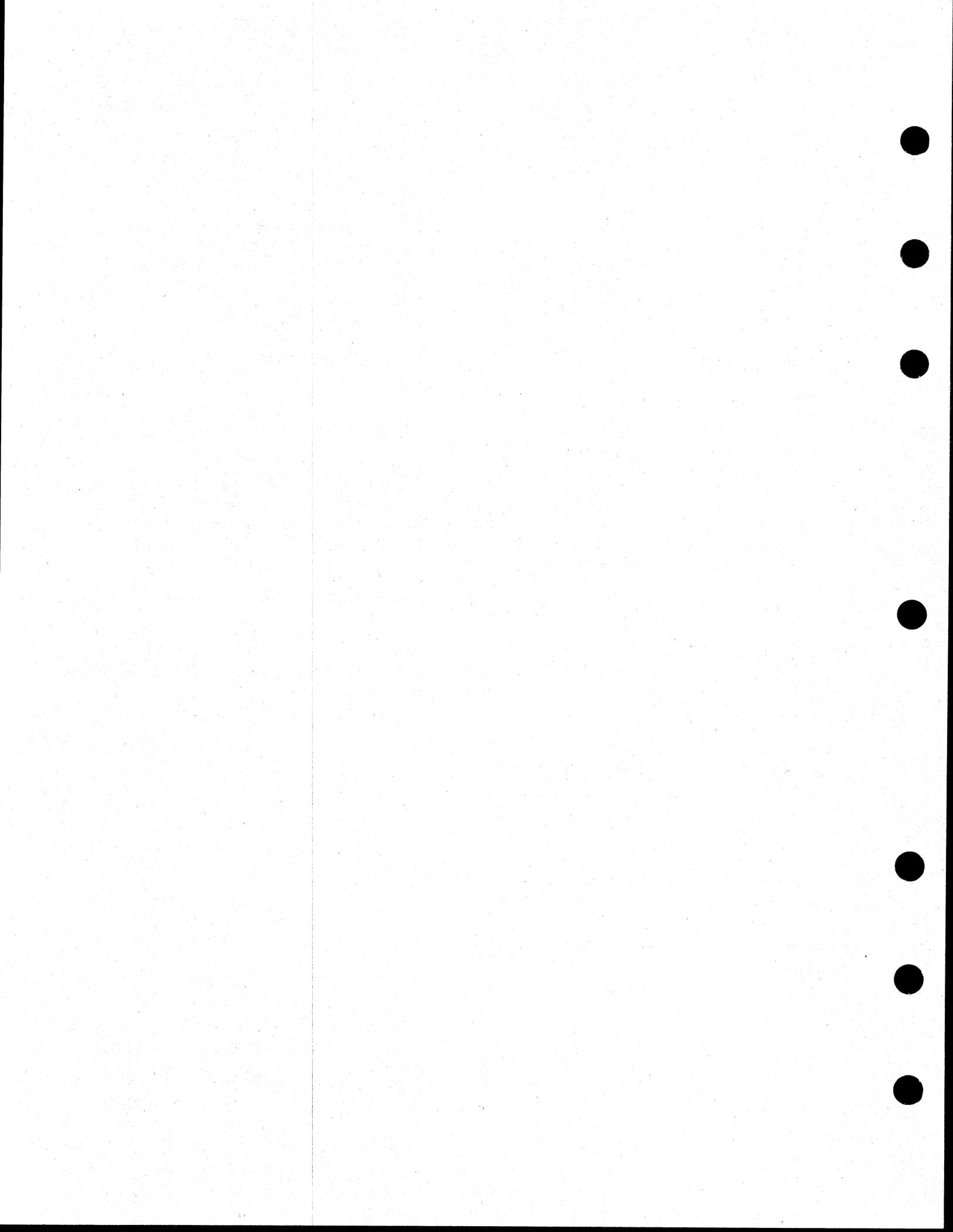
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001
0820	B	3	010
0820	C	6	025

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
8	038	0804	A

001
(Entry Point A)
Probe A-A2T2G12 (-Not print time).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This is the Printer Data Parity Check and Power Problem MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2, A-A2U2, board wiring, system cables

Are the lights correct?
Y N
|
| **002**
| Probe A-A2T2G12 (-Not print time).
|
| Up   Light: On
| Down Light: Off
|
| **Are the lights correct?**
| Y N
| |
| | **003**
| | Bad card A-A2T2.

3 2
A B

004

Is the printer being serviced using concurrent maintenance?

Y N

005

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
Check continuity between D-B4D04 and A-A2T2G12(-Not print time).
Was continuity OK?

Y N

006

Bad cable at location A-A2V5.
---or---
Bad -Not print time net on I/O board A2 (FSL Volume D, PT003).

007

The -Not print time interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
(Step 007 continues)

(Step 007 continued)

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

008

The -Not print time interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).
(Step 008 continues)

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MAP 0818-2

C

A
1

(Step 008 continued)

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

009
Bad card A-A2T2.

010
(Entry Point B)
Probe A-A2T2S07 (-Data parity check).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

> **011**
> Probe A-A2T2S07 (-Data parity check).
>
> ```
> Up    Light: On
> Down  Light: Off
> ```
>
> **Are the lights correct?**
> Y N
>
> > **012**
> > Bad card A-A2T2.
>
> **013**
> **Is the printer being serviced using concurrent maintenance?**
> Y N
>
> > **014**
> > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> > Check continuity between D-B4D05 and A-A2T2S07(-Data parity check).
> > **Was continuity OK?**
> > Y N
> >
> > > **015**
> > > Bad cable at location A-A2V5.
> > > ---or---
> > > Bad -Data parity check net on I/O board A2 (FSL Volume D, PT003).

5   4   4
D   E   F

016

The -Data parity check interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

017

The -Data parity check interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

018
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2S07 (-Data parity check).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **019**
> The -Data parity check interface line is not at the
> expected level.
> Record the indicated error or symptom for use in the
> 3262 Line Printer Entry MAP.
> Reinstall any cables removed earlier.
> Reinstall any logic cards removed earlier.
> -Set printer Power On (printer).
> -Return to the Main Menu and run TU Select option.
> -Select the Line Printer option.
> -Select TE217 which loads the line printer functional
> microcode into the printer controller.
>
> Go to the 3262 Line Printer Entry MAP 0010, Entry
> Point A.

020
Is the printer being serviced using concurrent
maintenance?
Y N

G H

021
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S07 (-Data parity check).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **022**
> Bad card A-A2T2.

023
Bad cable at location A-A2V5.
---or---
Bad -Data parity check net on I/O board A2 (FSL
Volume D, PT003).

024
Bad card A-A2T2
---or---
Bad cable at location A-A2V5.
---or---
Bad -Data parity check net on I/O board A2 (FSL
Volume D, PT003).

025
(Entry Point C)
Probe A-A2U2J13 (-Power complete).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **026**
> Probe A-A2U2J13 (-Power complete).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **027**
> > Bad card A-A2U2.
>
> **028**
> **Is the printer being serviced using concurrent maintenance?**
> Y N
>
> > **029**
> > Disconnect the printer interface cables at the system cable tower, location D-B5. See 5340 MLM (08-400).
> > Check continuity between D-B5B08 and A-A2U2J13(-Power complete).
> > **Was continuity OK?**
> > Y N
> >
> > > **030**
> > > Bad cable at location A-A2V3.
> > > ---or---
> > > Bad -Power complete net on I/O board A2 (FSL Volume D, PT003).

031
The -Power complete interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

7 7
J K L

032
The -Power complete interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

033
-Set printer Power to Off (printer).
Leave the System Power on.

Probe A-A2U2J13 (-Power complete).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **034**
> Probe A-A2U2J13 (-Power complete).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**
>
> > **035**
> > Bad card A-A2U2
>
> **036**
> -Set printer Power to On (printer).
> Probe A-A2U2J13 (-Power complete).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> **Y N**
>
> > **037**
> > Probe A-A2V3B02 (-Power On).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > **Y N**

8 8 8 8
M N P Q

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MAP 0818-7

M N P Q
7 7 7 7

PRTR SENSE ERR MAP

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R S

MAP 0818-8

038
Go To Map 0804, Entry Point A.

039
The -Power complete interface line is not at the
expected level.
Record the indicated error or symptom for use in
the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select
option.
-Select the Line Printer option.
-Select TE217 which loads the line printer
functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

040
Bad card A-A2U2

041
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cables at the system
cable tower, location D-B5. See 5340 MLM (08-400).
Probe A-A2U2J13 (-Power complete).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

042
The -Power complete interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

043
**Is the printer being serviced using concurrent
maintenance?**
Y N

044
Remove the printer adapter card at A-A2U2.
-Set Power to 1 (operator panel).
Probe A-A2U2J13 (-Power complete).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

045
Bad card A-A2U2.

R S

9 9
T U

13JUL79   PN 8265836

EC 834838   PEC 834773

MAP 0818-8

046

Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2P04 (-Power complete).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

  047
  Bad card A-A2T2.

048

Bad cable at location A-A2V3.
---or---
Bad -Power complete net on I/O board A2 (FSL
Volume D, PT003)..

049

Bad card A-A2U2
---or---
Bad cable at location A-A2V3.
---or---
Bad -Power complete net on I/O board A2 (FSL
Volume D, PT003).

MAP 0820-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0859	A	1	001
0861	A	1	001
0865	A	1	001
0875	A	1	001
0877	A	1	001
0879	A	1	001
0881	A	1	001
0883	A	1	001
0885	A	1	001
0887	A	1	001
0889	A	1	001
0895	A	1	001
0897	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This is the Printer Adapter Hard Copy Entry MAP. It will indicate the correct diagnostic procedure to use in the event concurrent maintenance is being used or dedicated maintenance is being used.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat is closed and the belt cover is fastened tightly.

LOGIC CARDS TESTED:
None

Is the printer being serviced using concurrent maintenance?
Y N

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3 2
A B

002
(Entry Point B)
Did the MDI diagnostics indicate that an interface
line was at an unexpected level?
Y N

   003
   Record the indicated error or symptom for use in the
   3262 Line Printer Entry MAP.
   Reinstall any cables removed earlier.
   Reinstall any logic cards removed earlier.
   -Set printer Power On (printer).
   -Return to the Main Menu and run TU Select option.
   -Select the Line Printer option.
   -Select TE217 which loads the line printer functional
   microcode into the printer controller.

   Go to the 3262 Line Printer Entry MAP 0010, Entry
   Point A.

004
Locate in Table A the interface line that was at the
unexpected level and go to the MAP indicated for that
line.

**********TABLE A **************

Printer/Adapter interface lines
with their associated MAP
indicated for further diagnosis
(FSL Volume D, PT003).
LINE NAME	MAP
-Power on	0804,A
-Check indicator	0808,C
-Interlock indicator	0808,D
-Forms indicator	0808,E
-Ready indicator	0808,B
-Carriage go	0814,C
+POR (Power on reset)	0832,A
-Activate paper clamp	0814,E
-Close contactor	0814,D
-Belt go	0814,B

(Step 004 continues)

(Step 004 continued)
-Data bit 0	0826,B
-Data bit 1	0826,B
-Data bit 2	0826,B
-Data bit 3	0826,B
-Data bit 4	0826,B
-Data bit 5	0826,B
-Data bit 6	0826,B
-Data bit 7	0826,B
-Parity bit	0826,A
-Strobe	0826,C
-Hammer sample	0834,A
-Fire tier 1	0822,B
-Fire tier 2	0822,B
-Fire tier 3	0822,B
-Fire tier 4	0822,B
-Fire tier 5	0822,B
-Carriage space key	0810,C
-Carriage restore key	0810,D
-Power complete	0818,C
-Carriage 8LPI	0812,D
-Stop/Reset key	0810,E
-Ready key	0810,B
+End of forms	0812,B
-Print subscans	0822,C
-Throat closed	0812,C
-Forms pulse	0828,A
-Carriage advance	0824,A
-Impression CTL SS	0822,D
-Ribbon check	0816,B
-CE switch on	0816,E
-Belt up to speed	0816,C
-Home	0822,E
-Printer busy	0816,D
-Hammer echo return	0830,A
-Not print time	0818,A
-Data parity check	0818,B
+Cable interlock	0836,A
-Thermal check 1	0842,A
-Thermal check 2	0842,B
-Carriage pedestal check	0842,C

HARDMAP ENTRY

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005

Did the MDI diagnostics indicate that an interface line was not at the expected level?

Y N

006

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

C

007

**********TABLE C **************

Interface lines driven by the printer adapter cards A-A2T2 & A-A2U2 (FSL Volume D, PT003).

LINE NAME	MAP
-Check indicator	0808,C
-Interlock indicator	0808,D
-Forms indicator	0808,E
-Ready indicator	0808,B
-Carriage go	0814,C
+POR (Power on reset)	0832,A
-Activate paper clamp	0814,E
-Close contactor	0814,D
-Belt go	0814,B
-Data bit 0	0826,B
-Data bit 1	0826,B
-Data bit 2	0826,B
-Data bit 3	0826,B
-Data bit 4	0826,B
-Data bit 5	0826,B
-Data bit 6	0826,B
-Data bit 7	0826,B
-Parity bit	0826,A
-Strobe	0826,C
-Hammer sample	0834,A
-Fire tier 1	0822,B
-Fire tier 2	0822,B
-Fire tier 3	0822,B
-Fire tier 4	0822,B
-Fire tier 5	0822,B

Is the interface line that was not at the expected level listed in Table C?

Y N

4 4
D E

008

Record the interface line that was not at the expected level, see Table D.

The interface line that was not at the expected level is driven by the 3262 Line Printer.

Locate, in Table D, the interface line that was not at the expected level and go to the MAP indicated for that line.

```
**********TABLE D **************
```

Interface lines driven by the line printer with the exception of cable interlock (FSL Volume D, PT003).

LINE NAME	MAP
-Carriage space key	0810,C
-Carriage restore key	0810,D
-Power complete	0818,C
-Carriage 8LPI	0812,D
-Stop/Reset key	0810,E
-Ready key	0810,B
+End of forms	0812,B
-Print subscans	0822,C
-Throat closed	0812,C
-Forms pulse	0828,A
-Carriage advance	0824,A
-Impression CTL SS	0822,D
-Ribbon check	0816,B
-CE switch on	0816,E
-Belt up to speed	0816,C
-Home	0822,E
-Printer busy	0816,D
-Hammer echo return	0830,A
-Not print time	0818,A
-Data parity check	0818,B
+Cable interlock	0836,A
-Thermal check 1	0842,A
-Thermal check 2	0842,B
-Carriage pedestal check	0842,C

009

Record the interface line that was not at the expected level, see Table C.

The interface line that was not at the expected level is driven by the printer adapter card, location A-A2T2 or A-A2U2.

Locate, in Table C, the interface line that was not at the expected level and go to the MAP indicated for that line.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	B	2	004
0820	C	10	057
0820	D	7	040
0820	E	5	023

001
(Entry Point A)

MAP DESCRIPTION:
This is the Fire Tier (1-5) and Belt Interface Wrap Error MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and covers are closed.

LOGIC CARDS TESTED:
A-A2T2
A-A2U2
Board wiring
System cables

Was -Print subscans the interface line that was not at the expected level?
Y N

   002
   Was -Impression CTL SS the interface line that was not at the expected level?
   Y N

1
0 7 2
A B C

003

Was -Home the interface line that was not at the expected level?

Y N

  004

  (Entry Point B)

  One or more of the following interface lines was not at the expected level.

  Probe the failing interface line or lines.

  Up   Light: Off
  Down Light: On

  A-A2T2U07 (-Fire tier 1)
  A-A2T2U10 (-Fire tier 2)
  A-A2T2U12 (-Fire tier 3)
  A-A2T2U09 (-Fire tier 4)
  A-A2T2U11 (-Fire tier 5)

  Are the lights correct?

  Y N

    005

    Probe the failing interface line or lines.

    Up   Light: On
    Down Light: Off

    A-A2T2U07 (-Fire tier 1)
    A-A2T2U10 (-Fire tier 2)
    A-A2T2U12 (-Fire tier 3)
    A-A2T2U09 (-Fire tier 4)
    A-A2T2U11 (-Fire tier 5)

    Are the lights correct?

    Y N

      006

      Is the printer being serviced using concurrent maintenance?

      Y N

5 3 3 3
D E F G H

007

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400). Check continuity between the following points:

D-B4D09 and A-A2T2U07 (-Fire tier 1)
D-B4D10 and A-A2T2U10 (-Fire tier 2)
D-B4D11 and A-A2T2U12 (-Fire tier 3)
D-B4D12 and A-A2T2U09 (-Fire tier 4)
D-B4D13 and A-A2T2U11 (-Fire tier 5)

Was continuity OK?

Y N

  008

  Bad cable at location A-A2V5.

  ---or---

  Bad net on I/O board A2 for one or more of the -Fire tier 1-5 interface lines (FSL Volume D, PT003)..

009

One or more of the interface lines -Fire tier 1-5 is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

(Step 009 continues)

(Step 009 continued)
If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

010
One or more of the interface lines -Fire tier 1-5 is not at the expected level?.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at
(Step 010 continues)

(Step 010 continued)
the expected level.

011
Run TU select and loop on diagnostic test TE270.
Probe the failing interface line or lines.

Up   Light: On or flashing
Down Light: On or flashing

A-A2T2U07 (-Fire tier 1)
A-A2T2U10 (-Fire tier 2)
A-A2T2U12 (-Fire tier 3)
A-A2T2U09 (-Fire tier 4)
A-A2T2U11 (-Fire tier 5)
Are the lights correct?
Y N

012
-Press the ATTN key to stop the test loop.
Bad card A-A2T2.

013
-Press the ATTN key to stop the test loop.
Bad card A-A2U2.

014
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
Probe the failing interface line or lines.

Up   Light: Off
Down Light: On

A-A2T2U07 (-Fire tier 1)
A-A2T2U10 (-Fire tier 2)
A-A2T2U12 (-Fire tier 3)
A-A2T2U09 (-Fire tier 4)
A-A2T2U11 (-Fire tier 5)
Are the lights correct?
Y N

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4 4   MAP 0822-3
J K

015
One or more of the interface lines –Fire tier 1-5 is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
–Set printer Power On (printer).
–Return to the Main Menu and run TU Select option.
–Select the Line Printer option.
–Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

016
Is the printer being serviced using concurrent maintenance?
Y N

017
Remove the printer adapter card at A-A2T2.
–Set Power to 1 (operator panel).
Probe the failing interface line or lines.

Up   Light: Off
Down Light: On

A-A2T2U07 (–Fire tier 1)
A-A2T2U10 (–Fire tier 2)
A-A2T2U12 (–Fire tier 3)
A-A2T2U09 (–Fire tier 4)
A-A2T2U11 (–Fire tier 5)
Are the lights correct?
Y N

018
Bad card A-A2T2.

019
Remove the printer adapter card at A-A2U2.
Add a jumper between A-A2U2G13 (Printer on) and A-A2V3B02 (-Power On).
–Set Power to 1 (operator panel).
Probe the failing interface line or lines.

Up   Light: Off
Down Light: On

A-A2T2U07 (–Fire tier 1)
A-A2T2U10 (–Fire tier 2)
A-A2T2U12 (–Fire tier 3)
A-A2T2U09 (–Fire tier 4)
A-A2T2U11 (–Fire tier 5)
Are the lights correct?
Y N

020
Bad card A-A2U2.

021
Bad cable at location A-A2V5.
---or---
Bad net on I/O board A2 for one or more of the –Fire tier 1-5 interface lines (FSL Volume D, PT003)..

022
One or more of the interface lines –Fire tier 1-5 is not at the expected level?.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
–Set printer Power On (printer).
–Return to the Main Menu and run TU Select option.
–Select the Line Printer option.
–Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, (Step 022 continues)

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MAP 0822-4

L M

(Step 022 continued)
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

023
(Entry Point E)
Probe A-A2T2U04 (-Home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **024**
> Probe A-A2T2U04 (-Home).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**
>
> > **025**
> > Bad card A-A2T2.

026
Run TU select and loop on diagnostic test TE296.
Probe A-A2T2U04 (-Home).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **027**
> -Press the ATTN key to stop the test loop.
> **Is the printer being serviced using concurrent maintenance?**
> **Y N**
>
> > **028**
> > Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> > Check continuity between D-B4J11 and A-A2T2U04(-Home).
> > **Was continuity OK?**
> > **Y N**
> >
> > > **029**
> > > Bad cable at location A-A2V4.
> > > ---or---
> > > Bad -Home net on I/O board A2 (FSL Volume D, PT003).
> >
> > **030**
> > The -Home interface line is not at the expected level.
> > Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
> > Reinstall any cables removed earlier.
> > Reinstall any logic cards removed earlier.
> > -Set Power to 1 (operator panel).
> > -Set printer Power to On (printer).
> > -Set Mode Selector to the Proc Run position (CE panel).
> > -Set Address/Data switches to the X'FF00' position.
> > (Step 030 continues)

(Step 030 continued)
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

031
The -Home interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.
(Step 031 continues)

(Step 031 continued)

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

032
Bad card A-A2T2.

033
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2U04 (-Home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

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             MAP 0822-6

S T
6 6

B U
1

MAP 0822-7

034
The -Home interface line is not at the expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

035
**Is the printer being serviced using concurrent
maintenance?**
Y N

  036
  Remove the printer adapter card at A-A2T2.
  -Set Power to 1 (operator panel).
  Probe A-A2T2U04 (-Home).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    037
    Bad card A-A2T2.

038
Bad cable at location A-A2V4.
---or---
Bad -Home net on I/O board A2 (FSL Volume D,
PT003).

039
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Home net on I/O board A2

040
(Entry Point D)
Probe A-A2T2U06 (-Impression CTL SS).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  041
  Probe A-A2T2U06 (-Impression CTL SS).

  Up   Light: On or flashing
  Down Light: Ignore

  Are the lights correct?
  Y N

    042
    Bad card A-A2T2.

  043
  Run TU select and loop on diagnostic test TE296.
  Probe A-A2T2U06 (-Impression CTL SS).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

U

9 9 8
V W X

MAP 0822-7

044

-Press the ATTN key to stop the test loop.
Is the printer being serviced using concurrent
maintenance?
Y N

  045
  Disconnect the printer interface cable at the system
  cable tower, location D-B4.   See 5340 MLM
  (08-400).
  Check continuity between D-B4G08 and
  A-A2T2U06(-Impression CTL SS).
  Was continuity OK?
  Y N

    046
    Bad cable at location A-A2V4.
    ---or---
    Bad -Impression CTL SS net on I/O board A2
    (FSL Volume D, PT003).

  047
  The -Impression CTL SS interface line is not at the
  expected level.
  Record the indicated error or symptom for use in the
  3262 Line Printer Entry MAP.
  Reinstall any cables removed earlier.
  Reinstall any logic cards removed earlier.
  -Set Power to 1 (operator panel).
  -Set printer Power to On (printer).
  -Set Mode Selector to the Proc Run position (CE
  panel).
  -Set Address/Data switches to the X'FF00' position.
  -Set MSIPL switch to the diskette position (CE
  panel).
  -Set CSIPL switch to the diskette position (CE
  panel).
  -Set all other CE panel switches to their down
  positions.
  Insert diskette DIAGB1.
  -Press Load switch (operator panel).
  -Select the TU Select option.
  -Select the Line Printer option.
  -Select TE217 which loads the line printer functional
  (Step 047 continues)

(Step 047 continued)
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point
A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

048
The -Impression CTL SS interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
(Step 048 continues)

Y

W
7

PSS REG ERROR MAP

5340 SYSTEMS UNIT

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V
7

MAP 0822-9

(Step 048 continued)
indicated (FSL Volume D, PT003).

OPTION 2.   Get dedicated maintenance control of
the system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

049
-Press the ATTN key to stop the test loop.
The -Impression CTL SS interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.
-Set printer Power On (printer).

-Return to the Main Menu and run TU select.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

050
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2U06 (-Impression CTL SS).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  051
  The -Impression CTL SS interface line is not at the
  expected level.
  Record the indicated error or symptom for use in the
  3262 Line Printer Entry MAP.
  Reinstall any cables removed earlier.
  Reinstall any logic cards removed earlier.
  -Set printer Power On (printer).
  -Return to the Main Menu and run TU Select option.
  -Select the Line Printer option.
  -Select TE217 which loads the line printer functional
  microcode into the printer controller.

  Go to the 3262 Line Printer Entry MAP 0010, Entry
  Point A.

052
**Is the printer being serviced using concurrent
maintenance?**
Y N

1
0
Z
A

1
0
A
A

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MAP 0822-9

A Z A
1 9 A
   A
   9

A
C

PSS REG ERROR MAP

5340 SYSTEMS UNIT

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MAP 0822-10

053
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2U06 (-Impression CTL SS).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   054
   Bad card A-A2T2.

055
Bad cable at location A-A2V4.
---or---
Bad -Impression CTL SS net on I/O board A2
(FSL Volume D, PT003).

056
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Impression CTL SS net on I/O board A2

057
(Entry Point C)
Probe A-A2T2S10 (-Print subscans).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

058
Probe A-A2T2S10 (-Print subscans).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   059
   Bad card A-A2T2.

060
Run TU select and loop on diagnostic test TE296.
Probe A-A2T2S10 (-Print subscans).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   061
   -Press the ATTN key to stop the test loop.
   Is the printer being serviced using concurrent
   maintenance?
   Y N

      062
      Disconnect the printer interface cable at the
      system cable tower, location D-B4. See 5340
      MLM (08-400).
      Check continuity between D-B4G03 and
      A-A2T2S10(-Print subscans).
      Was continuity OK?
      Y N

         063
         Bad cable at location A-A2V4.
         ---or---
         Bad -Print subscans net on I/O board A2 (FSL
         Volume D, PT003).

1 1 1
2 1 1
A A A
B C D E F

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MAP 0822-10

064

The -Print subscans interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

065

The -Print subscans interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

066

-Press the ATTN key to stop the test loop.
The -Print subscans interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.
-Set printer Power On (printer).

-Return to the Main Menu and run TU select.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

067

-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2S10 (-Print subscans).

Up   Light: Off
Down Light: On

(Step 067 continues)

(Step 067 continued)
Are the lights correct?
Y N

068

The -Print subscans interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

069
Is the printer being serviced using concurrent
maintenance?
Y N

070

Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S10 (-Print subscans).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

071
Bad card A-A2T2.

072
Bad cable at location A-A2V4.
---or---
Bad -Print subscans net on I/O board A2 (FSL
Volume D, PT003).

PSS REG ERROR MAP

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MAP 0822-13

073

Bad card A-A2T2

---or---

Bad cable at location A-A2V4.

---or---

Bad -Print subscans net on I/O board A2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0814	A	1	001
0820	A	1	001
0861	A	1	001

001
(Entry Point A)
Probe A-A2T2G10 (-Carriage advance).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This is the Printer Carriage Advance Test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
I/O cables
Printer cable

Are the lights correct?
Y N

  002
  Probe A-A2T2G10 (-Carriage advance).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    003
    Bad card A-A2T2.

4 2
A B

004

Remove the forms from the tractors in the printer.

Run TU select and loop on diagnostic test TE297.

Probe A-A2T2G10 (-Carriage advance).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    005
    Is the printer being serviced using concurrent
    maintenance?
    Y N

        006
        -Press the ATTN key to stop the test loop.
        Disconnect the printer interface cable at the
        system cable tower, location D-B4. See 5340
        MLM (08-400).
        Check continuity between D-B4G07 and
        A-A2T2G10 (-Carriage advance).
        Was continuity OK?
        Y N

            007
            Bad cable at location A-A2V4.
            ---or---
            Bad -Carriage advance net on I/O board A2
            (FSL Volume D, PT003).

008

The -Carriage advance interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

3 3
C D E

13JUL79   PN 8265839
EC 834838   PEC 834773
MAP 0824-2

009

The -Carriage advance interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

010

Is the printer being serviced using concurrent maintenance?

Y N

4
F G

011

-Press the ATTN key to stop the test loop.

Add a jumper between A-A2T2G10 (-Carriage advance) and A-A2T2P08 (Ground).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE269 which is the 'Switch Reg Tiedown Test'.

Did the TU return a result byte of '00100000' (Carriage Interrupt Not Active)?

Y N

012

Remove jumper

Bad card A-A2T2.

013

Remove jumper

The -Carriage go interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the

(Step 013 continues)

(Step 013 continued)
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

014
One of the following interface lines is not at the
expected level:
-Carriage advance
-Carriage go

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
(Step 014 continues)

(Step 014 continued)
further diagnosis of the interface line that was not at
the expected level.

015
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system
cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2G10 (-Carriage advance)

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

016
The -Carriage advance interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

017
Is the printer being serviced using concurrent
maintenance?
Y N

13JUL79   PN 8265839

EC 834838   PEC 834773

5 5
H J   MAP 0824-4

H J
4 4

018
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2G10 (-Carriage advance)

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  019
  Bad card A-A2T2.

020
Bad cable at location A-A2V4.
---or---
Bad -Carriage advance net on I/O board A2 (FSL
Volume D, PT003).

021
Remove jumper
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Carriage advance net on I/O board A2 (FSL
Volume D, PT003).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001
0820	B	4	010
0820	C	6	017
0861	A	1	001
0861	B	4	010
0861	D	9	030
0873	C	6	017
0877	A	1	001
0877	B	4	010

001
(Entry Point A)

If a Data Parity Check has been indicated or if the -Data parity check interface line is not at the expected level, we still want to examine the Data bit 0-7, Parity bit, Strobe and Data Parity Check lines to ensure that they are not causing the problem.

MAP DESCRIPTION:
This is the Data Bit (0-7) and Parity Bit Wrap Error MAP. This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2U2, A-A2T2, Board wiring, System cables

Is the printer being serviced using concurrent maintenance?
Y N

3 2
A B

002

Remove the printer adapter card at A-A2U2.

Add a jumper between A-A2U2G13 (Printer on) and
A-A2V3B02 (-Power On).
-Set Power to 1 (operator panel).

Probe A-A2U2M13 (-Parity bit).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   003
   Remove the printer adapter card at A-A2T2.
   -Set Power to 1 (operator panel).

   Probe A-A2T2M10 (-Parity bit).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      004
      -Set printer Power to Off (printer).
      Leave the System Power on.
      Disconnect the printer interface cable at the
      system cable tower, location D-B4. See 5340
      MLM (08-400).

      Probe A-A2U2M13 (-Parity bit).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

3 3 3
C D E F

005

The -Parity bit interface line is not at the expected level.
Remove all jumpers installed earlier.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

A C D E
1 2 2 2

PRINT DATA ERROR MAP

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006
Remove all jumpers installed earlier.
Bad cable at location A-A2V5.
---or---
Bad -Parity bit net on I/O board A2 (FSL Volume D, PT003).

007
Remove all jumpers installed earlier.
Bad card A-A2T2

008
Remove all jumpers installed earlier.
Bad card A-A2U2

009
The -Parity bit interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1.   While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

(Step 009 continues)

(Step 009 continued)
OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

010
(Entry Point B)

Is the printer being serviced using concurrent maintenance?
Y N

    011
    Remove the printer adapter card at A-A2U2.
    Add a jumper between A-A2U2G13 (Printer on) and
    A-A2V3B02 (-Power On).
    -Set Power to 1 (operator panel).

    Probe the following:

    Up   Light: On
    Down Light: Off

    A-A2U2M04   (-Data bit 0)
    A-A2U2M05   (-Data bit 1)
    A-A2U2M06   (-Data bit 2)
    A-A2U2M07   (-Data bit 3)
    A-A2U2M08   (-Data bit 4)
    A-A2U2M09   (-Data bit 5)
    A-A2U2M10   (-Data bit 6)
    A-A2U2M12   (-Data bit 7)
    Are the lights correct for all of the above?
    Y N

        012
        -Set printer Power to Off (printer).
        Leave the System Power on.
        Disconnect the printer interface cable at the
        system cable tower, location D-B4. See 5340
        MLM (08-400).
        Probe the following:

        Up   Light: Off
        Down Light: Off

        A-A2U2M04   (-Data bit 0)
        A-A2U2M05   (-Data bit 1)
        A-A2U2M06   (-Data bit 2)
        A-A2U2M07   (-Data bit 3)
        (Step 012 continues)

(Step 012 continued)
A-A2U2M08   (-Data bit 4)
A-A2U2M09   (-Data bit 5)
A-A2U2M10   (-Data bit 6)
A-A2U2M12   (-Data bit 7)
Are the lights correct for all of the above?
Y N

    013
    Remove all jumpers installed earlier.
    Bad cable at location A-A2V5.
    ---or---
    Bad net on I/O board for one or more of the lines
    'Data bits 0-7' (FSL Volume D, PT003).

014
Remove all jumpers installed earlier.
One or more of the interface lines 'Data bits 0-7', is not
at the expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 014 continues)

5 5
G H

(Step 014 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

015
Remove all jumpers installed earlier.
Bad card A-A2U2

016
One or more of the following interface lines is not at the
expected level:
Data bit 0-7

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
(Step 016 continues)

(Step 016 continued)
further diagnosis of the interface line that was not at
the expected level.

017
(Entry Point C)
Is the printer being serviced using concurrent maintenance?
Y N

   018
   Probe A-A2U2M03 (-Strobe).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      019
      The -Strobe interface line is not at the expected level.
      Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
      Reinstall any cables removed earlier.
      Reinstall any logic cards removed earlier.
      -Set Power to 1 (operator panel).
      -Set printer Power to On (printer).
      -Set Mode Selector to the Proc Run position (CE panel).
      -Set Address/Data switches to the X'FF00' position.
      -Set MSIPL switch to the diskette position (CE panel).
      -Set CSIPL switch to the diskette position (CE panel).
      -Set all other CE panel switches to their down positions.
      Insert diskette DIAGB1.
      -Press Load switch (operator panel).
      -Select the TU Select option.
      -Select the Line Printer option.
      -Select TE217 which loads the line printer functional microcode into the printer controller.

      Go to the 3262 Printer Entry MAP 0010, Entry Point A.

      (Step 019 continues)

(Step 019 continued)
If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

020
Remove the printer adapter card at A-A2U2.

Add a jumper between A-A2U2G13 (Printer on) and A-A2V3B02 (-Power On).

-Set Power to 1 (operator panel).

Probe A-A2U2M03 (-Strobe).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   021
   Probe A-A2T2J13 (-Strobe).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

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J K

8 7 7
L M N

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022
Remove all jumpers installed earlier.
The -Strobe interface line is not at the expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

023
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).

Probe A-A2T2J13 (-Strobe).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  024
  -Set printer Power to Off (printer).
  Leave the System Power on.
  Disconnect the printer interface cable at the system
  cable tower, location D-B4.   See 5340 MLM
  (08-400).

  Probe A-A2U2M03 (-Strobe).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    025
    Remove all jumpers installed earlier.
    The -Strobe interface line is not at the expected
    level.
    Record the indicated error or symptom for use in
    the 3262 Line Printer Entry MAP.
    Reinstall any cables removed earlier.
    Reinstall any logic cards removed earlier.
    -Set Power to 1 (operator panel).
    -Set printer Power to On (printer).
    -Set Mode Selector to the Proc Run position (CE
    panel).
    -Set Address/Data switches to the X'FF00'
    position.
    -Set MSIPL switch to the diskette position (CE
    panel).
    -Set CSIPL switch to the diskette position (CE
    (Step 025 continues)

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PRINT DATA ERROR MAP

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(Step 025 continued)
 panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer
functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry
Point A.

If the 3262 Line Printer MAPs do not find the
problem, return to this step in this MAP and
continue with the probable cause.

The probable cause is either a bad card at
A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the
interface line indicated (FSL Volume D,
PT003).

026
Remove all jumpers installed earlier.
Bad cable at location A-A2V5.
---or---
Bad -Strobe net on I/O board A2 (FSL Volume D,
PT003).

027
Remove all jumpers installed earlier.
Bad card A-A2T2

028
Remove all jumpers installed earlier.
Bad card A-A2U2

029
The -Strobe interface line is not at the expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1.   While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

030
(Entry Point D)

Probe A-A2T2S07(-Data parity check).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

| | **031**
| | **Is the printer being serviced using concurrent maintenance?**
| | Y N
| | |
| | | **032**
| | | Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
| | |
| | | Check continuity between the following points:
| | |
| | | D-B4B02 and A-A2U2M04 (-Data bit 0)
| | | D-B4B03 and A-A2U2M05 (-Data bit 1)
| | | D-B4B04 and A-A2U2M06 (-Data bit 2)
| | | D-B4B05 and A-A2U2M07 (-Data bit 3)
| | | D-B4B06 and A-A2U2M08 (-Data bit 4)
| | | D-B4B07 and A-A2U2M09 (-Data bit 5)
| | | D-B4B08 and A-A2U2M10 (-Data bit 6)
| | | D-B4B09 and A-A2U2M12 (-Data bit 7)
| | | D-B4B10 and A-A2U2M13 (-Parity bit)
| | | D-B4D06 and A-A2U2M03 (-Strobe)
| | | D-B4D05 and A-A2T2S07 (-Data parity check)
| | | **Was continuity OK?**
| | | Y N
| | | | |

```
1 1 1 1
1 0 0 0
R S T U
```

033

Remove all jumpers installed earlier.

Bad cable at location A-A2V5.

---or---

Bad net on I/O board A2 for -Strobe, -Data parity check or one or more of the lines Data bit 0-7,Parity bit (FSL Volume D, PT003).

034

Remove all jumpers installed earlier.

One or more of the following interface lines is not at the expected level:

    -Strobe
    -Data parity check
    Data bit 0-7,Parity bit

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

(Step 034 continues)

(Step 034 continued)

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

035

One or more of the following interface lines is not at the expected level:

-Strobe
-Data parity check
Data bit 0-7,Parity bit

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

036
Bad card A-A2T2

FORMS JAM TEST MAP

MAP 0828-1

5340 SYSTEMS UNIT

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001
0871	A	1	001

001
(Entry Point A)
Probe A-A2T2M04 (-Forms pulse).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This is the Printer Forms Jam Test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Are the lights correct?
Y N

002
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2M04 (-Forms pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

3 2 2
A B C

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EC 834838   PEC 834773

MAP 0828-1

003
Bad card A-A2T2.

004
Is the printer being serviced using concurrent maintenance?
Y N

  005
  Check continuity between D-B4G06 and A-A2T2M04(-Forms pulse).

  Was continuity OK?
  Y N

    006
    Bad cable at location A-A2V4.
    ---or---
    Bad -Forms pulse net on I/O board A2 (FSL Volume D, PT003).

  007
  The -Forms pulse interface line is not at the expected level.
  Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
  Reinstall any cables removed earlier.
  Reinstall any logic cards removed earlier.
  -Set Power to 1 (operator panel).
  -Set printer Power to On (printer).
  -Set Mode Selector to the Proc Run position (CE panel).
  -Set Address/Data switches to the X'FF00' position.
  -Set MSIPL switch to the diskette position (CE panel).
  -Set CSIPL switch to the diskette position (CE panel).
  -Set all other CE panel switches to their down positions.
  Insert diskette DIAGB1.
  -Press Load switch (operator panel).
  -Select the TU Select option.
  -Select the Line Printer option.
  -Select TE217 which loads the line printer functional
  (Step 007 continues)

(Step 007 continued)
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

008
The -Forms pulse interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
(Step 008 continues)

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A
1

(Step 008 continued)
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

009
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2M04 (-Forms pulse).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    010
    The -Forms pulse interface line is not at the expected level.
    Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
    Reinstall any cables removed earlier.
    Reinstall any logic cards removed earlier.
    -Set printer Power On (printer).
    -Return to the Main Menu and run TU Select option.
    -Select the Line Printer option.
    -Select TE217 which loads the line printer functional microcode into the printer controller.

    Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

011
Is the printer being serviced using concurrent maintenance?
Y N

E F

E F   MAP 0828-3

012
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2M04 (-Forms pulse).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    013
    Bad card A-A2T2.

014
Bad cable at location A-A2V4.
---or---
Bad -Forms pulse net on I/O board A2 (FSL Volume D, PT003).

015
Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Forms pulse net on I/O board A2 (FSL Volume D, PT003).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001
0869	A	1	001

001
(Entry Point A)
Probe A-A2T2S04 (-Hammer echo return).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This is the Printer Hammer Echo Return test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
System cables

Are the lights correct?
Y N

002
Probe A-A2T2S04 (-Hammer echo return).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

003
Bad card A-A2T2.

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MAP 0830-1

3 2
A B

004

Is the printer being serviced using concurrent maintenance?

Y N

> **005**
>
> Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
> Check continuity between D-B4B12 and A-A2T2S04 (-Hammer echo return).
> **Was continuity OK?**
>
> **Y N**
>
> > **006**
> >
> > Bad cable at location A-A2V5.
> > ---or---
> > Bad -Hammer echo return net on I/O board A2 (FSL Volume D, PT003).
>
> **007**
> Check continuity between the following points:
>
> ```
> D-B4D09 and A-A2T2U07 (-Fire tier 1)
> D-B4D10 and A-A2T2U10 (-Fire tier 2)
> D-B4D11 and A-A2T2U12 (-Fire tier 3)
> D-B4D12 and A-A2T2U09 (-Fire tier 4)
> D-B4D13 and A-A2T2U11 (-Fire tier 5)
> ```
> **Was continuity OK?**
>
> **Y N**
>
> > **008**
> >
> > Bad cable at location A-A2V5.
> > ---or---
> > Bad net on I/O board A2 for one or more of the interface lines Fire tier 1-5 (FSL Volume D, PT003)..

009

The -Hammer echo return interface line is not at the expected level.

NOTE:

This problem may be serviced as an Any Hammer On check in the 3262 Printer MAPs.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

010
The -Hammer echo return or a Fire tier 1-5 interface line is not at the expected level.

NOTE:

This problem may be serviced as an Any Hammer On check in the 3262 Printer MAPs.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

011
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2S04 (-Hammer echo return).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   012
   The -Hammer echo return interface line is not at the expected level.

   NOTE:

   If -Hammer echo return is active during -Not print time (A-A2T2G12 -Not print time active), the problem may be serviced as an any hammer on check in the 3262 Line Printer MAPs.

   Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
   Reinstall any cables removed earlier.
   Reinstall any logic cards removed earlier.
   -Set printer Power On (printer).
   -Return to the Main Menu and run TU Select option.
   -Select the Line Printer option.
   -Select TE217 which loads the line printer functional microcode into the printer controller.

   Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

013
Is the printer being serviced using concurrent maintenance?
Y N

4 4
E F

014
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2S04 (-Hammer echo return).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  015
  Bad card A-A2T2.

016
Bad cable at location A-A2V5.
---or---
Bad -Hammer echo return net on I/O board A2 (FSL
Volume D, PT003).

017
Bad card A-A2T2
---or---
Bad cable at location A-A2V5.
---or---
Bad -Hammer echo return net on I/O board A2 (FSL
Volume D, PT003).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001

001
(Entry Point A)
Run TU select and loop on diagnostic test TE268.

Probe A-A2T2G13 (+POR (Power on reset)).

Up   Light: On or flashing
Down Light: On or flashing

MAP DESCRIPTION:
This is the Printer Reset Test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
I/O cables
Printer cable

Are the lights correct?
Y N

  002
  Probe A-A2T2G13 (+POR (Power on reset)).

  Up   Light: Off
  Down Light: Flashing

  Are the lights correct?
  Y N

4 4 2
A B C

C
1

G   MAP 0832-2

003
Press the ATTN key on the system console to stop the
test loop.
Probe A-A2T2G13 (+POR (Power on reset)).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  004
  Probe A-A2T2G13 (+POR (Power on reset)).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    005
    (Entry Point B)
    **Is the printer being serviced using concurrent
    maintenance?**
    Y N

      006
      Disconnect the printer interface cable at the
      system cable tower, location D-B4. See 5340
      MLM (08-400).
      Check continuity between D-B4J06 and
      A-A2T2G13(+POR (Power on reset)).
      Was continuity OK?
      Y N

        007
        Bad cable at location A-A2V4.
        ---or---
        Bad +POR (Power on reset) net on I/O
        board A2 (FSL Volume D, PT003).

008
The +POR (Power on reset) interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

3 3 3
D E F G

009

The +POR (Power on reset) interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

010

Bad card A-A2T2

011

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2G13 (+POR (Power on reset)).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?

Y N

012

The +POR (Power on reset) interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

013

Is the printer being serviced using concurrent maintenance?

Y N

014
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2G13 (+POR (Power on reset)).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  015
  Bad card A-A2T2.

016
Bad cable at location A-A2V4.
---or---
Bad +POR (Power on reset) net on I/O board A2
(FSL Volume D, PT003).

017
The +POR (Power on reset) interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
(Step 017 continues)

(Step 017 continued)
---or---
A-A2U2
---or---
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of
the system and return to this MAP, Entry Point A,
for further diagnosis of the interface line that was
not at the expected level.

018
-Press the ATTN key to stop the test loop.
Go to Page 2, Step 005, Entry Point B.

019
Press ATTN key on the system console to stop test
loop.

The +POR (Power on reset) interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry
Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001

001
(Entry Point A)
Probe A-A2T2P02 (-Hammer sample).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This MAP is the Hammer Sample Test MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
I/O cables
Printer cable

Are the lights correct?
Y N
```
| 002
| Gating used:
|
| Set probe switches.
| -Gate Ref to GND.
| -Latch to Down.
|
| -Select the line printer exercisors and run the matrix
|  print test.
|
| -Press the Stop/Reset switch to reset any check,
|  then press the Ready switch to make the printer
|  ready.
|
| (Step 002 continues)
```

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4
A

(Step 002 continued)
Probe A-A2T2P02 (-Hammer sample).

-Press the Enter key on the console.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  003
  Bad card A-A2T2.

004
Is the printer being serviced using concurrent maintenance?
Y N

  005
  Disconnect the printer interface cable at the system
  cable tower, location D-B4.   See 5340 MLM
  (08-400).
  Check   continuity   between   D-B4D07   and
  A-A2T2P02(-Hammer sample).
  Was continuity OK?
  Y N

    006
    Bad cable at location A-A2V5.
    ---or---
    Bad -Hammer sample net on I/O board A2 (FSL
    Volume D, PT003).

  007
  Check continuity between the following points:

      D-B4D09 and A-A2T2U07 (-Fire tier 1)
      D-B4D10 and A-A2T2U10 (-Fire tier 2)
      D-B4D11 and A-A2T2U12 (-Fire tier 3)
      D-B4D12 and A-A2T2U09 (-Fire tier 4)
      D-B4D13 and A-A2T2U11 (-Fire tier 5)
  Was continuity OK?
  Y N

3 3 3
B C D

008

Bad cable at location A-A2V5.

---or---

Bad net on I/O board A2 for one or more of the interface lines Fire tier 1-5 (FSL Volume D, PT003).

009

The -Hammer sample interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

010

The -Hammer sample or a Fire tier 1-5 interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

HAMMER SAMPLE TEST

5340 SYSTEMS UNIT

011
-Set printer Power to Off (printer).
Leave the System Power on.
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
Probe A-A2T2P02 (-Hammer sample).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **012**
> The -Hammer sample interface line is not at the expected level.
> Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
> Reinstall any cables removed earlier.
> Reinstall any logic cards removed earlier.
> -Set printer Power On (printer).
> -Return to the Main Menu and run TU Select option.
> -Select the Line Printer option.
> -Select TE217 which loads the line printer functional microcode into the printer controller.
>
> Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

013
Is the printer being serviced using concurrent maintenance?
Y N

E F

014
Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2P02 (-Hammer sample).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **015**
> Bad card A-A2T2.

016
Bad cable at location A-A2V5.
---or---
Bad -Hammer sample net on I/O board A2 (FSL Volume D, PT003).

017
The -Hammer sample interface line is not at the expected level.
Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
(Step 017 continues)

(Step 017 continued)

---or---

A-A2U2

---or---

an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0800	A	1	001
0820	A	1	001
0859	A	1	001
0883	A	1	001

001
(Entry Point A)
Probe A-A2T2U05 (+Cable interlock).

Up   Light: Off
Down Light: On

MAP DESCRIPTION:
This is the Cable Interlock MAP. This MAP aids you in locating the cause of a cable interlock problem between the line printer and the attachment.

START CONDITIONS:
System and printer power are on.
Ensure that the belt and ribbon are installed and the forms are loaded in the printer.
Check that the throat is closed and the belt cover is fastened tightly.

LOGIC CARDS TESTED:
A-A2S2 and A-A2T2

Are the lights correct?
Y N

  002
  -Set printer Power to Off (printer).
  Leave the System Power on.

  Check the printer interface cable connections at the system cable tower. See system MLM (08-400).

  -Set printer Power to On (printer).

  Probe A-A2T2U05 (+Cable interlock).

  Up   Light: Off
  Down Light: On
  (Step 002 continues)

4
A

(Step 002 continued)

Are the lights correct?
Y N

> **003**
> (Entry Point B)
>
> **Is the printer being serviced using concurrent maintenance?**
> Y N
>
>> **004**
>> Check that the cables in the following list are seated correctly.
>>
>>   Cable at location A-A2V3 in the 5340
>>   Cable at location A-A2V4 in the 5340
>>   Cable at location A-A2V5 in the 5340
>>   See 5340 MLM (08-100)
>>
>> -Set Power to 1 (operator panel).
>>
>> Probe A-A2T2U05 (+Cable interlock).
>>
>> Up   Light: Off
>> Down Light: On
>>
>> **Are the lights correct?**
>> Y N
>>
>>> **005**
>>> Install the following jumpers:
>>>
>>>   A-A2V3D04 to A-A2V3B13
>>>   A-A2V4D05 to A-A2V4B13
>>>   A-A2V5D03 to A-A2V5B13
>>>
>>> -Set Power to 1 (operator panel).
>>>
>>> Probe A-A2T2U05 (+Cable interlock).
>>>
>>> Up   Light: Off
>>> Down Light: On
>>>
>>> (Step 005 continues)

4 4 4
B C D

(Step 005 continued)
Are the lights correct?
Y N

  006
  Remove all jumpers installed earlier.
  Bad +Cable interlock net on I/O board A2 (FSL
  Volume D, PT003).

007
Remove all jumpers installed earlier.

Check continuity between the following points:

    D-B4B13 and A-A2V5B13 (Cable Interlock 1)
    D-B4D03 and A-A2V5D03 (Cable Interlock 2)
    D-B4G13 and A-A2V4B13 (Cable Interlock 3)
    D-B4J05 and A-A2V4D05 (Cable Interlock 4)
    D-B5B13 and A-A2V3B13 (Cable Interlock 5)
    D-B5D04 and A-A2V3D04 (Cable Interlock 6)

Was continuity OK?
Y N

  008
  Bad cable at location A-A2V3.
  ---or---
  Bad cable at location A-A2V4.
  ---or---
  Bad cable at location A-A2V5.

009
A +Cable interlock check is indicated.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
(Step 009 continues)

(Step 009 continued)
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

010
Go to MAP 0801, Entry Point A and run the printer MDI diagnostics to verify the fix.

011
A +Cable interlock check is indicated.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.
(Step 011 continues)

(Step 011 continued)

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

012
Go to MAP 0801, Entry Point A and run the printer MDI diagnostics to verify the fix.

013
Bad card A-A2T2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0887	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP tests the possibility that one of three interface lines '-Hammer echo return', '+POR (Power on reset)' or '-Close contactor' is open. If necessary it will go to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
Printer cable
I/O cables

Is the printer being serviced using concurrent maintenance?
Y N

002
Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).
Check continuity between the following points:

    D-B4J06 and A-A2T2G13 (+POR (Power on reset))
    D-B4J09 and A-A2T2S05 (-Close contactor)
Was continuity OK?
Y N

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3 2 2
A B C

003

Bad cable at location A-A2V4.

---or---

Bad net on I/O board A2 for (+POR (Power on reset)
) or

(-Close contactor) (FSL Volume D, PT003).

004

Check continuity between D-B4B12 and A-A2T2S04
(-Hammer echo return).

Was continuity OK?

Y N

005

Bad cable at location A-A2V5.

---or---

Bad -Hammer echo return net on I/O board A2 (FSL
Volume D, PT003).

006

This problem may be serviced as an Any Hammer On
check in the 3262 Printer MAPs.

Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set Power to 1 (operator panel).

-Set printer Power to On (printer).

-Set Mode Selector to the Proc Run position (CE panel).

-Set Address/Data switches to the X'FF00' position.

-Set MSIPL switch to the diskette position (CE panel).

-Set CSIPL switch to the diskette position (CE panel).

-Set all other CE panel switches to their down
positions.

Insert diskette DIAGB1.

-Press Load switch (operator panel).

-Select the TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

(Step 006 continues)

The contactor may be stuck closed.

The failing test indicates that one of the following
interface lines may not be at the expected level:

    -Hammer echo return
    +POR (Power on reset)
    -Close contactor

A
1

(Step 006 continued)
If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

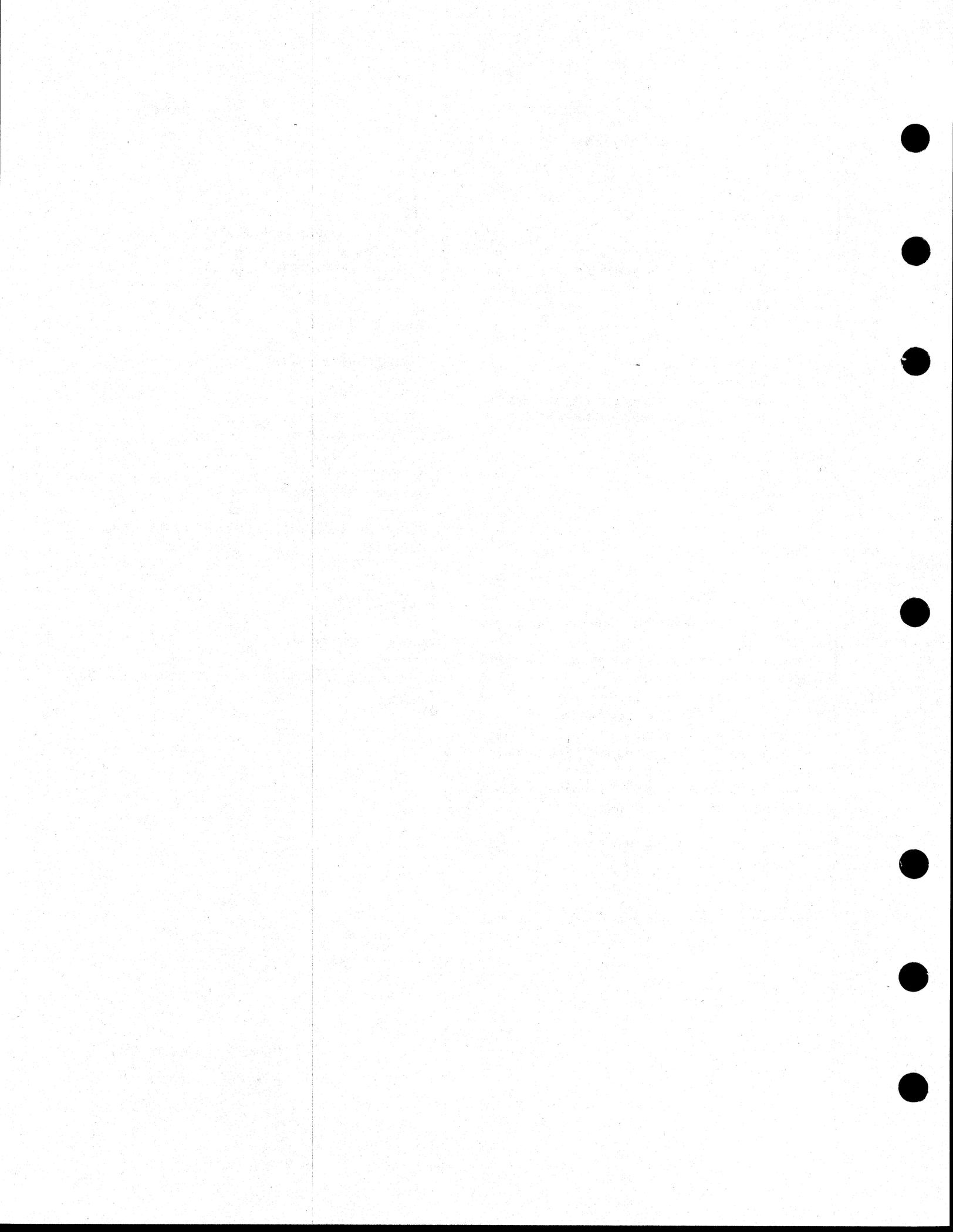The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

007
This problem may be serviced as an Any Hammer On check in the 3262 Printer MAPs.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional microcode into the printer controller.
Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for
(Step 007 continues)

The contactor may be stuck closed.
The failing test indicates that one of the following interface lines may not be at the expected level:
```
    -Hammer echo return
    +POR (Power on reset)
    -Close contactor
```

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EC 834838   PEC 834773

MAP 0840-3

(Step 007 continued)
further diagnosis of the interface line that was not at
the expected level.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0820	A	1	001
0820	B	3	008
0820	C	4	015

001
(Entry Point A)

Is the printer being serviced using concurrent maintenance?
Y N

> **002**
> Disconnect the printer interface cables at the system cable tower, location D-B5.   See 5340 MLM (08-400).
> Measure the resistance between A-A2T2M07 and A-A2T2P08 (-Thermal Check 1 and Ground).
>
> **Was a resistance of between 300 and 900 ohms measured?**
> **Y N**
>
>> **003**
>> Bad card A-A2T2.

MAP DESCRIPTION:
This is the Thermal check and Carriage Pedestal Check MAP.
This MAP finds the failing FRU or, if necessary, goes to the 3262 Line Printer Entry MAP.

START CONDITIONS:
The system and printer power are on. Ensure that the type belt and the ribbon are installed and that the forms are loaded in the printer. Check that the throat and belt covers are closed.

LOGIC CARDS TESTED:
A-A2T2
Board wiring
I/O cables

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004

Check continuity between D-B5B03 and A-A2T2M07
(-Thermal Check 1).
Was continuity OK?
Y N

> **005**
>
> Bad cable at location A-A2V3.
> ---or---
> Bad -Thermal Check 1 net on I/O board A2 (FSL
> Volume D, PT003).

006

The -Thermal Check 1 interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
(Step 006 continues)

(Step 006 continued)
an open or shorted interface line for the interface
line indicated (FSL Volume D, PT003).

007

The -Thermal Check 1 interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Record this MAP and step number.
Reinstall any cables removed earlier.
-Set printer Power On (printer).
-Return to the Main Menu and run TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.
Several options are available at this time for further
diagnosis. They are:

OPTION 1. While still in concurrent maintenance
mode, go to the 3262 Line Printer Entry MAP 0010,
Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the
system and return to this MAP, Entry Point A, for
further diagnosis of the interface line that was not at
the expected level.

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MAP 0842-2

008
(Entry Point B)

Is the printer being serviced using concurrent maintenance?
Y N

⎢
⎢   **009**
⎢   Disconnect the printer interface cables at the system
⎢   cable tower, location D-B5.   See 5340 MLM
⎢   (08-400).
⎢   Measure the resistance between A-A2T2M08 and
⎢   A-A2T2P08 (-Thermal Check 2 and Ground).
⎢   **Was a resistance of between 300 and 900 ohms
⎢   measured?**
⎢   Y N
⎢
⎢   ⎢   **010**
⎢   ⎢   Bad card A-A2T2.
⎢   ⎢
⎢   **011**
⎢   Check   continuity   between   D-B5D05   and
⎢   A-A2T2M08 (-Thermal Check 2).
⎢   **Was continuity OK?**
⎢   Y N
⎢
⎢   ⎢   **012**
⎢   ⎢   Bad cable at location A-A2V3.
⎢   ⎢   ---or---
⎢   ⎢   Bad -Thermal Check 2 net on I/O board A2 (FSL
⎢   ⎢   Volume D, PT003).

013
The -Thermal Check 2 interface line is not at the
expected level.
Record the indicated error or symptom for use in the
3262 Line Printer Entry MAP.
Reinstall any cables removed earlier.
Reinstall any logic cards removed earlier.
-Set Power to 1 (operator panel).
-Set printer Power to On (printer).
-Set Mode Selector to the Proc Run position (CE panel).
-Set Address/Data switches to the X'FF00' position.
-Set MSIPL switch to the diskette position (CE panel).
-Set CSIPL switch to the diskette position (CE panel).
-Set all other CE panel switches to their down
 positions.
Insert diskette DIAGB1.
-Press Load switch (operator panel).
-Select the TU Select option.
-Select the Line Printer option.
-Select TE217 which loads the line printer functional
microcode into the printer controller.

Go to the 3262 Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem,
return to this step in this MAP and continue with the
probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line
indicated (FSL Volume D, PT003).

4
C D

014

The -Thermal Check 2 interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Record this MAP and step number.

Reinstall any cables removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Several options are available at this time for further diagnosis. They are:

OPTION 1. While still in concurrent maintenance mode, go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

If the 3262 Line Printer MAPs do not find the problem, return to this step in this MAP and continue with the probable cause.

The probable cause is either a bad card at A-A2T2
---or---
A-A2U2
---or---
an open or shorted interface line for the interface line indicated (FSL Volume D, PT003).

OPTION 2. Get dedicated maintenance control of the system and return to this MAP, Entry Point A, for further diagnosis of the interface line that was not at the expected level.

015

(Entry Point C)

-Set printer Power to Off (printer).

Leave the System Power on.

Disconnect the printer interface cable at the system cable tower, location D-B4. See 5340 MLM (08-400).

Probe A-A2T2M09 (-Carriage Pedestal Check).

```
Up    Light:  Off
Down  Light:  On
```

Are the lights correct?

Y N

016

The -Carriage Pedestal Check interface line is not at the expected level.

Record the indicated error or symptom for use in the 3262 Line Printer Entry MAP.

Reinstall any cables removed earlier.

Reinstall any logic cards removed earlier.

-Set printer Power On (printer).

-Return to the Main Menu and run TU Select option.

-Select the Line Printer option.

-Select TE217 which loads the line printer functional microcode into the printer controller.

Go to the 3262 Line Printer Entry MAP 0010, Entry Point A.

017

Is the printer being serviced using concurrent maintenance?

Y N

5 5
E F

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EC 834838   PEC 834773

MAP 0842-4

018

Remove the printer adapter card at A-A2T2.
-Set Power to 1 (operator panel).
Probe A-A2T2M09 (-Carriage Pedestal Check).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   019
   Bad card A-A2T2.

020

Bad cable at location A-A2V4.
---or---
Bad -Carriage Pedestal Check net on I/O board A2
(FSL Volume D, PT003).

021

Bad card A-A2T2
---or---
Bad cable at location A-A2V4.
---or---
Bad -Carriage Pedestal Check net on I/O board A2
(FSL Volume D, PT003).
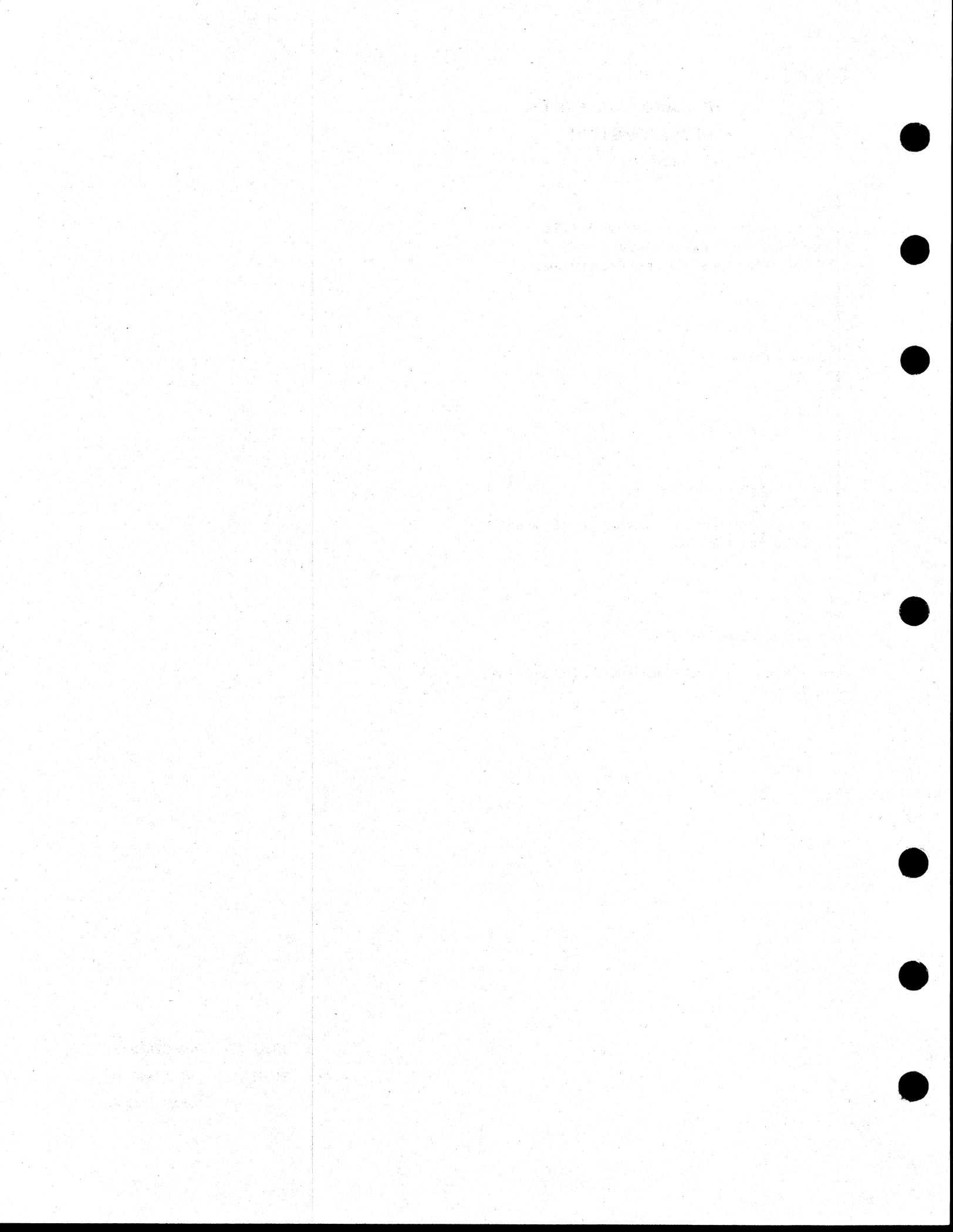
ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0149	A	1	001
1515	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	005	0101	B
5	011	0101	B
7	018	0101	B
5	009	0199	A
5	008	1013	A
6	015	1013	A

001
(Entry Point A)

```
              Disk Entry MAP
* * * * * * * * * * * * * * * * *
*                               *
*        General Information     *
*                               *
* * * * * * * * * * * * * * * * *
```

** Disk drive location:
Drive A is the upper drive; drive B (if installed) is the lower drive.

If 3rd/4th 62PC trailer sub-assembly is installed then drive C is lower drive and drive D (if installed) is the upper drive.

** ACTB identification
There are two ACTBs for each disk drive:
1. The drive motor assembly ACTB (10-080).
2. The fan assembly ACTB (10-090).

(Step 001 continues)

MAP DESCRIPTION:
This MAP instructs the CE to run the MDI tests for the disk.

START CONDITIONS:
The CE decided that the failing area was the disk.

LOGIC CARDS TESTED:
None

(Step 001 continued)

** Disk attachment or drive failure

CAUTION

When any disk attachment or disk drive cards fail, it is possible that some disk data has been destroyed. Run Disk Analyze program (99-055) to verify the disks, and correct any errors before returning the system to the operator. If the MAPs indicate that the disk enclosure is bad, run the Disk Analyze program (99-055) to see if the problem can be fixed by correcting any bad sectors on the disk.

** Disk sector IDs

CAUTION

A disk wrap error A1A00005, A1A00105, A1A00205, A1A00305 may still occur, even after the failing FRU has been replaced, if the failing FRU caused sector IDs to be written on the disk incorrectly.

If the failing FRU has caused bad sector IDs to be written on the disk, the disk MAPs may fail with a Read ID error, until the bad IDs have been corrected.

To identify the incorrect sector IDs, run option 1 of the Analyze program (99-055). The IDs may be updated using option 2 of Analyze.

** Card swapping on multi drive systems
In machines with multi disk drives, cards on a good drive may be swapped for suspected bad cards on the failing drive.   To isolate a problem between the attachment and a disk drive, dedicated cables (A-A2A4, A-A2Z1, A-A2B4, OR A-A2B5) may be temporarily swapped.
(Step 001 continues)

(Step 001 continued)

** The disk MDI MAPs are in three sections:
-Channel adapter good machine path: MAP 1001.
-Common adapter good machine path: MAPs 1015.
-Disk drive good machine path: MAPs 1040, 1041, and 1042.
The sections are run in the order in which they are listed. If either of the first two sections do not fix the problem, the section that follows may be run using the Main Menu MDI Special option (99-090).

** Intermittent failures
The 62PC disk intermittent failure MDI MAP is 1058. This MAP runs tests to find intermittent disk problems. The 62PC disk error log MAP is 8301. If the disk intermittent MAP is unable to find the problem and there are ERAP entries for the disk, then refer to this MAP and Maintenance Manual section 83-000.

** Before running the MAPs, verify that the actuator lock is fully disengaged, and reseat all disk cards and cables:
Attachment: A-A2E2, A-A2D2, A-A2C2, and cables A-A2A5, A-A2A4, A-A2Z1, A-A2B4, A-A2B5. .
Disk drive: All cards and cables on board E-A1, E-B1, E-C1, or E-D1.

** The disk should normally be powered off and on again before running the disk MDI MAPs so the MAPs can start from known conditions. The MAPs may not run correctly if this is not done. The CE probe should not be connected on the disk drive boards (E-A1, E-B1, E-C1, OR E-D1) while the DISK MDI MAPs are running, because this may cause the MAPs to fail.

** Some disk problems will cause a disk drive to use the brake, causing the system to remove the AC power from that set of drive motors (Either drives A/B or drives C/D). The two sets of drives power down independently of each other. The disk MAPs will find
(Step 001 continues)

(Step 001 continued)
the failing drive, but the problem can be fixed more quickly if the failing drive is known. If either set of disks are not turning after power has been on for one minute, power off and power on again. The failing drive is the one which stops first. Run the MDI MAPs for that drive first.

** Proc Checks in the disk MDI MAPs. If a Processor Check occurs while the disk diagnostics are being run, the cause is a system I/O channel problem or a bad attachment card (A-A2E2, A-A2D2, or A-A2C2).

** Intermittent disk problems.
If the disk MDI MAPs run without errors and if an intermittent problem is suspected, go to Entry Point F of this MAP.
If this is your first time through the disk MAPs, read the above information. If you have read the information, you may continue.
Were you instructed to go to Entry Point F?
Y N

  002
  Have you read the above information?
  Y N

    003
    Read the above information.

  004
  (Entry Point B)

  -Set Power to 0 (operator panel).
  -Set Power to 1 (operator panel).
  To perform a CSIPL from the diskette and bypass the wrap tests, do the following:

  -Set Mode Selector to Proc Run (CE panel).
  -Set the Address/Data switches to X'FF00' position (CE panel).
  -Set MSIPL to Diskette (CE panel).
  -Set CSIPL to Diskette (CE panel).
  (Step 004 continues)

7
A

Note 1: When the CSIPL sequence completes, the System Available indicator (system console) should be on and the system console should display the DCP Main Menu.

(Step 004 continued)
-Set all other CE panel switches to their down
positions.

-Insert diskette DIAGB1.

-Press Load (operator panel).

Wait approximately 45 seconds for the CSIPL to
complete (See note 1).

**Is the Main Menu displayed on the system
console?**
Y N

  005
  This path cannot be taken unless the CSIPL
  sequence can be completed.
  Go To Map 0101, Entry Point B.

006
Select the MDI MAPs and press the Enter key (system
console).
Select disk drive (A, B, C, or D) and press the Enter key.
Did the MDI tests find the problem?
Y N

  007
  (Entry Point C)

  To perform an CSIPL from the disk and bypass the
  wrap tests, do the following:

  -Set Mode Selector to Proc Run (CE panel).
  -Set the Address/Data switches to X'FF00' position
  (CE panel).
  -Set all other CE panel switches to their down
  positions.

  -Press Load (operator panel).

  Wait about 45 seconds for the CSIPL sequence to
  complete.
  (Step 007 continues)

Wait for the MDI MAPs to either find the failing FRU,
instruct you to follow the MDI MAPs, or end.

5
B

(Step 007 continued)
Is the System Available indicator On (system console)?
Y N

008
Go To Map 1013, Entry Point A.

009
Go to MAP 0199 to attempt some other diagnostics.
Go To Map 0199, Entry Point A.

010
(Entry Point D)

Verify that the system is correct by running the Disk Analyze program.

To perform a CSIPL from the diskette and bypass the wrap tests, do the following:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to X'FF00' position (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.

-Insert diskette DIAGB1.

-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to complete.
Is the Main Menu displayed on the system console? (see note 2).
Y N

011
This path cannot be taken unless the CSIPL sequence can be completed.
Go To Map 0101, Entry Point B.

Note 2: When the CSIPL sequence completes, the System Available indicator (system console) should be on and the console should display the DCP Main Menu.

C
5

012

Select the Utilities and press the Enter key (system console).
Select the Disk Analyze program.
Select the disk drive (A, B, C, or D) to test.
Does the Disk Analyze program run without errors?
Y N

> **013**
> The Disk Analyze program did not run correctly. Run the disk MDI MAPs to determine the failure, and if there is no hardware problem, correct the failing identification fields and assign the alternative sectors by using option 2 of the Disk Analyze program. The disk exerciser can be used to write over the data fields that have a CRC check. If this does not correct the problem, initialize the disk and load all the data again.
> ** CAUTION ** Back up all the customer data before running disk initialize (if it is run).
> **Go to Step 014, Entry Point E.**

014
(Entry Point E)

To perform a CSIPL from the disk and bypass the wrap tests, do the following:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to X'FF00' position (CE panel).
-Set all other CE panel switches to their down positions.

-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to complete.
Is the System Available indicator On (system console)?
Y N

> **015**
> **Go To Map 1013, Entry Point A.**

7
D

A D
3 6

016
Return the system to the system operator.

017
(Entry Point F)

If the disk MDI MAPs run without any errors, an intermittent failure may be the problem.
Verify that all cards, cables, and top card connectors are installed tightly.
Verify that the fan in the disk drive card gate is working.
Verify that all voltages are correct (10-190).
Return to this MAP and step if all cables are tight and all voltages are correct.
To perform a CSIPL from the diskette and bypass the wrap tests, do the following:

-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to X'FF00' position (CE panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down positions.

-Insert diskette DIAGB1.

-Press Load (operator panel).

Wait about 45 seconds for the CSIPL sequence to complete.
Is the Main Menu displayed on the system console? (see note 3).
Y N

018
This path cannot be taken unless the CSIPL sequence can be completed.
Go To Map 0101, Entry Point B.

Note 3: When the CSIPL sequence completes, the System Available light should be On and the system console should display the DCP Main Menu.

8
E

E
7

019
Select MDI special (99-090) and press the Enter key
(system console).
Select disk drive (A, B, C, or D) and press the Enter key.
Enter 1058 001 for the starting MAP.
Press the Enter key to start the intermittent failure tests.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1001	A	1	001
1001	C	2	004

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	007	0101	B
3	011	1083	A

001
(Entry Point A)
Check continuity from A-A2E2B10 to A-A2A2B10 (-service out).

MAP DESCRIPTION:
This MAP isolates the failing FRU from errors found in MAP 1001.

START CONDITIONS:
You must enter this MAP from MAP 1001.

LOGIC CARDS TESTED:
A-A2E2, A-A2D2, A-A2C2, and board A-A2.

Is the net open?
Y N

  002
  Bad card
  A-A2E2.

003
Bad board
A-A2.

05JAN81   PN 8265701

EC 835086   PEC 834824

MAP 1003-1

004
(Entry Point C)
Probe A-A2E2M11 (-power on reset) and A-A2E2P11
(-system reset).

Up   Light: Off
Down Light: On

Are the lights correct for either line?
Y N

 005
 Probe the following:
 A-A2A4B04 (-interrupt drive A).
 A-A2B6A04 (-interrupt drive B) (see FSL AB300).
 A-A2B4B04 (-interrupt drive C).
 A-A2B5B04 (-interrupt drive D).

 Up   Light: Ignore
 Down Light: On

 Are the lights correct for any of the lines?
 Y N

  006
  Remove card A-A2D2.
  -Set Power to 1 (operator panel).
  To perform an CSIPL from the diskette and
  bypass the wrap test, do the following:
  -Set Mode Selector to Proc Run (CE panel).
  -Set the Address/Data switches to X'FF00' (CE
  panel).
  -Set MSIPL to Diskette (CE panel).
  -Set CSIPL to Diskette (CE panel).
  -Set all other CE panel switches to their down
   positions.

  -Insert DIAGB1 Diskette.

  -Press Load (operator panel).

  Wait about 45 seconds for the CSIPL sequence to
  complete.
  (Step 006 continues)

There is a problem on the interface between the
channel adapter (card A-A2E2) and the A-A2D2
common adapter card. To determine if the problem is
in the channel adapter card, the common adapter card
is removed.

3 3
A B

(Step 006 continued)
**Is the DCP Main Menu displayed on the
system console?**
Y N

    007
    Reinstall card A-A2D2.
    This path cannot be taken unless the CSIPL
    sequence can be completed.
    Go To Map 0101, Entry Point B.

008
Probe the following:
A-A2E2J10 (-request out).
A-A2E2G07 (-acknowledge request in).

```
Up    Light: Ignore
Down  Light: Off
```

Are the lights correct?
Y N

    009
    Reinstall card A-A2D2.
    Bad card
    A-A2E2.

010
Select MDI special (99-090) from the Main Menu.
Select disk drive A.
Run disk MDI MAP 1005 by entering '1005 001'
over IDID NNN.
Follow the instructions given in the MAP.

011
Go To Map 1083, Entry Point A.

012
Bad card
A-A2E2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1007	A	1	001
1007	B	3	012
1007	C	4	023

001
(Entry Point A)

Probe A-A2E2J10 (-request out).

Up   Light: On
Down Light: Off

MAP DESCRIPTION:
This MAP isolates the failing FRU from errors found in
MAP 1007.

START CONDITIONS:
This MAP must be entered from MAP 1007.

LOGIC CARDS TESTED:
A-A2E2, A-A2D2, A-A2C2

Are the lights correct?
Y N

   002
   Probe A-A2E2M10 (-acknowledge request out).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      003
      Bad card
      A-A2E2.

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2 2
A B

004
Probe A-A2E2U02 (-interface error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  005
  Bad card
  A-A2D2.

006
Probe the following:

A-A2E2U07   (-tag bit 0)
A-A2E2U09   (-tag bit 1)
A-A2E2S05   (-tag bit 4)
A-A2E2S06   (-tag bit 5)
A-A2E2S07   (-tag bit 6)
A-A2E2S08   (-tag bit 7)
A-A2E2S09   (-tag bit P).

Up   Light: On
Down Light: Off

Are the lights correct for any of the above?
Y N

  007
  Bad card
  A-A2D2.

008
Bad card
A-A2E2.

009
Remove card A-A2D2.
-Set Power to 1 (operator panel).
To perform a CSIPL from diskette and bypass the wrap
tests, do the following:
-Set Mode Selector to Proc Run (CE panel).
-Set the Address/Data switches to the X'FF00' position
(CE panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down
  positions.

-Insert DIAGB1 diskette.

-Press Load (operator panel).
When the CSIPL sequence is complete, run the MDI
MAPs again, but do not follow the instructions on the
console.
When the disk MDI MAPs stop, Probe A-A2E2J10
(-request out).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  010
  Reinstall card A-A2D2.

  Bad card
  A-A2E2.

011
Bad card
A-A2D2.
---or---
Bad top card connector

012
(Entry Point B)
Probe A-A2E2J11 (-strobe out).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   013
   Bad card
   A-A2E2.

014
Probe A-A2E2U10 (-tag bit 2) and A-A2E2U11 (-tag bit 3).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   015
   Bad card
   A-A2E2.

016
Probe the following lines:
A-A2E2S05 (-tag bit 4)
A-A2E2S06 (-tag bit 5)
A-A2E2S07 (-tag bit 6)
A-A2E2S08 (-tag bit 7)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   017
   Bad card
   A-A2E2.

C

018
Probe the following:

```
A-A2E2J12 (-CA data bus bit 0)
A-A2E2J13 (-CA data bus bit 1)
A-A2E2M02 (-CA data bus bit 2)
A-A2E2P02 (-CA data bus bit 3)
A-A2E2P04 (-CA data bus bit 4)
A-A2E2G11 (-CA data bus bit 5)
A-A2E2G12 (-CA data bus bit 6)
A-A2E2G13 (-CA data bus bit 7)
A-A2E2M04 (-CA data bus bit 8)
A-A2E2M05 (-CA data bus bit 9)
A-A2E2M06 (-CA data bus bit 10)
A-A2E2M07 (-CA data bus bit 11)
A-A2E2M08 (-CA data bus bit 12)
A-A2E2P05 (-CA data bus bit 13)
A-A2E2P06 (-CA data bus bit 14)
A-A2E2P07 (-CA data bus bit 15)
A-A2E2P09 (-CA data bus bit PL)
A-A2E2M03 (-CA data bus bit PH).
```

Up   Light: On
Down Light: Off

Are the lights correct for any of the above lines?
Y N

   019
   Probe A-A2E2M11 (-power on reset).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      020
      Bad card
      A-A2C2
      ---or---
      A-A2D2
      ---or---
      Bad top card connector

4 4
D E

021
Bad card
A-A2E2.

022
Bad card
A-A2E2.

023
(Entry Point C)
Using the TU Select option (99-065), select drive A and
loop on TA108.
Probe A-A2E2J11 (-strobe out).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  024
  Bad card
  A-A2E2
  ---or---
  A-A2D2

025
Remove A-A2D2 top card connector Z1.
-Set Power to 1 (operator panel).
Using the TU Select option, select disk drive A, and
loop on TA109.
Probe the following top card connector positions:

```
A-A2D2Z05 (-CA data bus bit 0)
A-A2D2Z06 (-CA data bus bit 1)
A-A2D2Z07 (-CA data bus bit 2)
A-A2D2Z09 (-CA data bus bit 3)
A-A2D2Z10 (-CA data bus bit 4)
A-A2D2Z11 (-CA data bus bit 5)
A-A2D2Z12 (-CA data bus bit 6)
A-A2D2Z13 (-CA data bus bit 7)
A-A2D2Z22 (-CA data bus bit 8)
A-A2D2Z23 (-CA data bus bit 9)
A-A2D2Z24 (-CA data bus bit 10)
A-A2D2Z25 (-CA data bus bit 11)
A-A2D2Z26 (-CA data bus bit 12)
A-A2D2Z28 (-CA data bus bit 13)
A-A2D2Z29 (-CA data bus bit 14)
A-A2D2Z30 (-CA data bus bit 15)
A-A2D2Z02 (-CA data bus bit PL)
A-A2D2Z03 (-CA data bus bit PH).
```

(Step 025 continues)

(Step 025 continued)
Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

>
> **026**
> Bad card
> A-A2D2.

027
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1007	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1081	A

001
(Entry Point A)

Probe A-A2E2S13 (-overrun error).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    002
    Bad card
    A-A2C2
    ---or---
    A-A2D2
    ---or---
    Bad top card connector

003
Probe A-A2E2S12 (-tag parity check).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

MAP DESCRIPTION:
This MAP isolates the FRU that caused a cycle failure in
MAP 1007.

START CONDITIONS:
This MAP must be entered from MAP 1007.

LOGIC CARDS TESTED:
A-A2E2, A-A2D2 ,A-A2C2

2 2
A B

05JAN81   PN 8265703

EC 835086   PEC 834824

MAP 1011-1

004
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

005
Probe A-A2E2S03 (-block processor clock).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **006**
> Probe A-A2A4B04 (-interrupt).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **007**
> > Bad card
> > A-A2C2
> > ---or---
> > A-A2D2
> > ---or---
> > A-A2E2
> > ---or---
> > Bad top card connector
>
> **008**
> **Go To Map 1081, Entry Point A.**

C

009
Probe A-A2E2P12 (-disk burst mode).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **010**
> Bad card
> A-A2E2.

011
Probe A-A2E2M12 (-disk burst request).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **012**
> Probe A-A2E2P10 (-CA burst mode).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **013**
> > Probe A-A2E2M09 (-request in).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **014**
> > > Bad card
> > > A-A2E2.

E F
2 2

D G
2

015
Bad card
A-A2C2
---or---
A-A2D2
---or---
A-A2E2
---or---
Bad top card connector

016
Probe A-A2E2M09 (-request in).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   017
   Bad card
   A-A2C2
   ---or---
   A-A2D2
   ---or---
   Bad top card connector

018
Probe A-A2E2G07 (-acknowledge request in).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   019
   Bad card
   A-A2E2.

G

020
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

021
Probe A-A2E2M09 (-request in).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   022
   Probe A-A2E2M09 (-request in).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      023
      Probe A-A2E2P10 (-CA burst mode).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         024
         Bad card
         A-A2E2.

4 4 4
H J K

025
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

026
Probe A-A2E2G07 (-acknowledge request in).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    027
    Bad card
    A-A2C2
    ---or---
    A-A2D2
    ---or---
    Bad top card connector

028
Bad card
A-A2E2.

029
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0303	A	1	001
0305	B	4	018
0323	B	4	018
1000	A	1	001
1505	B	4	018
1515	B	4	018

001
(Entry Point A)

CSIPL worked from diskette, but failed from disk.

Reinstall card A-A2E2 if it has been removed.
-Set Power to 1 (operator panel).
-Set all CE panel switches to their down position.
-Set the Address/Data switches to X'FF00' (CE panel).
-Press Load (operator panel).

Probe A-A2E2S04 (-IPL).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

MAP DESCRIPTION:
This MAP isolates disk problems that affect CSIPL.

START CONDITIONS:
This MAP may be entered only as a result of a disk CSIPL problem.

LOGIC CARDS TESTED:
A-A2E2, A-A2D2, A-A2C2, and board A-A2.

3 2
A B

B
1
|
|
|

002
Remove card A-A2E2.
-Set Power to 1 (operator panel).
-Press Load (operator panel).

Probe A-A2E2G10 (-CSIPL diskette).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N
|
| **003**
| Probe A-A2E2B11 (-CSIPL cycle).
|
| Up   Light: Off
| Down Light: On
|
| **Are the lights correct?**
| Y N
| |
| | **004**
| | Reinstall card A-A2E2.
| |
| | Bad net
| | -CSIPL cycle, FSL/Vol D page CH003.
| |
| **005**
| **Is there a card in A-A1B2 location?**
| Y N
| |
| | **006**
| | Probe A-A1K2U13 (+MSIPL disk).
| |
| | Up   Light: On
| | Down Light: Off
| |
| | **Are the lights correct?**
| | Y N
3
C D E F

D E F   MAP 1013-2
	007
	Reinstall card A-A2E2.
	Bad net
	+MSIPL, FSL/Vol D page CE140.
008
Bad card
A-A2E2.
---or---
CSIPL or MSIPL information on the disk has been
altered.   Run Disk Analyze program (99-055) to
verify that there are no defective sectors on the disk.
Then run Customize (99-055) to load the CSIPL
information.
009
Probe A-A1G2U13 (+MSIPL disk).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N
|
| **010**
| Reinstall card A-A2E2.
|
| Bad net
| +MSIPL, FSL/Vol D page CE140.
|
011
Bad card
A-A2E2.
---or---
CSIPL or MSIPL information on the disk has been
altered.   Run Disk Analyze program (99-055) to verify
that there are no defective sectors on the disk.   Then
run Customize (99-055) to load the CSIPL information.

012

Reinstall card A-A2E2.

Bad net

-CSIPL diskette, FSL/Vol D page CH003.

013

Probe A-A2E2P10 (-CA burst mode).

Up   Light: On
Down Light: Off

Are the lights correct?

Y N

  014

  Probe A-A2E2M09 (-request in).

  Up   Light: On
  Down Light: Off

  Are the lights correct?

  Y N

    015

    Bad card

    A-A2E2.

  016

  Bad card

  A-A2D2

  ---or---

  A-A2C2

  ---or---

  Bad top card connector

017

Bad card

A-A2D2

---or---

A-A2C2

---or---

Bad top card connector

---or---

CSIPL or MSIPL information on the disk has been altered. Run Disk Analyze program (99-055) to verify that there are no defective sectors on the disk. Then run Customize (99-055) to load the CSIPL information.

G

018
(Entry Point B)

Disk causes CSIPL from diskette to fail.

-Reinstall card A-A2E2 if it has been removed.
-Set Power to 1 (operator panel).
-Set MSIPL to Diskette (CE panel).
-Set CSIPL to Diskette (CE panel).
-Set all other CE panel switches to their down
 positions.
-Set the Address/Data switches to X'FF00' (CE panel).
Open the diskette cover.

-Probe A-A2E2S04 (-IPL).
-Reset the probe by setting the Latch switch to None.
-Set the Latch switch to the down position (CE probe).
-Press Load (operator panel).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **019**
> Remove card A-A2D2.
> -Set Power to 1 (operator panel).
> Probe A-A2E2S04 (-IPL).
> -Reset the probe by setting the Latch switch to
> None.
> -Press Load (operator panel).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**

5 5 5
H J K

020

Reinstall card A-A2D2. and remove card A-A2E2.

-Set Power to 1 (operator panel).

Probe A-A2E2G10 (-CSIPL diskette).

-Reset the probe by setting the Latch switch to None.

-Press Load (operator panel).

Up   Light: Ignore
Down Light: On

Are the lights correct?
Y N

     021
     Reinstall card
     Bad net
     -CSIPL diskette, FSL/Vol D page CH003.

     022
     Bad card
     A-A2E2.

023
Bad card
A-A2D2.

024
Probe A-A2E2P10 (-CA burst mode).

-Reset the probe by setting the Latch switch to None.

-Set the Latch switch to the down position (CE probe).

-Press Load (operator panel).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

L M

025

Remove card A-A2D2.

Probe A-A2E2P10 (-CA burst mode).

-Reset the probe by setting the Latch switch to None.

-Set the Latch switch to the down position (CE probe).

-Press Load (operator panel).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

     026
     Reinstall card

     Bad card
     A-A2E2.

027
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

028
Bad card
A-A2E2.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1022	A	1	001
1025	A	1	001
1026	A	1	001
1030	C	5	031
1046	B	11	085
1051	A	1	001
1052	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	0511	A
6	040	0595	A
10	081	0595	A
9	066	0595	A
12	098	0595	A
9	073	0595	B
9	069	0595	B
14	116	0595	B
5	029	1021	B
6	048	1021	B
14	117	1022	B
11	086	1024	A

001
(Entry Point A)

Note: Reset the thermal cut-out on the disk C drive motor (10-190) when leaving this MAP.
Check for the following on drive C (10-190):
1. The drive belt is broken or off the pulleys (10-040).
2. Loose parts in or around the drive belt guard (10-040).
3. Loose cable connections to drive motor or brake coil (10-080).

Are all the checks OK?
Y N

┃
┃ **002**
┃ Repair or exchange as required.
┃
┃
2
A

MAP DESCRIPTION:
This MAP isolates failures that prevent the disk drive from rotating or cause the rotational speed to go out of tolerance.

START CONDITIONS:
The disk is not turning or is turning at the wrong speed.

LOGIC CARDS TESTED:
E-C1F2, E-C1D2 and E-C1E2, disk drive C enclosure, cables E-C1A3 and E-C1A5, and drive C motor, belt, and brake.

A
1

003
-Set Power to 0 (operator panel).
Inspect the disk C drive belt for tension and general condition (10-190).

Is the drive belt in good condition and is tension correct?
Y N

    004
    Align the drive belt and check the tension (10-190). Exchange the drive belt if it is in poor condition (10-040).

005
Remove cable C-B1J4 (05-260)

-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Is the Disk C drive belt turning?
Y N

    006
    Jumper E-C1D2G10 (brake coil drive) to E-C1D2D08

    Remove the drive belt guard and turn the disk C drive motor pulley clockwise by hand to test for binds or brake on.

    Is the motor free to turn?
    Y N

        007
        Inspect the drive C brake assembly (10-190).
        Is the brake pad clear of the spindle pulley?
        Y N

```
9  4  4  3
B  C  D  E
```

Note: A card is used at C-B1J4 instead of a cable on a three drive system.

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

SPEED FAILURE MAP

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008
Measure for +24Vdc at the following locations on the drive C brake coil:
1. Brake coil terminal 1 to ground.
2. Brake coil terminal 2 to ground.

Are they both more than 20V?
Y N

  009
  Is either one of them more than 20V?
  Y N

    010
    Reinstall cable C-B1J4.
    Remove jumper.
    Check for continuity between brake coil terminal 2 and VC3-B on E-C1 board (10-190).

    Is the continuity OK?
    Y N

      011
      Repair bad cable between VC3 and brake coil terminal 2.
      Reinstall the drive belt guard.

    012
    Check for continuity between VC3-B and VC5-B on E-C1 board (10-190).

    Is the continuity OK?
    Y N

      013
      Reinstall the drive belt guard.
      Bad board
      E-C1 (10-170).

014
Check for continuity between VC5-B and C-B1J3D06 (05-220).

Is the continuity OK?
Y N

  015
  Reinstall the drive belt guard.
  Repair or exchange the drive C DC power cable.

016
Reinstall the drive belt guard.
Go To Map 0511, Entry Point A.

017
Reinstall cable C-B1J4.
Remove jumper.
The problem is an open circuit brake coil.
Repair or exchange as required (10-110).

018
Remove jumper.
Jumper E-C1D2P07 (+brake applied) to E-C1D2P08.
Measure for +24Vdc between E-C1D2G10 (brake coil drive) and ground.

Does the CE multimeter read more than 20V?
Y N

  019
  Reinstall cable C-B1J4.
  Remove jumper.
  Check for continuity between VC3-A and brake coil terminal 1 (10-190).

  Is the continuity OK?
  Y N

    020
    Repair or exchange the bad cable between VC3-A and the brake coil terminal 1.
    Reinstall the drive belt guard.

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EC 835086   PEC -------

C D J K
2 2 3 3

SPEED FAILURE MAP

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MAP 1020-4

021
Reinstall the drive belt guard.
Bad board
E-C1 (10-170).

022
Reinstall cable C-B1J4.
Remove jumper.
Bad drive C brake magnet assembly (10-110).

023
Remove the drive belt on drive C by tilting the drive
motor upward.
Turn the drive C disk spindle pulley clockwise by
hand to test for binds.

Is the disk spindle free to turn?
Y N

  024
  Reinstall cable C-B1J4.
  Remove jumper.
  Bad drive C disk enclosure (10-030).

025
Reinstall cable C-B1J4.
Remove jumper.
Bad disk C drive motor (10-100).

026
Reinstall cable C-B1J4.
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Reset the thermal cut-out on disk drive C motor
(10-190).
Jumper E-C1D2G11 (+brake applied to system) to
E-C1D2J08.
-Set Power to 1 (operator panel).
Wait for 2 to 3 minutes and then observe the drive
motor (see note).

Is the disk C drive motor turning?
Y N

7 5
L M

CAUTION
Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
miminum. Failure to do so may result in damage to the
disk enclosure.

Note: Disk drive brake has been jumpered open, so if
drive motor is powered off disk will coast to stop. This
can take up to 3 minutes.

027
Is this a three drive system?
Y N

  028
  Jumper E-D1D2G10 (brake coil drive) to
  E-D1D2D08.

  Remove the drive belt guard and turn the disk D
  drive motor pulley clockwise by hand to test for
  binds or brake on.
  Is the motor free to turn?
  Y N

    029
    Remove all jumpers.
    Reinstall the drive belt guard.
    Go To Map 1021, Entry Point B.

  030
  -Set Power to 0 (operator panel).
  Reset the thermal cut-out on disk drive D motor
  (10-190).
  Reinstall the drive belt guard.
  Jumper E-D1D2G11 (+brake applied to system) to
  E-D1D2J08.
  -Set Power to 1 (operator panel).
  Observe the drive belts for drives C and D.
  Are both disks turning?
  Y N

    031
    (Entry Point C)
    Measure for +5Vdc on VC5-A on board E-C1
    (10-190).

    Is voltage less than 0.5V?
    Y N

      032
      Remove all jumpers.
      Bad board
      E-C1 (10-170).

CAUTION
Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
miminum. Failure to do so may result in damage to the
disk enclosure.

033
Measure for +5Vdc on VC5-A on board E-D1.

Is voltage less than 0.5V?
Y N

    034
    Remove all jumpers.
    Bad board
    E-D1 (10-170).

035
Check for continuity between VC5 pin A on board E-C1
and cable position C-B1J3D04 (05-210).

Is the continuity OK?
Y N

    036
    Remove all jumpers.
    Bad drive C DC power cable.

037
Check for continuity between VC5 pin A on board E-D1
and cable position C-B1J4D04 (05-210).

Is the continuity OK?
Y N

    038
    Remove all jumpers.
    Bad drive D DC power cable.

039
-Set Power to 1 (operator panel).
Measure for 220Vac at ACTB7 pins 8 and 9.

Is the voltage between 200 and 240Vac?
Y N

    040
    Remove all jumpers.
    240Vac power missing.
    Go To Map 0595, Entry Point A.

R

041
Measure for 220Vac on drive motor ACTB for
drive C.
Is the voltage between 200 and 240Vac?
Y N

    042
    Remove all jumpers.
    Bad drive C AC power cable.

043
Measure for 220Vac on drive motor ACTB for
drive D.

Is the voltage between 200 and 240Vac?
Y N

    044
    Remove all jumpers.
    Bad AC power cable to drive D.

045
Is the disk C drive motor turning?
Y N

    046
    Remove all jumpers.
    Bad disk C drive motor (10-100).

047
Remove all jumpers.
Bad disk D drive motor (10-100).

048
Remove all jumpers.
Go To Map 1021, Entry Point B.

049
Go to Page 10, Step 074, Entry Point D.

SPEED FAILURE MAP

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050
Switch probe to Multi.
Probe E-C1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    051
    Probe E-C1D2B13 (-osc early).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        052
        Probe E-C1D2J02 (-osc late).

        Up   Light: On or flashing
        Down Light: On or flashing

        Are the lights correct?
        Y N

            053
            Remove all jumpers.
            Bad card
            E-C1D2
            ---or---
            E-C1E2 (10-160).

        054
        Remove all jumpers.
        Bad card
        E-C1E2
        ---or---
        E-C1F2 (10-160)
        ---or---
        Bad drive C disk enclosure (10-030).

055
Remove card E-C1F2.
Measure the resistance between pins E-C1F2J05 (clock threshold) and E-C1F2D08.

Is the resistance less than 50 ohms?
Y N

    056
    Reinstall card E-A1F2.
    Jumper E-C1F2P02 (-power on delay) to E-C1F2P08.
    -Set Power to 1 (operator panel).
    Remove jumper on E-C1F2P02.
    Run the disk drive MAPs to drive C using MDI special (99-090), and return to this step after the MAPs stop.
    -Select drive C.
    -Enter 1040 001 for the starting MAP.

    Did disk MAPs run without errors?
    Y N

        057
        Remove all jumpers.
        Bad card
        E-C1D2 (10-160).

    058
    Remove all jumpers.
    Bad card
    E-C1F2 (10-160).

059
Remove all jumpers.
Bad drive C disk enclosure (10-030).

060
Run the disk drive MAPs to drive C using MDI special
(99-090), and return to this step after the MAPs stop.
-Select drive C.
-Enter 1040 001 for the starting MAP.

Did disk MAPs run without errors?
Y N

> **061**
> -Set Power to 0 (operator panel).
> Remove all jumpers.
> Jumper E-C1F2P02 (-power on delay) to
> E-C1F2P08.
>
> Remove cable C-B1J4 (05-260).
>
> -Set Power to 1 (operator panel).
> Wait for 2 minutes and then observe the drive
> motor.
>
> **Is the Disk C drive belt turning?**
> Y N
>
> > **062**
> > Inspect the drive C brake assembly (10-190).
> >
> > **Is the brake pad clear of the spindle pulley?**
> > Y N
> >
> > > **063**
> > > Remove jumper.
> > > Bad card
> > > E-C1D2 (10-160).

Note: A card is used at C-B1J4 instead of a cable on a
three drive system.

9 9 9
U V W

064
Reinstall cable C-B1J4.
Remove jumper.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive C
and loop on TA166 for 5 minutes and observe if the
result bytes are always X'0000'.

Are the result bytes always X'0000'?
Y N

> **065**
> Measure for 240Vac at disk drive C motor ACTB
> and observe for one minute (10-190).
>
> **Is voltage always between 175V to 259V?**
> **Y N**
>
> > **066**
> > **Go To Map 0595, Entry Point A.**
>
> **067**
> Check for a loose or wrong connection at the disk
> drive C motor ACTB.
> If connections are OK exchange the disk C drive
> motor (10-080, 10-100).

068
Suspect a bad drive motor thermal cut-out, or
thermal cut-out was not reset after preceding failure
(10-190).

069
Reinstall cable C-B1J4.
Remove all jumpers.
Go To Map 0595, Entry Point B.

070
-Set Power to 0 (operator panel).
Remove all jumpers.
Probe E-C1F2P02 (-power on delay).

Power on and observe the CE probe.
**Is the line down for approximately 15 to 20
seconds?**
Y N

> **071**
> Bad card
> E-C1F2 (10-160).

072
Bad card
E-C1D2 (10-160).

073
Reinstall cable C-B1J4.
Go To Map 0595, Entry Point B.

X Y

MAP 1020-10

074
(Entry Point D)
Measure for +5Vdc on VC5-A on board E-C1.

Is voltage less than 0.5V?
Y N

> **075**
> Remove all jumpers.
> Bad board
> E-C1 (10-170).

076
Check for continuity between VC5-A on board E-C1 and C-B1J3D04 (05-260).

Is the continuity OK?
Y N

> **077**
> Remove all jumpers.
> Bad drive C DC power cable.

078
Check for continuity between position D11 and D04 on C-B1J4 card.
Is the continuity OK?
Y N

> **079**
> Remove all jumpers.
> Bad C-B1J4 card.

080
Reinstall card C-B1J4.
-Set Power to 1 (operator panel).
Measure for 220Vac at ACTB7 pin 8 and 9.

Is the voltage between 200 and 240Vac?
Y N

X Y

081
Remove all jumpers.
240Vac power missing.
Go To Map 0595, Entry Point A.

082
Measure for 220Vac on drive motor ACTB for drive C.
Is the voltage between 200 and 240Vac?
Y N

> **083**
> Remove all jumpers.
> Bad AC power cable to drive C.

084
Remove all jumpers.
Bad disk C drive motor (10-100).

```
        Z   A   A   A
            A   A   A
            A   B   C
        |   |   |   |
        |   |   |   |
        |   |   |   |
```

085
(Entry Point B)

Measure for +24Vdc:
E-C1F2G02 (pos)
E-C1F2J08 (neg)
Does the CE multimeter read between 21.6V and 26.4V?
Y N

| **086**
| Go To Map 1024, Entry Point A.

087
Probe E-C1A5D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

| **088**
| Probe E-C1D2S13 (-index).
|
| Up   Light: On or flashing
| Down Light: On or flashing
|
| **Are the lights correct?**
| Y N
|
| | **089**
| | Probe E-C1D2P02 (missing clocks/2).
| |
| | Up   Light: On or flashing
| | Down Light: On or flashing
| |
| | **Are the lights correct?**
| | Y N

```
Z   A   A   A
    A   A   A
    A   B   C
```

090
Bad card
E-C1D2
---or---
E-C1F2 (10-160).
---or---
E-C1B2

091
Bad card
E-A1D2 (10-160).

092
Bad board
E-C1 (10-170).

093
-Set Power to 0 (operator panel).

Check continuity from E-C1A5D07 to A-A2B4D07 (-index).

Is the continuity OK?
Y N

| **094**
| Bad cable E-C1A5 (10-150).

095
Check condition and tension of drive belt (10-190).

Is the belt OK?
Y N

| **096**
| Repair as necessary (10-040).

```
1
2
A
D
```

097
-Set Power to 1 (operator panel).

Measure for 240Vac on the disk C drive motor
assembly ACTB terminals.

Is the voltage between 175V and 259V?
Y N

> **098**
> Go To Map 0595, Entry Point A.

099
Check the configuration jumpers on card A-A2D2
(10-210).
Are the jumpers correct?
Y N

> **100**
> Install the jumpers correctly and run the disk maps
> again.

101
Is an oscilloscope available?
Y N

> **102**
> -Set Power to 0 (operator panel).
> Remove cable C-B1J4 (05-260).
> Wait 30 seconds, and then press Reset (CE panel).
> -Set Power to 1 (operator panel).
> **Is the drive belt turning?**
> Y N

Note: A card is used at C-B1J4 instead of a cable on a
three drive system.

```
1   1   1
4   4   3
A   A   A
E   F   G
```

103
Jumper E-C1D2G10 (brake coil drive) TO E-C1D2D08

Remove the drive belt guard and turn the disk C drive motor pulley clockwise by hand to test for binds or brake on.

Is the motor free to turn?
Y N

    104
    Inspect the drive C brake assembly (10-190).
    Is the brake pad clear of the spindle pulley?
    Y N

        105
        Remove jumper.
        Drive C brake needs adjustment (10-190)
        ---or---
        Bad drive C brake magnet assembly (10-110).

    106
    Remove the drive belt on drive C by tilting the drive motor upward.
    Turn the drive C disk spindle pulley clockwise by hand to test for binds.
    Is the disk spindle free to turn?
    Y N

        107
        Remove jumper.
        Bad drive C disk enclosure (10-030).

    108
    Remove jumper.
    Bad disk C drive motor (10-100).

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

SPEED FAILURE MAP

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109
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Jumper E-C1D2G11 (+brake applied to system) to
E-C1D2J08.
-Set Power to 1 (operator panel).
Wait for 30 seconds.
Probe E-C1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

110
Probe E-C1D2B13 (-osc early).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

111
Probe E-C1D2J02 (-osc late).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

112
Remove all jumpers.
Bad card
E-C1D2
---or---
E-C1E2 (10-160).

113
Remove all jumpers.
Bad card
E-C1E2 (10-160).

114
Remove all jumpers.
Bad card
E-C1D2
---or---
E-C1F2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

115
Remove all jumpers.
Bad card
E-C1F2
---or---
E-C1D2 (10-160).
---or---
A-A2C2
---or---
Bad disk C drive motor (10-100).

116
Go To Map 0595, Entry Point B.

117
Go To Map 1022, Entry Point B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1011	A	1	001
1016	B	4	028
1020	B	4	028
1040	A	1	001
1040	B	4	028
1041	A	1	001
1044	A	1	001
1051	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1024	A

001
(Entry Point A)
Measure for the following voltages:

Voltage	Range	Pin
+5Vdc	4.4V to 5.6V	E-C1D2D03
+24Vdc	21.6V to 26.4V	E-C1F2G02
-4Vdc	3.5V to 4.5V	E-C1F2B06

MAP DESCRIPTION:
This MAP isolates failures causing no communication between the disk and the common adapter.

START CONDITIONS:
The disk does not respond to common adapter commands.

LOGIC CARDS TESTED:
E-C1C2, E-C1F2, cables E-C1A4 and E-C1A5, and the system power supply.

Note: An open circuit on nets A5-01, VC-01, and V-01 could cause you to enter this MAP. See netlist tables, MAP 1077.

Are the voltages in range?
Y N
│
│ **002**
│ **Go To Map 1024, Entry Point A.**
│

2
A

A
1
|

003
Probe E-C1F2G10 (-power good).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **004**
> Remove card E-C1F2.
>
> -Set Power to 1 (operator panel).
>
> Probe E-C1F2G10 (-power good).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Check for continuity of -power good (see FSL
> > YA181).
> > **Is the continuity OK?**
> > Y N
> >
> > > **006**
> > > Exchange the bad card, cable, or board found
> > > in the preceding step (10-150, 10-160,
> > > 10-170).
> >
> > **007**
> > Bad card
> > C-B1J6.
>
> **008**
> Reset the thermal cut-out on the disk drive C motor
> (10-190).
> Bad card
> E-C1F2 (10-160).

B

B
|

MAP 1021-2

009
Probe E-C1F2P09 (-power good delayed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **010**
> Reset the thermal cut-out on the disk drive C motor
> (10-190).
> Bad card
> E-C1F2 (10-160).

011
Probe E-C1F2P02 (-power on delay).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **012**
> Bad card
> E-C1F2 (10-160).

013
Probe E-C1C2B03 (+interface degate).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **014**
> Check for continuity of the drive C +interface degate
> line.   See MAP 1077, Dedicated Cable Wiring
> Checks
> **Was an open found?**
> Y N

3 3 3
C D E

C D E
2 2 2

DISK INT FAILURE MAP

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F G   MAP 1021-3

015
Bad card
A-A2D2.

016
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

017
Check for continuity of the drive C -control sample line
and the -control sample received line. See MAP 1077,
Dedicated Cable Wiring Checks and Bus Cable Wiring
Checks.
Was an open found?
Y N

> **018**
> Using the TU Select option (99-065), select drive C
> and loop on TA16A.
> Probe E-C1A5B03 (-control sample).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **019**
> > Probe E-C1A5B03 (-control sample).
> >
> > Up   Light: Off
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **020**
> > > Bad card
> > > A-A2D2.
> >
> > **021**
> > Bad card A-A2D2
> > ---or---
> > E-C1C2 (10-160).

022
Probe A-A2A5B12 (-control sample received).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **023**
> Probe E-C1A3B12 (-control sample received).
>
> Up   Light: Off
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **024**
> > Bad card
> > E-C1C2 (10-160).
>
> **025**
> Bad terminator card, E-C1A4 or E-D1A4 (10-140).

026
Bad card
A-A2D2.

027
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

028
(Entry Point B)
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Run the disk Drive MAPs to drive D using MDI special
(99-090):
-Select drive D.
-Enter 1040 001 for the starting MAP.
Follow the directions given in the MDI MAPs.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1020	B	5	030
1063	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	033	1020	A
5	038	1020	A
6	043	1020	A
6	046	1020	A

001
(Entry Point A)

−Set Power to 0 (operator panel).
Measure the resistance (10X range) between the following points:
1. E−C1F2M12 (pos) and E−C1F2G02 (neg).
2. E−C1F2U07 (pos) and E−C1F2G02 (neg).
3. E−C1F2U08 (pos) and E−C1F2U04 (neg).
4. E−C1F2U08 (pos) and E−C1F2U02 (neg).

Are all the resistances in the range from 160 ohms to 260 ohms?
Y N

      002
      Bad card
      Actuator coil driver card on drive C (10−160).

003
−Set Power to 1 (operator panel). Wait 30 seconds, and
  then press Reset (CE panel).
Measure for +5Vdc:
E−C1E2D02 (pos) to E−C1E2D08 (neg)
E−C1E2B03 (pos) to E−C1E2D08 (neg).
Are both the voltages more than 3.0V?
Y N

MAP DESCRIPTION:
This MAP isolates data unsafe problems caused by sample servo failures.

START CONDITIONS:
This MAP is entered when an oscilloscope is needed for FRU isolation.

LOGIC CARDS TESTED:
E−C1D2, actuator driver card, E−C1B2, E−C1E2, AND E−C1C2.

2 2
A B

004
Bad card
E-C1E2 (10-160).

005
Is an oscilloscope available?
Y N

  006
  Bad card
  E-C1E2
  ---or---
  E-C1B2
  ---or---
  E-C1D2
  ---or---
  E-C1C2
  ---or---
  E-C1F2
  ---or---
  actuator coil driver card on drive C (10-160).
  ---or---
  Bad drive C disk enclosure (10-030).

007
Using the TU Select option, select Drive C and execute TA169.

Use 1X probes.
Set the oscilloscope channel 1 probe on E-C1D2J09 (+shift reg clock).
Set the oscilloscope channel 2 probe on E-C1D2J10 (+enable sample servo).
Set the oscilloscope Ext. Trig probe on E-C1D2S10 (-sector).
Set oscilloscope controls as shown in table.

(Step 007 continues)

(Step 007 continued)

Horiz Display	A
Mag	Off
A Sweep Length	Full
A Time Base	5us/div
Mode	Alt
Trigger Source	Ext
Ch 1 Volts/div	2v/div
Ch 2 Volts/div	2v/div
A Sweep Mode	Normal Trig
A Trig Slope	-
A Trig Coupling	AC
Trig	Normal
A Trig Level	0
A Trig HF Stab	0
Invert	In

Set the Input Chan 1 switch to the Gnd position and adjust the position of the trace to the center line of the screen.
Set the Input Chan 1 switch to the DC position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the DC position.
Adjust the A triggering level to display trace.
Adjust the Horizontal position to start the trace at the left-hand line.
Is the display the same as in 10-400?
Y N

  008
  Bad card
  E-C1D2 (10-160).

009
Move the Chan 2 probe to E-C1D2U13 (+enable mark detect)
Set the Mode switch to the Chan 2 position.
Is the display the same as in 10-410?
Y N

> **010**
> Bad card
> E-C1D2 (10-160).

011
Move the Chan 1 probe to E-C1E2B03 (buffered analog data A).
Set the Chan 1 V/Div to the 20mV position.
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the AC position.
Compare servo gain field in 10-430 with display.

Is the servo gain field correct?
Y N

> **012**
> Bad card
> E-C1B2 (10-160)
> ---or---
> E-C1F2
> ---or---
> Bad drive C disk enclosure (10-030).

013
Move the Chan 2 probe to E-C1E2D02 (buffered analog data B).
Set the Chan 2 V/Div to the 20mV position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the AC position.
Set the Mode switch to the Chan 2 position.
Pull the Invert switch.
Compare servo gain field in 10-430 with display.

(Step 013 continues)

(Step 013 continued)
Is the servo gain field correct?
Y N

> **014**
> Bad card
> E-C1B2 (10-160)
> ---or---
> Bad drive C disk enclosure (10-030).

015
Move the Chan 1 probe to E-C1E2G03 (+servo inhibit VCO).
Set the Mode switch to the Chan 1 position.
Set the Chan 1 V/Div switch to 1V.
Is the display the same as in 10-420?
Y N

> **016**
> **Is the display the same as in 10-460?**
> Y N
>
> > **017**
> > Move the Chan 1 probe to E-C1E2J05 (-counter run).
> >
> > **Is the display the same as in 10-470?**
> > Y N
> >
> > > **018**
> > > Bad card
> > > E-C1E2 (10-160).
> >
> > **019**
> > Bad card
> > E-C1B2 (10-160)
>
> **020**
> Bad card
> E-C1E2 (10-160).

4
D

021
Move the Chan 1 probe to E-C1E2G08 (data servo 2F burst).
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the DC position.
Set the Chan 1 V/Div switch to 1V.

Is the display the same as in 10-440?
Y N

   022
   Is display a valid MST1 level (-0.8V to -1.8V)?
   Y N

      023
      Bad card
      E-C1E2 (10-160).

   024
   Bad card
   E-C1B2 (10-160)

025
Move the Chan 1 probe to E-C1E2B13 (data PES).
Set A time base to 2ms.
Move the Ext. Trig. probe to D2S13 (-index).
Adjust the A triggering level to display trace.

Does display compare with 10-450?
Y N

   026
   Bad card
   E-C1E2 (10-160).

027
Probe
E-C1E2J13 (+off data track).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   028
   Bad card
   E-C1E2 (10-160).
   ---or---
   actuator coil driver card on drive C (10-160).

029
Bad card
E-C1C2 (10-160).
---or---
actuator coil driver card on drive C (10-160).

E

030
(Entry Point B)

This MAP checks the disk speed by measuring the time
between index pulses.
Index pulses should be 18.6 to 19.8 milliseconds apart.

Place the oscilloscope probe on E-C1D2S13 (-index).
Set oscilloscope controls as shown in table.

```
.------------------------------------.
| B Sweep Mode        | B starts after|
|                     |   time delay  |
| Horiz Display       | A             |
| Mag                 | Off           |
| A Sweep Length      | Full          |
| A Time Base         | 2ms/div       |
| Mode                | Ch 1          |
| Trigger             | Ch 1 only     |
| Ch 1 Volts/div      | 2 (X1 probe)  |
| A Sweep Mode        | Auto Trig     |
| A Trig Slope        | -             |
| A Trig Coupling     | AC            |
| Trig Source         | Int           |
| A Trig Level        | 0             |
| A Trig HF Stab      | 0             |
------------------------------------
```

Set the Input Chan 1 switch to the Gnd position and
adjust the position of the trace to the center line of the
screen.
Set the Input Chan 1 switch to the DC position.
Adjust the Horiz position until the first pulse is on the
left division.
**Is the second pulse between 18.6ms and 19.8ms
after first pulse?**
Y N

   031
   Has this machine just been installed?
   Y N

6
F G H

032
Is the pulse early?
Y N

   033
   Disk speed too slow.
   Go To Map 1020, Entry Point A.

034
Bad card
E-C1D2 (10-160).

035
Check for correct motor rating (voltage and hertz) on
drive C.
Are both correct?
Y N

   036
   Exchange the incorrect part and run the disk MAPs
   again to verify that the disk is working correctly.

037
Is the pulse early?
Y N

   038
   Disk speed too slow.
   Go To Map 1020, Entry Point A.

039
Bad card
E-C1D2 (10-160).

040

Switch the B time base to 0.2ms.

Switch the Horiz display to A Inten during B.

Adjust the Delay time multiplier until the right-hand division of the trace is intensified.

Switch the Horiz display to delayed sweep (B).

Is the pulse between 0.6ms and 1.8ms from start of trace?

Y N

> **041**
>
> **Is the pulse after 1.8ms from start of trace?**
>
> Y N
>
> > **042**
> > Bad card
> > E-C1D2 (10-160).
>
> **043**
> Disk speed too slow.
> **Go To Map 1020, Entry Point A.**

044

Does the pulse timing change?

Y N

> **045**
> Bad card
> A-A2C2
> ---or---
> A-A2D2
> ---or---
> Bad top card connector

046

Disk speed is changing.

Go To Map 1020, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	B	3	008
1020	A	1	001
1021	A	1	001
1026	A	1	001
1049	A	1	001
1052	A	1	001
1064	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0511	A

001
(Entry Point A)

Meter the probe side of the C-B1J3 cable connector for correct voltages (05-210). See FSL YA180.

VOLTAGE	RANGE			PIN
+5Vdc	4.4V	to	5.6V	B03,B04,D03
-4Vdc	3.5V	to	4.5V	B13,D13
+12Vdc	10.5V	to	13.5V	B02
-12Vdc	10.5V	to	13.5V	D02
+24Vdc	21.6V	to	26.4V	B06,D06

Are the supply voltages in tolerance?
Y N

  002
  System power supply failure.
  Go To Map 0511, Entry Point A.

MAP DESCRIPTION:
This MAP isolates the disk power supply problems.

START CONDITIONS:
This MAP is entered from other disk FRU isolation MAPs when there is a power problem on the disk.

LOGIC CARDS TESTED:
E-C1B2, E-C1C2, E-C1D2, E-C1E2, E-C1F2, actuator driver card, board E-C1, and the disk DC power cable.

2
A

003
Measure for the following voltages on the E-C1 board:

```
 +5Vdc   E-C1F2D03
 -4Vdc   E-C1F2B06
+12Vdc   E-C1F2B11
-12Vdc   E-C1F2D12
+24Vdc   E-C1F2G02
```
Are all the voltages correct?
Y N

> **004**
> Measure voltages at board E-C1 voltage crossover
> cables (10-190):
>
> ```
>  +5Vdc   VC2-C  and  VC4-C
>  -4Vdc   VC2-B  and  VC4-B
> +12Vdc   VC1-C
> -12Vdc   VC1-D
> +24Vdc   VC5-C
> ```
> **Are all the voltages correct?**
> Y N
>
> > **005**
> > Repair or exchange the drive C DC power cable.
>
> **006**
> Bad board
> E-C1 (10-170).
> The netlists in MAP 1077 may be used to correct the
> bad net on board E-C1.

007
Bad board
E-C1 (10-170).
The netlists in MAP 1077 may be used to correct the
bad net on board E-C1.

008
(Entry Point B)
Jumper the following lines:

E-C1D2G10 (brake coil drive) to E-C1D2J08.
E-C1D2G11 (+brake applied to system) to E-C1C2J08.

Pull out cards:

E-C1B2, E-C1C2, E-C1D2, E-C1E2, and E-C1F2.

-Set Power to 1 (operator panel).

-Press Dply Pwr Chk (CE panel).
Remember the lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 (CE panel) on?
Y N

> **009**
> Reinstall cards E-C1B2, E-C1C2, E-C1D2, E-C1E2,
> and E-C1F2 one at a time, set the power switch on,
> and press the Dply Pwr Chk switch (CE panel). If the
> Display light bit 1 byte 0 (CE panel) is on, then the
> card that was just installed is bad.   Repeat the
> procedure until the bad card is isolated (see Note).
>
> Remove jumpers.

010
Disconnect the actuator driver card crossover cables
VC7, VC8, and VC10 (10-190).

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel) and note the
lights that are on in byte 0 of the CE panel (see Note).
Is the Display light bit 1 byte 0 on?
Y N

> **011**
> Remove all jumpers.
> Bad card
> Actuator coil driver card on drive C (10-160).

Note: Display light bit 1 byte 0 (CE panel) is on if a
power supply over current check has occurred.

4
B

05JAN81   PN 8266307

EC 835086   PEC -------

MAP 1024-3

012

Disconnect all the remaining board E-C1 crossover
cables (10-190).

Check for a short to ground at the following pins:

    +5Vdc   E-C1F2D03
    -4Vdc   E-C1F2B06
    +12Vdc   E-C1F2B11
    -12Vdc   E-C1F2D12
    +24Vdc   E-C1F2G02

Are any pins shorted to ground?

Y N

  013

  Remove all jumpers.

  Repair or exchange the drive C DC power cable.

014

Remove all jumpers.

Bad board

E-C1 (10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	B	3	004
1045	B	3	004
1046	A	1	001
1046	B	3	004
1047	B	3	004
1048	B	3	004
1048	C	11	093
1050	B	3	004
1050	E	13	105
1052	B	3	004
1053	B	3	004
1053	D	12	096
1054	B	3	004
1055	B	3	004
1056	B	3	004
1070	B	3	004
1071	B	3	004
1071	C	11	093

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	008	1020	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (1 ohm range)
E-C1F2S05 (CSR out) to E-C1F2U08.

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-C1C2, E-C1D2, E-C1E2, E-C1F2, and the actuator
driver card on board E-C1, and the disk enclosure for
disk drive C.

Note: An open circuit on net F2-23 could cause you to
enter this MAP. See netlist tables, MAP 1077.

Is the resistance less than 10 ohms?
Y N

2 2
A B

A B
1 1

002
Bad card
Actuator coil driver card on drive C (10-160).

003
Bad card
E-C1F2 (10-160).

004
(Entry Point B)

Is the Actuator Lock Knob on drive C unlocked?
Y N

> **005**
> Unlock the Actuator and run the disk MAPs again.

006
Observe the drive belt.

Note: An open circuit on the following nets C2-09, C2-11, D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18, F2-21, F2-24, and F2-28, could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the drive belt turning?
Y N

> **007**
> -Set Power to 0 (operator panel).
> -Set Power to 1 (operator panel).
> Wait for 30 seconds.
> **Is the drive belt turning?**
> **Y N**
>
> > **008**
> > **Go To Map 1020, Entry Point A.**
>
> **009**
> Run the disk drive MAPs to drive C using MDI special (99-090):
> -Select drive C.
> -Enter 1040 001 for the starting MAP.
> Wait for the MDI MAPs to stop.
> **Go to Page 4, Step 010, Entry Point F.**

4
C

010
(Entry Point F)

Note: Damage to the actuator in the disk enclosure can cause you to enter this MAP.

Probe E-C1C2J05 (+out).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

> **011**
> Probe E-C1C2U06 (-abs track address 1).
>
> ```
> Up    Light: On
> Down  Light: Off
> ```
>
> **Are the lights correct?**
> Y N
>
> > **012**
> > Probe E-C1C2U06 (-abs track address 1).
> >
> > ```
> > Up    Light: On or flashing
> > Down  Light: On or flashing
> > ```
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **013**
> > > Probe E-C1D2G13 (+normal error).
> > >
> > > ```
> > > Up    Light: On or flashing
> > > Down  Light: On or flashing
> > > ```
> > >
> > > **Are the lights correct?**
> > > Y N

```
6 6 5 5
D E F G H
```

014
Measure for +5Vdc (+Q/2 error).
E-C1D2J07 (pos)
E-C1D2J08 (neg).
Does the CE multimeter read -0.1V to +0.6V?
Y N

> **015**
> Bad card
> E-C1F2 (10-160).

016
Probe E-C1C2D13 (+behind home).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

> **017**
> Probe E-C1D2M08 (-calibration address).
>
> ```
> Up    Light: On
> Down  Light: Off
> ```
>
> **Are the lights correct?**
> Y N
>
> > **018**
> > Bad card
> > E-C1D2
> > ---or---
> > E-C1F2 (10-160).

019
Jumper E-C1F2P11 (-in drive) to E-C1F2P08.
Measure for +24Vdc.
E-C1F2M04(pos) to E-C1F2P08 (neg)
E-C1F2M05(pos) to E-C1F2P08 (neg).
Are both the voltages more than 20V?
Y N

```
5 5 5
J K L
```

G J K L
4 4 4 4

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

PAGE 5 OF 13

F
4

MAP 1025-5

020
Remove jumper.
Bad card
E-C1C2
---or---
E-C1F2
(10-160).

021
Remove jumper.
Bad card
Actuator coil driver card on drive C (10-160).

022
Probe E-C1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  023
  Bad card
  E-C1C2
  ---or---
  E-C1D2 (10-160).

024
Bad card
E-C1D2
---or---
E-C1F2 (10-160).

025
Bad card
E-C1D2
---or---
E-C1C2 (10-160).

026
Probe E-C1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  027
  Probe E-C1C2S05 (-count down 2 tracks).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    028
    Bad card
    E-C1C2 (10-160).

  029
  Bad card
  E-C1F2 (10-160).

030
Probe E-C1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  031
  Probe E-C1C2D13 (+behind home).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

6 6 6
M N P

05JAN81   PN 8266308
EC 835086 PEC -------
           MAP 1025-5

E M N P
4 5 5 5

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

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D Q
4

MAP 1025-6

032
Bad card
E-C1F2 (10-160).

033
Bad card
E-C1D2 (10-160).

034
Probe E-C1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

035
Bad card
E-C1D2
---or---
E-C1C2 (10-160).

036
Bad card
E-C1C2 (10-160).

037
Probe E-C1D2G13 (+normal error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

038
Bad card
E-C1D2 (10-160).

Q

039
Probe E-C1D2D05 (-count up 2 tracks).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

040
Bad card
E-C1F2 (10-160).

041
Bad card
E-C1D2 (10-160).

042
Probe E-C1C2U06 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

043
Probe E-C1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

044
Probe E-C1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

8 7 7 7
R S T U

045
Probe E-C1D2B05 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  046
  Measure for +5Vdc (coil current signal).
  E-C1D2B09 (pos)
  E-C1D2D08 (neg).
  Does the CE multimeter read +0.3 to -0.3V?
  Y N

    047
    Measure for -5Vdc (coil current signal).
    E-C1D2B09 (pos)
    E-C1D2D08 (neg).
    Does the CE multimeter read -0.3 to - 4.5V?
    Y N

      048
      Bad card
      Actuator coil driver card on drive C (10-160).

    049
    Bad card
    E-C1F2 (10-160).

050
Measure for +24Vdc (base PNP in).
E-C1F2U07 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

  051
  Bad card
  Actuator coil driver card on drive C (10-160).

052
Bad card
E-C1C2
---or---
E-C1D2
---or---
E-C1F2 (10-160).

053
Bad card
E-C1D2 (10-160).

054
Bad card
E-C1F2 (10-160).

055
Probe E-C1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  056
  Probe E-C1C2D13 (+behind home).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    057
    Measure for +5Vdc (-N/2 error).
    E-C1F2M08 (pos)
    E-C1F2P08 (neg).
    Does the CE multimeter read -0.3V to +0.3V?
    Y N

      058
      Bad card
      E-C1F2 (10-160).

V W

8 8 8
X Y Z
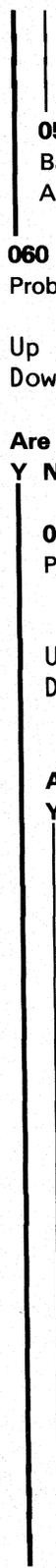
059
Bad card
Actuator coil driver card on drive C (10-160).

060
Probe E-C1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  061
  Probe E-C1D2B05 (-abs track address 1).

  Up   Light: Off
  Down Light: Off

  Are the lights correct?
  Y N

    062
    Measure for +5Vdc (coil current signal).
    E-C1D2B09 (pos)
    E-C1D2D08 (neg).
    Does the CE multimeter read -0.3V to +0.3V?
    Y N

      063
      Bad card
      Actuator coil driver card on drive C (10-160).

    064
    Measure for +24Vdc (base PNP in).
    E-C1F2U07 (pos)
    E-C1F2P08 (neg).
    Does the CE multimeter read more than 10V?
    Y N

065
Bad card
Actuator coil driver card on drive C
(10-160).

  066
  Bad card
  E-C1F2 (10-160).

  067
  Bad card
  E-C1D2 (10-160).

  068
  Bad card
  E-C1C2 (10-160).

069
Probe E-C1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  070
  Bad card
  E-C1F2 (10-160).

071
Bad card
E-C1C2 (10-160).

072
Probe E-C1F2P11 (-in drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

A A A A
A B C D

9 9
A A
E F

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EC 835086   PEC -------

MAP 1025-8

073
Probe E-C1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  074
  Probe E-C1F2P11 (-in drive).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    075
    Probe E-C1D2U11 (+behind home).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

      076
      Bad card
      E-C1D2
      ---or---
      E-C1E2 (10-160).

    077
    Bad card
    E-C1F2 (10-160).

  078
  Measure for +5Vdc (coil current signal):
  E-C1D2B09 (pos)
  E-C1D2D08 (neg).
  Does the CE multimeter read -0.3V to +0.3V?
  Y N

A A A
G H J

A A A A
E G H J
8

MAP 1025-9

      079
      Bad card
      E-C1F2 (10-160).

    080
    Bad card
    E-C1D2
    ---or---
    E-C1F2 (10-160).

  081
  Measure for -5Vdc (integrator output):
  E-C1F2P04 (pos)
  E-C1F2P08 (neg).
  Does the CE multimeter read +0.3V to -4.5V?
  Y N

    082
    Bad card
    E-C1F2 (10-160).

  083
  Bad card
  E-C1D2
  ---or---
  E-C1F2 (10-160).

084
Probe
E-C1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

1 1
0 0
A A
K L

085
Probe
E-C1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  086
  Bad card
  E-C1D2 (10-160).

087
Bad card
E-C1F2 (10-160).

088
Measure for +24Vdc (base PNP in).
E-C1F2U07 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

  089
  Bad card
  Actuator coil driver card on drive C (10-160).

090
Measure for +5Vdc (+Q/2 error).
E-C1D2J07 (pos)
E-C1D2J08 (neg).
Does the CE multimeter read 0V TO 0.5V?
Y N

  091
  Bad card
  E-C1F2
  ---or---
  Actuator coil driver card on drive C (10-160).

092
Bad card
E-C1F2
---or---
E-C1D2 (10-160).

A
M

093
(Entry Point C)

Is the Actuator Lock Knob on drive C unlocked?
Y N

┃ **094**
┃ Unlock the Actuator and run the disk MAPs again.

095
Bad card
E-C1C2
---or---
E-C1D2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

096

(Entry Point D)

-Set Power to 0 (operator panel).
Measure the resistance from E-C1F2J08 to E-C1F2J05
(clock threshold).
Is the resistance greater than 200 ohms?
Y N

> **097**
> Disconnect VC3 on board E-C1.
> Measure the resistance of the disk enclosure
> resistors (1 ohm range) VC3-C to VC3-D (10-190).
> **Is the resistance greater than 150 ohms?**
> Y N
>
> > **098**
> > Reinstall connector VC3.
> > Bad drive C disk enclosure (10-030).
>
> **099**
> There is a short circuit to ground on pins C and D of
> VC3 connector (10-190).

100

Jumper E-C1D2P07 (+brake applied) to E-C1D2P08.
-Set Power to 1 (operator panel).
Probe E-C1F2B04 (+servo clock SS).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

> **101**
> Remove jumper.
> Bad card
> E-C1F2 (10-160).

Note: An open circuit on net F2-02 could cause you to
enter this MAP. See netlist tables, MAP 1077.

1
3
A
N

102
Probe E-C1D2G05 (+servo clock SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

| **103**
| Bad board
| E-C1 (10-170).

104
Remove jumper.
Bad jumpers on card E-C1D2
---or---
Bad card
E-C1D2 (10-160).

105
(Entry Point E)

Is the Actuator Lock Knob on drive C unlocked?
Y N

| **106**
| Unlock the Actuator and run the disk MAPs again.

107
Bad card
E-C1D2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	E	8	053
1046	D	6	036
1046	E	8	053
1047	D	6	036
1049	A	1	001
1049	B	3	010
1051	A	1	001
1051	B	3	010
1052	A	1	001
1053	A	1	001
1053	B	3	010
1053	C	5	025

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	1020	A
4	017	1020	A
5	029	1024	A

001
(Entry Point A)

-Set Power to 0 (operator panel).

Jumper E-C1D2G10 (brake coil drive) to E-C1D2D08.
Jumper E-C1D2G11 (+brake applied to system) to E-C1D2J08.

-Set Power to 1 (operator panel).

Wait for 2 to 3 minutes and then observe the drive motor (see note).

Is the motor turning?
Y N

2 2
A B

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on nets B2-18, D2-05, E2-06, and F2-20 could cause you to enter this MAP. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-C1B2, E-C1C2, E-C1D2, E-C1E2, E-C1F2, cables E-C1A2, E-C1A3, E-C1A4 and the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

002
Remove all jumpers.
Go To Map 1020, Entry Point A.

003
Reseat cable E-C1A2.
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Switch probe to MST 1,
Probe E-C1E2G12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  004
  Remove all jumpers.
  Bad card
  E-C1E2 (10-160).

005
Switch probe to Multi.

Probe E-C1D2J05 (1F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  006
  Remove all jumpers.
  Bad card
  E-C1B2 (10-160)

007
Do the following in order:

1. -Set Power to 0 (operator panel).
2. Jumper E-C1F2P02 (-power on delay) to E-C1F2P08.
3. -Set Power to 1 (operator panel).
4. Remove jumper E-C1F2P02 to E-C1F2P08.
5. Run the disk drive MAPs using MDI special (99-090), and return to this step after the MAPs stop.
-Select drive C.
-Enter 1040 001 for the starting MDI ID and step number.
Did disk MAPs run without errors?
Y N

  008
  Remove all jumpers.
  Bad jumpers on card E-C1D2
  ---or---
  Bad card
  E-C1D2
  ---or---
  E-C1E2 (10-160).

009
Remove all jumpers.
Bad card
E-C1F2
---or---
E-C1D2 (10-160).

C

010
(Entry Point B)

Measure for -8Vdc:
E-C1F2B10 (pos)
E-C1A2D08 (neg).
Does the CE multimeter read -7V to -9V?
Y N

> **011**
> Check for continuity of E-C1A2B10 to E-C1A2B12 to
> E-C1A2D09 to E-C1A2D13 to E-C1F2S04.
> **Is the continuity OK?**
> Y N
>
> > **012**
> > Bad board
> > E-C1 (10-170).
>
> **013**
> Remove E-C1E2.
> -Set Power to 1 (operator panel).
> Measure for -8 Vdc:
> E-C1F2B10 (pos)
> E-C1A2D08 (neg)
> **Does the CE multimeter read -7V to -9V?**
> Y N
>
> > **014**
> > Reinstall original E-C1E2.
> > Bad card E-C1F2.
>
> **015**
> Bad card
> E-C1E2.

Note: An open circuit on nets A2-07, A2-08, and F2-22 could cause you to enter this MAP. See netlist tables, MAP 1077.

4
D

016
-Set Power to 0 (operator panel).
Add the following jumpers:
E-C1D2G10 (brake coil drive) to E-C1D2D08
E-C1D2G11 (+brake applied to system) to E-C1D2J08.
-Set Power to 1 (operator panel).
Wait for 2 minutes and then observe the drive motor.
Is the drive motor turning?
Y N

   017
   Remove all jumpers
   Go To Map 1020, Entry Point A.

018
Probe E-C1D2J02 (-osc late) and E-C1D2B13 (-osc early).

Up   Light: Off
Down Light: On

Are the lights correct for either line?
Y N

   019
   Probe E-C1D2J02 (-osc late) and E-C1D2B13
   (-osc early).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      020
      Remove all jumpers.
      Bad card
      E-C1F2 (10-160).
      ---or---
      Bad drive C disk enclosure (10-030).

021
Switch probe to MST 1,
Probe E-C1E2G12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   022
   Remove all jumpers.
   Bad card
   E-C1E2 (10-160).

023
Remove all jumpers.
Bad card
E-C1F2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

024
Remove all jumpers.
Bad card
E-C1F2
---or---
E-C1D2 (10-160).

E F

025
(Entry Point C)

Measure for -7Vdc:
E-C1F2U10 (pos)
E-C1F2U08 (neg).
Does the CE multimeter read -6V to -8V?
Y N

> **026**
> Remove E-C1E2.
> -Set Power to 1 (operator panel).
> Measure for -7 Vdc:
> E-C1F2U10 (pos)
> E-C1F2U08 (neg)
> **Does the CE multimeter read -6V to -8V?**
> Y N
>
> > **027**
> > Reinstall original E-C1E2.
> > Measure for -12Vdc:
> > E-C1F2U12 (pos)
> > E-C1F2U08 (neg).
> > **Does the CE multimeter read -10.5V to -13.5V?**
> > Y N
> >
> > > **028**
> > > Measure for -12Vdc:
> > > VC1-D (pos).
> > > E-C1F2U12 (neg).
> > > **Does the CE multimeter read -10.5V to -13.5V?**
> > > Y N
> > >
> > > > **029**
> > > > **Go To Map 1024, Entry Point A.**
> > >
> > > **030**
> > > Bad board
> > > E-C1 (10-170).
> >
> > **031**
> > Bad card
> > E-C1F2 (10-160).

G H

032
Bad card
E-C1E2.

033
Check continuity from E-C1F2U10 to E-C1F2P10 to E-C1F2J10 to E-C1F2D10 to E-C1E2D10.
Is the continuity OK?
Y N

> **034**
> Bad board
> E-C1 (10-170).

035
Bad card
E-C1F2
---or---
E-C1D2 (10-160).

G H

L

MAP 1026-6

036
(Entry Point D)
Jumper E-C1A5D04 (-data select) to E-C1B2U08.
Probe E-C1C2U12 (+write select).

Note: An open circuit on nets A5-04, A5-09, A5-11, C2-32, and E2-02 could cause you to enter this MAP. See netlist tables, MAP 1077.

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  037
  Jumper E-C1C2G12 (-write) to E-C1C2J08.
  Probe E-C1C2U12 (+write select).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    038
    Remove all jumpers.
    Bad card
    E-C1C2 (10-160).

  039
  Probe E-C1E2B13 (data PES).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

7 7
J K L

040
Remove all jumpers.
Check for an open or a short to ground on drive C dedicated cable nets (-write), (-write data), (+write gate return), and (-reset error). See MAP 1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

  041
  -Set Power to 1 (operator panel).
  Probe A-A2B4D06 (-reset error).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    042
    Probe A-A2B4D11 (-write) and A-A2B4B10 (-write data).

    Up   Light: Off
    Down Light: Off

    Are the lights correct for either line?
    Y N

      043
      Probe A-A2B4D11 (-write) and A-A2B4B10 (-write data).

      Up   Light: Off
      Down Light: On

      Are the lights correct for either line?
      Y N

7 7 7 7 7
M N P Q R

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EC 835086   PEC -------

MAP 1026-6

M N P Q R   **FRU ISOLATION MAP 2**   J K   MAP 1026-7
6 6 6 6 6
           5340 SYSTEMS UNIT   6 6

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044
Using the TU Select option (99-065), select
drive C and loop on TA170.
Probe A-A2B4D11 (-write) and A-A2B4B10
(-write data).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

    045
    Bad card
    A-A2C2.
    ---or---
    Bad top card connector.

046
Bad card
E-C1B2
---or---
E-C1E2 (10-160)
---or---
A-A2C2

047
Bad card
A-A2C2.

048
Bad card
E-C1B2 (10-160)

049
Bad card
A-A2D2.

050
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

051
Remove all jumpers.
Bad card
E-C1E2 (10-160).

052
Remove jumper
Bad card
E-C1C2 (10-160).

053
(Entry Point E)
Probe E-C1D2P10 (+home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  054
  Check continuity from A-A2A5D04 to E-C1A3D04
  (-control bus bit 0).
  Is the continuity OK?
  Y N

    055
    Bad cable. E-C1A3 (10-150).

  056
  Bad card
  E-C1C2 (10-160).

057
Bad card
E-C1C2
---or---
E-C1D2 (10-160).

Note: An open circuit on net D2-37 could cause you to
enter this MAP. See netlist tables, MAP 1077.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	A	1	001
1046	A	1	001
1046	C	5	037
1046	D	7	046
1047	A	1	001
1048	A	1	001
1049	A	1	001
1050	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1063	B	5	034

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on the following nets could cause you to enter this MAP: A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, and VC-07. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-C1F2, E-C1C2, E-C1D2, E-C1B2, E-C1E2, board E-C1, cables E-C1A4 and E-C1A5, and the disk enclosure.

Is the Actuator Lock Knob on drive C unlocked?
Y N

   002
   Unlock the Actuator and run the disk MAPs again.

2
A

A
1

F

MAP 1027-2

003
Probe E-C1C2B13 (-shift).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

   004
   Probe E-C1C2B13 (-shift).

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

      005
      Jumper E-C1A5D04 (-data select) to E-C1A5D08.
      Probe E-C1B2U11 (write clock).

      Up   Light: On or flashing
      Down Light: On or flashing

      Are the lights correct?
      Y N

         006
         Probe E-C1B2P12 (+data select gated).

         Up   Light: On
         Down Light: Off

         Are the lights correct?
         Y N

007
Check for continuity (1 ohm range).
E-C1A2D02 to E-C1A2B13 (+data select gated).
Is the continuity OK?
Y N

   008
   Remove jumper.

   Reseat cable E-C1A2.
   ---or---
   Bad drive C disk enclosure (10-030).
   Note: A temporary repair is to add a jumper from
   E-C1B2P12 to E-C1C2S12.

009
Check continuity from E-C1C2S12 to E-C1B2P12
(+data select gated).
Is the continuity OK?
Y N

   010
   Remove jumper.
   Bad board
   E-C1 (10-170).

011
Check for continuity of drive C (-data select). See MAP
1077, Dedicated Cable Wiring Checks.
Is the continuity OK?
Y N

   012
   Remove jumper.
   Exchange the bad card, cable, or board found in the
   preceding step (10-150, 10-160, 10-170).

4 4 3 3
B C D E F

3
G

D E G
2 2 2

013
Remove jumper.
Bad card
E-C1C2
---or---
E-C1B2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

014
Check for an open or a short to ground on drive C
(write clock) and (-sector). See MAP 1077,
Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

015
Remove jumper.
Bad card
E-C1B2 (10-160)
---or---
Open or short to ground on +read data, -write
data, +write gate return, -fast sync, read clock or
write clock. See MAP 1077, Dedicated Cable
Wiring Checks.

016
Remove jumper.
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

017
Remove jumper.

Switch probe to MST 1,
Probe E-C1B2S11 (-increase) and E-C1B2S12
(-decrease).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

H J

H J

018
Bad card
E-C1B2 (10-160)

019
Switch probe to Multi.

Probe E-C1C2B13 (-shift).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

020
Measure for +5Vdc (compensation coil):
E-C1D2D04 (pos)
E-C1D2D08 (neg).
Does the CE multimeter read 1.0V to 1.6V?
Y N

021
Remove card E-C1D2.

Measure the resistance (10X range):
E-C1D2D04 (pos)
E-C1D2D08 (neg).
Is the resistance greater than 200 ohms?
Y N

022
Bad drive C disk enclosure (10-030).

023
Bad card
E-C1D2 (10-160).

MAP 1027-3

4 4
K L

024
Bad card
E-C1F2
---or---
E-C1E2
---or---
E-C1D2 (10-160).

025
Check for an open or a short to ground on drive C
(-sector), (-write), and (-fast sync). See MAP
1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

    026
    Bad jumpers on card E-C1D2
    ---or---
    Bad card
    E-C1D2
    ---or---
    E-C1F2
    ---or---
    E-C1C2 (10-160).

    027
    Exchange the bad card, cable, or board found in
    the preceding step (10-150, 10-160, 10-170).

028
Bad card
E-C1C2 (10-160).

029
Switch probe to MST 1,
Probe E-C1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

M N

030
Bad card
E-C1B2 (10-160)

031
Verify probe at MST 1.
Probe E-C1B2S11 (-increase) and E-C1B2S12
(-decrease).

Up   Light: Off
Down Light: Off

Are the lights correct for either of the lines?
Y N

    032
    Bad card
    E-C1F2
    ---or---
    E-C1E2
    ---or---
    E-C1D2 (10-160).

033
Bad card
E-C1B2 (10-160)

034
(Entry Point B)

Check for continuity E-C1B2D08 to E-C1C2D08.
Is the continuity OK?
Y N

> **035**
> Bad board
> E-C1 (10-170).

036
Bad card
E-C1B2 (10-160)

037
(Entry Point C)

Measure for +12Vdc (profile gain voltage):
E-C1C2B02 (pos)
E-C1C2D08 (neg).

Note: An open circuit on nets C2-02 and D2-03 could cause you to enter this MAP. See netlist tables, MAP 1077.
Does the CE multimeter read more than 1.5V?
Y N

> **038**
> Measure the resistance from VC9-D to VC9-C on drive C (10-190).
> **Is resistance in range from 300 ohms to 400 ohms?**
> Y N
>
>> **039**
>> Bad drive C disk enclosure (10-030).
>
> **040**
> Bad card
> E-C1D2 (10-160).

041
Disconnect the voltage connector VC9 (10-190).
Measure for +5Vdc (desired velocity):
E-C1C2D02 (pos)
E-C1C2D08 (neg).
Does the CE multimeter read less than 0.3V?
Y N

> **042**
> **Does the CE multimeter read more than 5V?**
> Y N
>
>> **043**
>> Reinstall connector VC9.
>> Bad card
>> E-C1D2 (10-160).

044
Reinstall connector VC9.
Bad card
E-C1C2 (10-160).

045
Reinstall connector VC9.
Bad card
E-C1C2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

046
(Entry Point D)

Measure for -12Vdc (write current defining resistor):
E-C1B2D04 (pos)
E-C1B2D08 (neg).
Does the CE multimeter read between -10.5V and -13.5V?
Y N

> **047**
> Bad card
> E-C1B2 (10-160)

048
Measure for -4Vdc (write current):
E-C1B2D07 (pos)
E-C1B2D08 (neg).
Does the CE multimeter read between -3.5V to -4.5V?
Y N

> **049**
> Bad card
> E-C1B2 (10-160)
> ---or---
> Bad drive C disk enclosure (10-030).

050
Is cable E-C1A2 seated correctly (10-190)?
Y N

> **051**
> Reseat the cable and run the disk MAPs again.

Note: An open circuit on the following nets A2-02, B2-04, B2-08, B2-10, B2-13, C2-10, and V-04 could cause you to enter this MAP. See netlist tables, MAP 1077.

8
R

052

Probe the pins shown in Table 4.

```
.-----------Table 4 --------------.
| Note: All probing on board E-C1 |
|                                 |
| Probe MST 1 |     Probe Multi    |
|A2B03   A2B04 |A2B06 A2B05   A2B02 |
|  D       D   |  U     U       D   |
 ---------------------------------
```

Are the lights correct?
Y N

053

Probe the pins shown in Table 1 and check the results of the probing against the entries in the table. If the results match, that head is selected (see Note 1).

```
.------------ Table 1 -------------.
| Note: All probing on board E-C1  |
|                                  |
|    | Probe MST1|   Probe Multi    |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0    U     U    D     U     U  |
| 1    D     U    D     U     U  |
| 2    U     D    D     U     U  |
| 3    D     D    D     U     U  |
| 4    U     U    U     D     U  |
| 5    D     U    U     D     U  |
| 6    U     D    U     D     U  |
| 7    D     D    U     D     U  |
| 8    U     U    U     U     D  |
| 9    D     U    U     U     D  |
|10    U     D    U     U     D  |
|11    D     D    U     U     D  |
 ----------------------------------
```

Was a valid head selected?
Y N

9   9   9
S   T   U

Note 1:
U Means- Up   Light: On
          Down Light: Off
D Means- Up   Light: Off
          Down Light: On

054

Probe the pins in Table 2 to determine which head is selected (see Note 1).

```
.----------- Table 2 ------------.
| Note: All probing on board E-C1|
|                                 |
|                Probe Multi      |
| Head|B2P07 B2P05|B2P10 B2P06    |
|  0    U     U     U     U       |
|  1    D     U     U     U       |
|  2    U     D     U     U       |
|  3    D     D     U     U       |
|  4    U     U     D     U       |
|  5    D     U     D     U       |
|  6    U     D     D     U       |
|  7    D     D     D     U       |
|  8    U     U     U     D       |
|  9    D     U     U     D       |
| 10    U     D     U     D       |
| 11    D     D     U     D       |
--------------------------------
```

Was a valid head selected?

Y N

> **055**
> Bad card
> E-C1C2 (10-160).

056

Go to Step 060, Entry Point E.

057

Bad card

E-C1B2 (10-160)

---or---

Bad drive C disk enclosure (10-030).

058

Probe E-C1C2G12 (-write).

Up   Light: On
Down Light: Off

Are the lights correct?

Y N

> **059**
> Bad card
> A-A2C2
> ---or---
> Short on -write net. See dedicated cable wiring checks..

060

(Entry Point E)

Measure the resistance (10 ohm range) from E-C1A2D04 (actuator I/O line B) to E-C1A2D05 (actuator I/O line A).

Is the resistance less than 300 ohms?

Y N

> **061**
> Bad drive C disk enclosure (10-030).

062

-Set Power to 1 (operator panel).

Add a jumper from E-C1C2G11 (+write block) to E-C1C2J08.

Using the TU Select option (99-065), select drive C and loop on TA169.

Probe E-C1C2M11 (+data unsafe).

Up   Light: On
Down Light: Off

Are the lights correct?

Y N

1 1
0 0
V W

063
Remove jumper.
Bad card
E-C1C2 (10-160).

064
Remove jumper.
Bad card
E-C1B2 (10-160)
---or---
Bad drive C disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	A	1	001
1050	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1083	A
2	010	1083	A
2	012	1083	A

001
(Entry Point A)
Probe A-A2B5D04 (-data select)

Up   Light: On
Down Light: Off

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-C1B2, E-C1C2, E-C1F2, E-C1E2, and E-C1D2, cables
E-C1A4 and E-C1A5, and the drive C disk enclosure.

Note: An open circuit on nets A5-10, B2-07, B2-11,
C2-12 C2-13, C2-25, C2-26, D2-07, D2-42, E2-04, and
V-04 could cause you to enter this MAP. See netlist
tables, MAP 1077.

Are the lights correct?
Y N

  002
  Bad card
  A-A2C2
  ---or---
  A-A2D2
  ---or---
  Bad top card connector
  ---or---
  Short to Ground on drive D (-data select). See MAP
  1077, Dedicated Cable Wiring Checks.

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2
A

003
Probe A-A2A4D04 (-data select)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  004
  Bad card
  A-A2C2
  ---or---
  A-A2D2
  ---or---
  Bad top card connector
  ---or---
  Short to Ground on drive A (-data select). See MAP
  1077, Dedicated Cable Wiring Checks.

005
Probe A-A2B6A02 (-data select) (see FSL AB300)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  006
  Bad card
  A-A2C2
  ---or---
  A-A2D2
  ---or---
  Bad top card connector
  ---or---
  Short to Ground on drive B (-data select). See MAP
  1077, Dedicated Cable Wiring Checks.

B

007
Probe A-A2B5B04 (-interrupt)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  008
  Go To Map 1083, Entry Point A.

009
Probe A-A2A4B04 (-interrupt)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  010
  Go To Map 1083, Entry Point A.

011
Probe A-A2B6A04 (-interrupt) (see FSL AB300)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  012
  Go To Map 1083, Entry Point A.

3
C

C
2

013
Jumper E-C1A5D04 (-data select) to E-C1B2U08.
Probe E-C1A5B05 (-sector).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **014**
> Check for an open or a short to ground on drive C
> (-sector). See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **015**
> > Remove cable E-A1A5.
> > -Set Power to 1 (operator panel).
> > Probe A-A2A4B05 (-sector).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **016**
> > > Reinstall the cable.
> > > Bad card
> > > A-A2C2.
> >
> > **017**
> > Reinstall the cable.
> > Bad card
> > E-C1D2 (10-160).

018
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

Note: Remove this jumper when leaving this MAP.
Failure to do so will result in a WRAP error on each of
the remaining disk drives.

4
D

019
Probe E-C1A5D12 (write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  020
  Probe E-C1C2S12 (+data select gated).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    021
    Disconnect cable E-C1A2.
    -Set Power to 1 (operator panel).
    Wait 30 seconds, and then press Reset (CE panel).
    Probe E-C1C2S12 (+data select gated).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

      022
      Reinstall all cables.
      Bad card
      E-C1C2 (10-160).

    023
    Bad card
    E-C1B2 (10-160)
    ---or---
    Bad drive C disk enclosure (10-030).

024
Probe E-C1B2P12 (+data select gated).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  025
  Check for continuity
  E-C1C2S12 to E-C1B2P12 (+data select gated).
  Is the continuity OK?
  Y N

    026
    Bad drive C disk enclosure (10-030).
    Note: A temporary repair is to add a jumper from
    E-C1C2S12 to E-C1B2P12.

  027
  Bad card
  E-C1B2 (10-160)

028
Check for an open or a short to ground on drive C
(write clock). See MAP 1077, Dedicated Cable Wiring
Checks.
Was an open or a short found?
Y N

  029
  Bad card
  E-C1B2 (10-160)
  ---or---
  A-A2C2.

030
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

5
E F

031
Probe E-C1B2P09 (-chip select 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   032
   Probe E-C1B2P06 (-head select 8) and E-C1B2P10
   (-head select 4).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

     033
     Bad card
     E-C1C2 (10-160).

   034
   Probe E-C1B2M05 (-FH select).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

     035
     Bad card
     E-C1B2 (10-160)

   036
   Bad card
   E-C1C2 (10-160).

G

037
Probe E-C1C2B06 (-go home or POFL).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   038
   Bad card
   E-C1D2
   ---or---
   E-C1C2 (10-160).

039
Switch probe to MST 1,
Probe E-C1B2P04 (-head select B).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   040
   Probe the pins shown in the following table and
   determine which head is selected by matching the
   probe results against the table. If the results match,
   that head is selected (see Note 1).

(Step 040 continues)

7
H

(Step 040 continued)

```
.------------ Table 1 ------------.
| Note: All probing on board E-C1 |
|                                 |
|    | Probe MST1|  Probe Multi    |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0    U     U     D     U     U  |
| 1    D     U     D     U     U  |
| 2    U     D     D     U     U  |
| 3    D     D     D     U     U  |
| 4    U     U     U     D     U  |
| 5    D     U     U     D     U  |
| 6    U     D     U     D     U  |
| 7    D     D     U     D     U  |
| 8    U     U     U     U     D  |
| 9    D     U     U     U     D  |
|10    U     D     U     U     D  |
|11    D     D     U     U     D  |
  -------------------------------
```

Note:
U Means- Up   Light: On
          Down Light: Off
D Means- Up   Light: Off
          Down Light: On

Was a valid head selected?
Y N

  041
  Bad card
  E-C1B2 (10-160)

J

J

MAP 1028-6

042
Note head selected from Table 1.

Probe the pins in the following table to determine which head is selected.

```
.----------- Table 2 -----------.
| Note: All probing on board E-C1|
|                                |
|      Probe Multi               |
| Head|B2P07 B2P05|B2P10 B2P06   |
|  0    U     U     U     U      |
|  1    D     U     U     U      |
|  2    U     D     U     U      |
|  3    D     D     U     U      |
|  4    U     U     D     U      |
|  5    D     U     D     U      |
|  6    U     D     D     U      |
|  7    D     D     D     U      |
|  8    U     U     U     D      |
|  9    D     U     U     D      |
| 10    U     D     U     D      |
| 11    D     D     U     D      |
  ------------------------------
```

Note:
U Means- Up   Light: On
          Down Light: Off
D Means- Up   Light: Off
          Down Light: On

Was the same head selected both times?
Y N

  043
  Bad card
  E-C1B2 (10-160)

044
Was head three selected?
Y N

7 7
K L

05JAN81   PN 8266311

EC 835086   PEC -------

MAP 1028-6

H K L
5 6 6

FRU ISOLATION MAP 4

5340 SYSTEMS UNIT

PAGE 7 OF 13

M   MAP 1028-7

045
Bad card
E-C1C2 (10-160).
---or---
Bad drive C disk enclosure (10-030).

046
Bad card
E-C1B2
---or---
E-C1C2 (10-160)
---or---
Bad drive C disk enclosure (10-030).

047
Measure for +5Vdc (VCO error signal):
E-C1B2U13 (pos)
E-C1B2P08 (neg).
Does the CE multimeter read between 0V and 0.5V?
Y N

   048
   Verify probe at MST 1.
   Probe E-C1B2U06 (+servo inhibit VCO).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      049
      Bad card
      E-C1E2 (10-160).

   050
   Bad card
   E-C1B2 (10-160)

M

051
Switch probe to Multi.

With the power on, remove cable E-C1A5.
Probe E-C1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   052
   Reinstall all cables.
   Bad card
   E-C1C2 (10-160).

053
Reinstall the cable with the power on.
Probe E-C1C2G06 (-FH not selected)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   054
   Bad card
   E-C1C2 (10-160).

055
Switch probe to MST 1,
Probe E-C1B2P13 (standarized data) and E-C1B2S09
(1F read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

8 8
N P

056
Check for an open or a short to ground on drive C
(-read).   See MAP 1077, Dedicated Cable Wiring
Checks.
Was an open or a short found?
Y N

> **057**
> Bad card
> E-C1B2
> ---or---
> E-C1D2
> (10-160).

058
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

059
Switch probe to Multi.

Probe A-A2C2M04 (+read data).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **060**
> Check for an open or a short to ground on drive C
> (+read data).   See MAP 1077, Dedicated Cable
> Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **061**
> > Bad card
> > E-C1B2
> > ---or---
> > A-A2C2.

Q R

062
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

063
Probe A-A2B4D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **064**
> Check for an open or a short to ground on drive C
> (-index).   See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **065**
> > Remove cable E-A1A5.
> > -Set Power to 1 (operator panel).
> > Probe A-A2A4D07 (-index).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **066**
> > > Reinstall all cables.
> > > Bad card
> > > A-A2C2.
> >
> > **067**
> > Reinstall all cables.
> > Bad card
> > E-C1D2 (10-160).

068
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

9
S

MAP 1028-8

069
Measure the following for +5Vdc (AGC reference and control voltages):
E-C1B2G02 (pos) to E-C1B2J08 (neg)
E-C1B2J02 (pos) to E-C1B2J08 (neg).
Does the CE multimeter read 1.2V to 1.9V?
Y N

  070
  Bad card
  E-C1B2 (10-160)

071
Switch probe to MST 1,
Probe E-C1E2B13 (data PES).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  072
  Measure for +2Vdc:
  E-C1B2S10 (pos)
  E-C1B2U08 (neg).
  Does the CE multimeter read 1.5V to 2.5V?
  Y N

    073
    Bad card
    E-C1B2 (10-160)

  074
  Bad card
  E-C1E2
  ---or---
  E-C1B2 (10-160).

075
Switch probe to Multi.

Probe E-C1B2U07 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  076
  Check for short to ground on drive C (read clock).
  See MAP 1077, Dedicated Cable Wiring Checks.
  Was a short found?
  Y N

    077
    Bad card
    E-C1B2 (10-160)
    ---or---
    A-A2C2.

  078
  Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

079
Using the TU Select option (99-065), select drive C and loop on TA170.
Probe E-C1B2S02 (-fast sync).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

05JAN81   PN 8266311

EC 835086   PEC -------

MAP 1028-9

1 1
1 0
U V

T

080
Probe E-C1A5B03 (-control sample).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **081**
> Bad card
> E-C1C2
> ---or---
> E-C1D2
> ---or---
> E-C1F2 (10-160).

082
Probe E-C1D2D06 (+out direction).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **083**
> Switch probe to MST 1,
> Probe E-C1B2U06 (+servo inhibit VCO)
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N

W X Y

084
Switch probe to Multi.
Probe E-C1A5B09 (-missing sector pulse).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **085**
> Check for an open or a short to ground on
> drive C (-fast sync), (read clock), (write clock),
> (-index), and (-sector).   See MAP 1077,
> Dedicated Cable Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **086**
> > Bad card
> > A-A2C2
> > ---or---
> > E-C1B2.
>
> **087**
> Exchange the bad card, cable, or board found
> in the preceding step (10-150, 10-160,
> 10-170).

088
Bad card
E-C1D2 (10-160).
---or---
Short to ground on drive C
(-missing sector pulse).   See MAP 1077,
Dedicated Cable Wiring Checks.

089
Bad card
E-C1B2 (10-160)

090
Bad card
E-C1D2 (10-160).

091
Probe E-C1C2J11 (-read).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **092**
> Check for an open or a short to ground on drive C
> (-read).   See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **093**
> > Remove cable E-C1A5.
> > -Set Power to 1 (operator panel).
> > Probe E-C1A5D09 (-read).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **094**
> > > Bad card
> > > E-C1C2 (10-160).
> >
> > **095**
> > Bad card
> > A-A2D2
> > ---or---
> > A-A2C2
> > ---or---
> > Bad top card connector
>
> **096**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

097
Probe E-C1B2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **098**
> Probe E-C1C2J12 (+read select).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **099**
> > Bad card
> > E-C1C2
> > ---or---
> > E-C1B2 (10-160).
>
> **100**
> Bad board
> E-C1 (10-170).

101
Probe E-C1C2B05 (-tag 010 CS).

Up   Light: On or flashing
Down Light: On or flashing

Note:
Observe for one minute.
Are the lights correct?
Y N

> **102**
> Bad card
> E-C1C2 (10-160).

1
2
A
A
A

Z

MAP 1028-12

103
Probe A-A2C2J12 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **104**
> Check for an open or a short to ground on drive C
> (read clock).   See MAP 1077, Dedicated Cable
> Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **105**
> > Bad card
> > E-C1B2 (10-160)
> > ---or---
> > A-A2C2.
>
> **106**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

107
Switch probe to MST 1,
Probe E-C1A2B03 (-head select A) and E-C1A2B04
(-head select B).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

A A
B C

108
Switch probe to Multi.

Probe E-C1B2P05 (-head select 2) and E-C1B2P07
(-head select 1)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **109**
> Bad card
> E-C1C2 (10-160).

110
Bad card
E-C1B2 (10-160)
---or---
Bad drive C disk enclosure (10-030).

111
Remove jumper.
Switch probe to Multi.
Probe E-C1A5D04 (-data select).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

> **112**
> Bad card
> A-A2C2.
> ---or---
> Open on drive C (-data select).   See MAP 1077,
> Dedicated Cable Wiring Checks.

113
Check for continuity on drive C (-data select),
(-fast sync), (-index), (-sector), (-read),
(read clock), and (+read data). See MAP 1077,
Dedicated Cable Wiring Checks.
Was an open found?
Y N

    114
    Bad card
    A-A2C2
    ---or---
    E-C1B2.
    ---or---
    E-C1C2
    ---or---
    E-C1F2 (10-160)
    ---or---
    Bad drive C disk enclosure (10-030).

115
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	A	1	001
1045	A	1	001
1047	A	1	001
1049	A	1	001
1050	A	1	001
1051	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1057	A	1	001
1071	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-C1F2, Actuator driver card, E-C1D2, E-C1E2, and E-C1C2.

Note:
An open circuit on nets D2-15,D2-16,D2-43 F2-19,F2-24,F2-25,F2-27, and V-05 could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the Actuator Lock Knob on drive C unlocked?
Y N

  002
  Unlock the Actuator and run the disk MAPs again.

05JAN81   PN 8266312

EC 835086   PEC -------

$\frac{2}{A}$

MAP 1029-1

003
Measure for +5Vdc (-reset bucket):
E-C1E2B07 (neg)
E-C1E2D08 (pos).
Does the CE multimeter read more than 1.8V?
Y N

   004
   Bad jumpers on card E-C1E2
   ---or---
   Bad card
   E-C1E2 (10-160).

005
Probe E-C1D2U07 (-out drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   006
   Probe E-C1D2G08 (-missing sector pulse).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      007
      Probe E-C1D2G04 (-select demod N1).

      Up   Light: On or flashing
      Down Light: On or flashing

      Are the lights correct?
      Y N

```
6 4 4
B C D E
```

008
Probe E-C1F2P05 (-select integrator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   009
   Probe E-C1D2S07 (-in drive).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      010
      Jumper E-C1D2M11 (+recalibrate timeout SS) to
      E-C1D2PO8.

      Probe E-C1D2S07 (-in drive) and E-C1D2U07
      (-out drive).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         011
         Probe E-C1D2S07 (-in drive) and E-C1D2U07
         (-out drive).

         Up   Light: On or flashing
         Down Light: On or flashing

         Are the lights correct for one of the two lines?
         Y N

```
4 3 3 3 3
F G H J K
```

K
2

FRU ISOLATION MAP 5

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G H J L M
2 2 2

MAP 1029-3

012
Perform the following in order:

1. Remove jumper E-C1D2M11
   (+recalibrate timeout SS) to E-C1D2P08.
2. Jumper E-C1F2P02 (-power on delay) to E-C1F2P08.
3. Jumper E-C1D2S06 (kick SS) to E-C1D2U08.
4. Remove jumper E-C1F2P02 to E-C1F2P08.
5. Remove jumper E-C1D2S06 to E-C1D2U08.
6. Run the disk drive MAPs to drive C using MDI
   special (99-090):
-Select drive C.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

> **013**
> Pull out card E-C1F2.
> Measure the resistance (1 ohm range)
> from E-C1F2M04 (VCM start) to E-C1F2M05 (VCM
> finish).
> **Is the resistance less than 30 ohms?**
> **Y N**
>
> > **014**
> > Reinstall card.
> > Bad drive C disk enclosure (10-030).
>
> **015**
> Reinstall card.
> Check for continuity (1 ohm range)
> VC-5D (10-190) to E-C1F2S09.
> **Is the continuity OK?**
> **Y N**
>
> > **016**
> > Bad board
> > E-C1 (10-170).

017
Check for continuity VC5-D (10-190) to
ground on PDTB1
(5340 Vol. D FSL YA080).
Is the continuity OK?
Y N

> **018**
> Open on drive C DC power cable.

019
Bad card
E-C1D2
---or---
E-C1F2 (10-160).

020
Remove jumper.
Bad card
E-C1D2 (10-160).

021
Remove jumper.
Bad card
E-C1D2 (10-160).

022
Bad card
E-C1D2 (10-160).

023
Measure for +5Vdc (VCM finish):
E-C1F2M05 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read 1V to 2V?
Y N

> **024**
> Measure for +5Vdc (base NPN out):
> E-C1F2U02 (pos)
> E-C1F2P08 (neg).
> **Does the CE multimeter read less than 0.7V?**
> **Y N**

P Q
3 3

FRU ISOLATION MAP 5

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C D F N R
2 2 2 3

MAP 1029-4

025
Pull out card E-C1F2.

Measure the resistance (1 ohm range) between E-C1F2M04 (VCM start) and E-C1F2M05 (VCM finish).
Is the resistance less than 30 ohms?
Y N

> **026**
> Reinstall card E-C1F2.
> Bad drive C disk enclosure (10-030).

027
Reinstall card E-C1F2.
Bad card
Actuator coil driver card on drive C (10-160).

028
Measure for +24Vdc (base PNP out):
E-C1F2M12 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read less than 18V?
Y N

> **029**
> Bad card
> E-C1F2 (10-160).

030
Pull out card E-C1F2.

Measure the resistance (1 ohm range) between E-C1F2M04 (VCM start) and E-C1F2M05 (VCM finish).
Is the resistance less than 30 ohms?
Y N

> **031**
> Reinstall card E-C1F2.
> Bad drive C disk enclosure (10-030).

032
Reinstall card E-C1F2.
Bad card
Actuator coil driver card on drive C (10-160).

033
Bad card
E-C1F2 (10-160).

034
Bad drive C disk enclosure (10-030).

035
Measure for +5Vdc (VCM finish):
E-C1F2M05 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 3V?
Y N

> **036**
> Bad card
> E-C1E2 (10-160).

037
Bad card
E-C1F2 (10-160).

038
Probe E-C1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

R

039
Probe E-C1F2B12 (+normal error).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **040**
> Probe E-C1F2G03 (+coil current low).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **041**
> > Probe E-C1D2S07 (-in drive).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **042**
> > > Probe E-C1F2G12 (+on track).
> > >
> > > Up   Light: On
> > > Down Light: Off
> > >
> > > **Are the lights correct?**
> > > Y N
> > >
> > > > **043**
> > > > Bad card
> > > > Actuator coil driver card on drive C (10-160).
> > >
> > > **044**
> > > Bad card
> > > E-C1F2 (10-160).

U V W

045
Measure for +12Vdc (hybrid velocity):
E-C1D2D02 (neg)
E-C1D2D08 (pos).
Does the CE multimeter read more than 6.0V?
Y N

> **046**
> Bad card
> E-C1F2 (10-160).
>
> **047**
> Bad card
> E-C1D2 (10-160).

048
Bad card
E-C1D2 (10-160).

049
Bad card
E-C1D2
---or---
E-C1F2 (10-160).

050
Measure for +24Vdc (VCM finish):
E-C1F2M05 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

> **051**
> Measure for +5Vdc (VCM start):
> E-C1F2M04 (pos)
> E-C1F2P08 (neg).
> **Does the CE multimeter read more than 2V?**
> Y N
>
> > **052**
> > Bad card
> > E-C1D2 (10-160).

6 6
X Y

053
Bad card
E-C1F2 (10-160).

054
Measure for +5Vdc (VCM start):
E-C1F2M04 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 5V?
Y N

> **055**
> Probe E-C1D2B03 (+lin reg N of even track).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **056**
> > Measure for +5Vdc (hybrid velocity):
> > E-C1D2D02 (neg)
> > E-C1D2D08 (pos).
> > **Does the CE multimeter read more than 2V?**
> > Y N
> >
> > > **057**
> > > Bad card
> > > Actuator coil driver card on drive C (10-160).
> >
> > **058**
> > Bad card
> > E-C1D2 (10-160).
>
> **059**
> Bad card
> E-C1F2 (10-160).

060
Bad card
E-C1D2 (10-160).

061
Probe E-C1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **062**
> Probe E-C1F2B03 (+even).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **063**
> > Bad card
> > E-C1F2 (10-160).
>
> **064**
> Probe E-C1F2J04 (-bad AGC level).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **065**
> > Bad card
> > E-C1F2 (10-160).

9 7
Z A
  A

MAP 1029-7

066
Switch probe to MST 1,
Probe E-C1E2B09 (-counter G).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **067**
> Verify probe at MST 1.
> Probe E-C1E2B09 (-counter G).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> Observe for one minute.
> **Are the lights correct?**
> Y N
>
> > **068**
> > Switch probe to Multi.
> >
> > Probe E-C1F2G03 (+coil current low).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **069**
> > > Probe E-C1D2U04 (+select integrator).
> > >
> > > Up   Light: On
> > > Down Light: Off
> > >
> > > **Are the lights correct?**
> > > Y N

070
Bad jumpers on card E-C1D2
---or---
Bad card
E-C1D2 (10-160).

071
Probe E-C1D2U06 (+servo protect).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **072**
> Measure for +24Vdc (base PNP in):
> E-C1F2U07 (pos)
> E-C1F2U08 (neg).
> **Does the CE multimeter read more than 10.0V?**
> Y N
>
> > **073**
> > Bad card
> > Actuator coil driver card on drive C (10-160).
>
> **074**
> Measure for +5Vdc (handover velocity):
> E-C1D2S03 (pos)
> E-C1D2U08 (neg).
> **Does the CE multimeter read less than 0.8V?**
> Y N
>
> > **075**
> > Bad card
> > Actuator coil driver card on drive C
> > ---or---
> > E-C1F2
> > ---or---
> > E-C1D2 (10-160).

9 8 8
A A A   A A
B C D   E F

8 8
A A
G H

076
Bad card
Actuator coil driver card on drive C
---or---
E-C1D2 (10-160).

077
Switch probe to MST 1,
Probe E-C1E2J12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  078
  Bad jumpers on card E-C1E2
  ---or---
  Bad card
  E-C1E2 (10-160).

079
Switch probe to Multi.

Probe E-C1D2B03 (+lin reg N of even track).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  080
  Bad card
  E-C1E2 (10-160).

081
Bad jumpers on card E-C1D2
---or---
Bad card
E-C1D2 (10-160).

082
Measure for +5Vdc (data PES):
E-C1E2B13 (neg)
E-C1E2B08 (pos).
Does the CE multimeter read more than 4.0V?
Y N

  083
  Bad card
  E-C1D2
  ---or---
  E-C1F2 (10-160).

084
Bad card
E-C1E2 (10-160).

085
Switch probe to Multi.

Probe E-C1F2G03 (+coil current low).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  086
  Probe E-C1F2S12 (+NSW).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    087
    Bad card
    E-C1D2
    ---or---
    E-C1E2
    ---or---
    E-C1F2 (10-160).

9 9
A A
J K

A A A
B J K
7 8 8

FRU ISOLATION MAP 5

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Z
6

MAP 1029-9

088
Switch probe to MST 1,
Probe E-C1E2B09 (-counter G).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **089**
> Bad card
> E-C1E2 (10-160).

090
Bad card
E-C1F2
---or---
E-C1E2 (10-160).

091
Probe E-C1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **092**
> Bad card
> E-C1F2 (10-160).

093
Bad card
E-C1E2 (10-160).

094
Bad card
E-C1E2 (10-160).

095
Probe E-C1D2G04 (-select demod N1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **096**
> Probe E-C1D2S10 (-sector).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **097**
> > Bad card
> > E-C1D2
> > ---or---
> > E-C1C2 (10-160).
>
> **098**
> Probe E-C1F2G12 (+on track).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **099**
> > Bad card
> > E-C1D2 (10-160).

A
M
9

100
Probe E-C1D2U04 (+select integrator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  101
  Bad card
  E-C1D2 (10-160).

102
Probe E-C1F2S12 (+NSW).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  103
  Measure for +5Vdc (handover velocity):
  E-C1D2S03 (pos)
  E-C1D2U08 (neg).
  Does the CE multimeter read more than 1.1V?
  Y N

    104
    Measure for +5Vdc (CSR in):
    E-C1F2U05 (pos)
    E-C1F2U08 (neg).
    Does the CE multimeter read more than 1.0V?
    Y N

      105
      Bad card
      E-C1D2 (10-160).

    106
    Bad card
    Actuator coil driver card on drive C (10-160).

A   A
N   P

A
N

A
P

MAP 1029-10

107
Probe E-C1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  108
  Bad card
  E-C1F2 (10-160).

109
Jumper E-C1F2P11 (-in drive) to E-C1F2P08.
Measure for +24Vdc (VCM finish):
E-C1F2M05 (pos)
E-C1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

  110
  Bad card
  E-C1E2
  ---or---
  E-C1D2 (10-160).

111
Bad card
Actuator coil driver card on drive C (10-160).

112
Measure the resistance (10 ohm range) of the following:
E-C1F2U05 to E-C1F2U08 (CSR in)
E-C1F2S05 to E-C1F2U08 (CSR out).
Are both resistances less than 10 ohms?
Y N

  113
  Bad card
  Actuator coil driver card on drive C (10-160).

1
1
A
Q

A A
L Q
9 T
  0

114
Bad card
E-C1F2
---or---
E-C1D2 (10-160).

115
Probe E-C1F2B03 (+even).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  116
  Bad card
  E-C1E2 (10-160).

117
Switch probe to MST 1,
Probe E-C1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  118
  Bad card
  E-C1B2 (10-160)

119
Measure for +5Vdc:
E-C1B2S11 (neg) to E-C1B2U08 (pos)
E-C1B2S12 (neg) to E-C1B2U08 (pos).
Are both voltages more than 0.5V?
Y N

  120
  Bad card
  E-C1B2 (10-160)

A
R

A
R

121
Switch probe to Multi.
Probe E-C1D2D06 (+out direction)

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  122
  Bad card
  E-C1D2
  ---or---
  E-C1F2 (10-160).

123
Bad card
E-C1D2 (10-160).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1032	A	1	001
1035	A	1	001
1036	A	1	001
1046	B	7	056
1051	A	1	001
1052	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	0511	A
6	048	0595	A
9	069	0595	A
7	055	0595	B
6	051	0595	B
11	087	0595	B
5	030	1020	C
5	028	1031	B
5	031	1031	B
11	088	1032	B
7	057	1034	A

001
(Entry Point A)

Note: Reset the thermal cut-out on the disk D drive motor (10-190) when leaving this MAP.
Check for the following on drive D (10-190):
1. The drive belt is broken or off the pulleys (10-040).
2. Loose parts in or around the drive belt guard (10-040).
3. Loose cable connections to drive motor or brake coil (10-080).

Are all the checks OK?
Y N

   002
   Repair or exchange as needed.

MAP DESCRIPTION:
This MAP isolates failures that prevent the disk drive from turning or cause the rotational speed to go out of tolerance.

START CONDITIONS:
The disk is not turning or is turning at the wrong speed.

LOGIC CARDS TESTED:
E-D1F2, E-D1D2 and E-D1E2, drive D disk enclosure, cables E-D1A3 and E-D1A5, and drive D motor, belt, and brake.

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2
A

003

-Set Power to 0 (operator panel).
Inspect the disk D drive belt for tension and general
condition (10-190).
**Is the drive belt in good condition and is tension
correct?**
Y N

> **004**
>
> Align the drive belt and check the tension (10-190).
> Exchange the drive belt if it is in poor condition
> (10-040).

005

Remove cable C-B1J3 (05-260)
Remove cable C-B1J4 and plug into C-B1J3 postion.
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Is the Disk D drive belt turning?
Y N

> **006**
>
> Jumper E-D1D2G10 (brake coil drive) to E-D1D2D08
> Remove the drive belt guard and turn the disk D
> drive motor pulley clockwise by hand to test for
> binds or brake on.
>
> **Is the motor free to turn?**
> Y N
>
> > **007**
> >
> > Inspect the drive D brake assembly (10-190).
> > **Is the brake pad clear of the spindle pulley?**
> > Y N
> >
> > > **008**
> > >
> > > Measure for +24Vdc on the drive D brake coil:
> > > 1. Brake coil terminal 1 to ground.
> > > 2. Brake coil terminal 2 to ground.
> > > **Are they both more than 20V?**
> > > Y N

CAUTION

Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
miminum. Failure to do so may result in damage to the
disk enclosure.

7 4 4 3 3
B C D E F

009
Is either one of them more than 20V?
Y N

> **010**
> Reconnect cables C-B1J3 and C-B1J4 into their
> correct position.
> Remove jumper.
> Check for continuity between brake coil terminal 2
> and VC3-B (10-190).
> **Is the continuity OK?**
> Y N
>
> > **011**
> > Repair the cable between VC3 and the brake coil
> > terminal 2.
> > Reinstall the drive belt guard.
>
> **012**
> Check for continuity between the VC3-B and the
> VC5-B on E-D1 board (10-190).
> **Is the continuity OK?**
> Y N
>
> > **013**
> > Reinstall the drive belt guard.
> > Bad board
> > E-D1 (10-170).
>
> **014**
> Check for continuity between the VC5-B (10-190)
> and cable position C-B1J4D06 (05-210).
> **Is the continuity OK?**
> Y N
>
> > **015**
> > Reinstall the drive belt guard.
> > Repair or exchange the DC supply cable to disk
> > drive D.
>
> **016**
> Reinstall the drive belt guard.
> **Go To Map 0511, Entry Point A.**

G

017
Reconnect cables C-B1J3 and C-B1J4 into their
correct position.
Remove all jumpers.
The problem is an open circuit brake coil.
Repair or exchange as needed (10-110).

018
Remove all jumpers.
Jumper E-D1D2P07 (+brake applied) to E-D1D2P08.
Measure for +24Vdc between E-D1D2G10 (brake coil
drive) and ground.
Does the CE multimeter read more than 20V?
Y N

> **019**
> Reconnect cables C-B1J3 and C-B1J4 into their
> correct position.
> Remove jumper.
> Check for continuity between the VC3-A and the
> brake coil terminal 1 (10-190).
> **Is the continuity OK?**
> Y N
>
> > **020**
> > Repair the cable between the VC3-A and the
> > brake coil terminal 1.
> > Reinstall the drive belt guard.
>
> **021**
> Reinstall the drive belt guard.
> Bad board
> E-D1 (10-170).

022
Reconnect cables C-B1J3 and C-B1J4 into their correct
position.
Remove all jumpers.
Bad drive D brake magnet assembly (10-110).

C D
2 2

023
Remove the drive belt on drive D by tilting the drive motor upward.
Turn the drive D disk spindle pulley clockwise by hand to test for binds.

Is the disk spindle free to turn?
Y N

> **024**
> Reconnect cables C-B1J3 and C-B1J4 into their correct position.
> Remove jumper.
> Bad drive D disk enclosure (10-030).

025
Remove jumper.
Bad disk D drive motor (10-100).

026
-Set Power to 0 (operator panel).
Reconnect cables C-B1J3 and C-B1J4 into their correct position.
Reinstall the drive belt guard.
Reset the thermal cut-out on the disk drive D motor (10-190).
Jumper E-D1D2G11 (+brake applied to system) to E-D1D2J08.
-Set Power to 1 (operator panel).
Wait for 2 to 3 minutes and then observe the drive motor (see note).
Is the disk D drive motor turning?
Y N

> **027**
> Jumper E-C1D2G10 (brake coil drive) to E-C1D2D08.
> Remove the drive belt guard and turn the disk C drive motor pulley clockwise by hand to test for binds or brake on.
> **Is the motor free to turn?**
> Y N

5 5 5
H J K

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

028
Remove all jumpers.
Reinstall the drive belt guard.
Go To Map 1031, Entry Point B.

029
-Set Power to 0 (operator panel).
-Reset the thermal cut out on the disk C drive motor
(10-190).
Reinstall the drive belt guard.
Jumper E-C1D2G11 (+brake applied to system) to
E-C1D2J08.
-Set Power to 1 (operator panel).
Observe the drive belt for drives C and D.
Are both disks turning?
Y N

  030
  Go To Map 1020, Entry Point C.

031
Remove all jumpers.
Go To Map 1031, Entry Point B.

032
Switch probe to Multi.
Probe E-D1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  033
  Probe E-D1D2B13 (-osc early).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

6
L M N

034
Probe E-D1D2J02 (-osc late).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  035
  Remove all jumpers.
  Bad card
  E-D1D2
  ---or---
  E-D1E2 (10-160).

036
Remove all jumpers.
Bad card
E-D1E2
---or---
E-D1F2 (10-160)
---or---
Bad drive D disk enclosure (10-030).

037
Remove the card E-D1F2.
Measure the resistance between pins E-D1F2J05 (clock
threshold) and E-D1F2D08.
Is the resistance less than 50 ohms?
Y N

  038
  Reinstall card E-D1F2.
  Jumper   E-D1F2P02   (-power   on   delay)   to
  E-D1F2P08.
  -Set Power to 1 (operator panel).
  Remove jumper on E-D1F2P02.
  Run the disk drive MAPs to drive D using MDI
  special (99-090), and return to this step after the
  MAPs stop.
  -Select drive D.
  -Enter 1040 001 for the starting MAP.
  (Step 038 continues)

6
P

MAP 1030-5

(Step 038 continued)
Did disk MAPs run without errors?
Y N

    039
    Remove all jumpers.
    Bad card
    E-D1D2 (10-160).

    040
    Remove all jumpers.
    Bad card
    E-D1F2 (10-160).

  041
  Remove all jumpers.
  Bad drive D disk enclosure (10-030).

042
Run the disk drive MAPs to drive D using MDI special
(99-090), and return to this step after the MAPs stop.
-Select drive D.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

    043
    -Set Power to 0 (operator panel).
    Remove all jumpers.
    Jumper E-D1F2P02 (-power on delay) to
    E-D1F2P08.

    Remove cable C-B1J3 (05-260).
    Remove cable C-B1J4 and plug in C-B1J3 postion

    -Set Power to 1 (operator panel).
    Wait 30 seconds, and then press Reset (CE panel).
    Is the drive belt turning?
    Y N

        044
        Inspect the drive D brake assembly (10-190).
        Is the brake pad clear of the spindle pulley?
        Y N

045
Remove jumper.
Bad card
E-D1D2 (10-160).

046
Remove jumper.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive D
and loop on TA166 for 5 minutes and observe if the
result bytes are always X'0000'.
Are the result bytes always X'0000'?
Y N

    047
    Measure for 240Vac at disk D drive motor ACTB
    and observe for one minute (10-190).
    Is voltage always between 175V and 259V?
    Y N

        048
        Go To Map 0595, Entry Point A.

    049
    Check for loose or wrong connections at the disk
    D drive motor ACTB.
    If the connections are OK exchange disk D drive
    motor (10-080, 10-100).

050
Suspect a bad drive motor thermal cut-out, or
thermal cut-out was not reset after preceding failure
(10-190).

051
Remove all jumpers.
Go To Map 0595, Entry Point B.

052
-Set Power to 0 (operator panel).
Remove all jumpers.
Probe E-D1F2P02 (-power on delay).

Power On and observe CE probe.
Is the line down for approximately 15 to 20 seconds?
Y N

　　053
　　Bad card
　　E-D1F2 (10-160).

054
Bad card
E-D1D2 (10-160).

055
Reconnect cables C-B1J3 and C-B1J4 into their correct position.
Reinstall the drive belt guard.
Go To Map 0595, Entry Point B.

056
(Entry Point B)

Measure for +24Vdc:
E-D1F2G02 (pos)
E-D1F2J08 (neg).
Does the CE multimeter read between 21.6V and 26.4V?
Y N

　　057
　　Go To Map 1034, Entry Point A.

058
Probe E-D1A5D07 (-index).

Up　　Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

　　059
　　Probe E-D1D2S13 (-index).

　　Up　　Light: On or flashing
　　Down Light: On or flashing

　　Are the lights correct?
　　Y N

　　　　060
　　　　Probe E-D1D2P02 (missing clocks/2).

　　　　Up　　Light: On or flashing
　　　　Down Light: On or flashing

　　　　Are the lights correct?
　　　　Y N

8 8 8 8
U V W X

U V W X
7 7 7 7

061
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

062
Bad card
E-D1D2 (10-160).

063
Bad board
E-D1 (10-170).

064
-Set Power to 0 (operator panel).

Check continuity from E-D1A5D07 (-index) to
A-A2B5D07.
Is the continuity OK?
Y N

   065
   Bad cable.
   E-D1A5 (10-150).

066
Check the condition and the tension of drive belt
(10-190).
Is the belt OK?
Y N

   067
   Repair as necessary (10-040).

068
-Set Power to 1 (operator panel).

Measure for 240Vac on the disk D drive motor
assembly ACTB terminals.
Is voltage between 175V and 259V?
Y N

9 9
Y Z

069
Go To Map 0595, Entry Point A.

070
Check the configuration jumpers on card A-A2D2 (10-210).
Are the jumpers correct?
Y N

071
Install the jumpers correctly and run the disk MAPs again.

072
Is an oscilloscope available?
Y N

073
-Set Power to 0 (operator panel).

Remove cable C-B1J3 (05-260)
Remove cable C-B1J4 and plug in C-B1J3 postion

-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Is the drive belt turning?
Y N

074
Jumper E-D1D2G10 (brake coil drive) to E-D1D2D08
Remove the drive belt guard and turn the disk D drive motor pulley clockwise by hand to test for binds or brake on.
Is the motor free to turn?
Y N

075
Inspect the drive D brake assembly (10-190).
Is the brake pad clear of the spindle pulley?
Y N

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

```
1 1 1 1 1
1 1 0 0 0
A A A A A
A B C D E
```

A A A
C D E
9 9 9

SPEED FAILURE MAP.

5340 SYSTEMS UNIT

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A
G

MAP 1030-10

076
Reconnect cables C-B1J3 and C-B1J4 into their correct position.
Remove jumper.
Drive D brake needs adjustment (10-190).
---or---
Bad drive D brake magnet assembly (10-110).

077
Remove the drive belt on drive D by tilting the drive motor upward.
Turn the drive D disk spindle pulley clockwise by hand to test for binds.
Is the disk spindle free to turn?
Y N

> **078**
> Reconnect cables C-B1J3 and C-B1J4 into their correct position.
> Remove jumper.
> Bad drive D disk enclosure (10-030).

079
Reconnect cables C-B1J3 and C-B1J4 into their correct position.
Remove all jumpers.
Bad disk D drive motor (10-100).

080
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Jumper E-D1D2G11 (+brake applied to system) to E-D1D2J08.
-Set Power to 1 (operator panel).
Wait for 30 seconds.
Probe E-D1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

```
1
1
A   A
F   G
```

081
Probe E-D1D2B13 (-osc early).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **082**
> Probe E-D1D2J02 (-osc late).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **083**
> > Reconnect cables C-B1J3 and C-B1J4 into their correct position.
> > Remove all jumpers.
> > Bad card
> > E-D1D2
> > ---or---
> > E-D1E2 (10-160).
>
> **084**
> Reconnect cables C-B1J3 and C-B1J4 into their correct position.
> Remove jumper.
> Bad card
> E-D1E2 (10-160).

085
Reconnect cables C-B1J3 and C-B1J4 into their correct position.
Remove all jumpers.
Bad card
E-D1D2
---or---
E-D1F2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

A A A
A B F
9 9 1
   0

SPEED FAILURE MAP.

5340 SYSTEMS UNIT

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MAP 1030-11

086
Reconnect cables C-B1J3 and C-B1J4 into their
correct position.
Remove all jumpers.
Bad card
E-D1F2
---or---
E-D1D2
---or---
A-A2C2 (10-160)
---or---
Bad disk D drive motor (10-100).

087
Reconnect cables C-B1J3 and C-B1J4 into their
correct position.
Reinstall the drive belt guard.
Go To Map 0595, Entry Point B.

088
Go To Map 1032, Entry Point B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1011	A	1	001
1016	B	4	028
1030	B	4	028
1040	A	1	001
1040	B	4	028
1041	A	1	001
1044	A	1	001
1051	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1034	A

001

(Entry Point A)

Measure the following voltages:

Voltage	Range	Pin
+5Vdc	4.4V to 5.6V	E-D1D2D03
+24Vdc	21.6V to 26.4V	E-D1F2G02
-4Vdc	3.5V to 4.5V	E-D1F2B06

MAP DESCRIPTION:
This MAP isolates failures causing no communication between the disk and the common adapter.

START CONDITIONS:
The disk does not respond to common adapter commands.

LOGIC CARDS TESTED:
E-D1C2, E-D1F2, E-D1D2, cables E-D1A3 and E-D1A5, and the system power supply.

Note:
An open circuit on nets A5-01, VC-01, and V-01 could cause you to enter this MAP. See netlist tables, MAP 1077.

Are the voltages in range?

Y N

002
Go To Map 1034, Entry Point A.

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2
A

003
Probe E-D1F2G10 (-power good).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **004**
> Remove the card E-D1F2.
>
> -Set Power to 1 (operator panel).
>
> Probe E-D1F2G10 (-power good).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Check for continuity of -power good (see FSL YA181).
> > **Is the continuity OK?**
> > Y N
> >
> > > **006**
> > > Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).
> >
> > **007**
> > Bad card C-B1J6.
>
> **008**
> Reset the thermal cut-out on the disk drive D motor (10-190).
> Bad card
> E-D1F2 (10-160).

B

009
Probe E-D1F2P09 (-power good delayed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **010**
> Reset the thermal cut-out on the disk drive D motor (10-190).
> Bad card
> E-D1F2 (10-160).

011
Probe E-D1F2P02 (-power on delay).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **012**
> Bad card
> E-D1F2 (10-160).

013
Probe E-D1C2B03 (+interface degate).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **014**
> Check for continuity of the drive D (+interface degate) line.   See MAP 1077, Dedicated Cable Wiring Checks.
> **Was an open found?**
> Y N

3 3 3
C D E

C D E
2 2 2

DISK INT FAILURE MAP

5340 SYSTEMS UNIT

PAGE 3 OF 4

F G   MAP 1031-3

015
Bad card
A-A2D2.

016
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

017
Check for continuity of the drive D -control sample line and the -control sample received line. See MAP 1077, Dedicated Cable Wiring Checks and Bus Cable Wiring Checks.
Was an open found?
Y N

> **018**
> Using the TU Select option (99-065), select drive D and loop on TA16A.
> Probe E-D1A5B03 (-control sample).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
>> **019**
>> Probe E-D1A5B03 (-control sample).
>>
>> Up   Light: Off
>> Down Light: On or flashing
>>
>> **Are the lights correct?**
>> Y N
>>
>>> **020**
>>> Bad card
>>> A-A2D2.
>>
>> **021**
>> Bad card
>> E-D1C2 (10-160).

022
Probe A-A2A5B12 (-control sample received).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **023**
> Probe E-D1A3B12 (-control sample received).
>
> Up   Light: Off
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
>> **024**
>> Bad card
>> E-D1C2 (10-160).
>
> **025**
> Bad terminator card, E-D1A4 (10-140).

026
Bad card
A-A2D2.

027
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

028
(Entry Point B)
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Run the disk drive MAPs to drive C using MDI special
(99-099):
-Select drive C.
-Enter 1040 001 for the starting MAP.
Follow the directions given in the MDI MAPs.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1030	B	5	030
1063	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	033	1030	A
5	038	1030	A
6	043	1030	A
6	046	1030	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (10X range) between the following points:
1. E-D1F2M12 (pos) and E-D1F2G02 (neg).
2. E-D1F2U07 (pos) and E-D1F2G02 (neg).
3. E-D1F2U08 (pos) and E-D1F2U04 (neg).
4. E-D1F2U08 (pos) and E-D1F2U02 (neg).

Are all the resistances in the range from 160 ohms to 260 ohms?
Y N

   002
   Bad card
   Actuator coil driver card on drive D (10-160).

003
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Measure for +5Vdc:
E-D1E2D02 (pos) to E-D1E2D08 (neg)
E-D1E2B03 (pos) to E-D1E2D08 (neg).
Are both voltages more than 3.0V?
Y N

MAP DESCRIPTION:
This MAP isolates data unsafe problems caused by sample servo failures.

START CONDITIONS:
This MAP is entered when an oscilloscope is needed for FRU isolation.

LOGIC CARDS TESTED:
E-D1D2, actuator driver card, E-D1B2, E-D1E2, and E-D1C2.

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2 2
A B

004
Bad card
E-D1E2 (10-160).

005
Is an oscilloscope available?
Y N

> **006**
> Bad card
> E-D1E2
> ---or---
> E-D1B2
> ---or---
> E-D1D2
> ---or---
> E-D1C2
> ---or---
> actuator coil driver card on drive D (10-160).
> ---or---
> E-D1F2
> ---or---
> Bad drive D disk enclosure (10-030).

007
Using the TU Select option, select Drive D and execute
TA169.

Use 1X probes.
Place the oscilloscope channel 1 probe on E-D1D2J09
(+shift reg clock).
Place the oscilloscope channel 2 probe on E-D1D2J10
(+enable sample servo).
Place the oscilloscope Ext. Trig probe on E-D1D2S10
(-sector).
Set oscilloscope controls as shown in table.

(Step 007 continues)

(Step 007 continued)

Horiz Display	A
Mag	Off
A Sweep Length	Full
A Time Base	5us/div
Mode	Alt
Trigger Source	Ext
Ch 1 Volts/div	·2v/div
Ch 2 Volts/div	2v/div
A Sweep Mode	Normal Trig
A Trig Slope	-
A Trig Coupling	AC
Trig	Normal
A Trig Level	0
A Trig HF Stab	0
Invert	In

Set the Input Chan 1 switch to the Gnd position and
adjust the position of the trace to the center line of the
screen.
Set the Input Chan 1 switch to the DC position.
Set the Input Chan 2 switch to the Gnd position and
adjust the position of the trace to the bottom line of the
screen.
Set the Input Chan 2 switch to the DC position.
Adjust the A triggering level to display trace.
Adjust the Horizontal position to start the trace at the
left-hand line.
Is the display the same as in 10-400?
Y N

> **008**
> Bad card
> E-D1D2 (10-160).

3
C

009
Move the Chan 2 probe to E-D1D2U13 (+enable mark detect).
Set the Mode switch to the Chan 2 position.
Is the display the same as in 10-410?
Y N

> **010**
> Bad card
> E-D1D2 (10-160).

011
Move the Chan 1 probe to E-D1E2B03 (buffered analog data A).
Set the Chan 1 V/Div to the 20mV position.
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the AC position.
Compare servo gain field in 10-430 with display.
Is the servo gain field correct?
Y N

> **012**
> Bad card
> E-D1B2 (10-160).
> ---or---
> Bad drive D disk enclosure (10-030).
> ---or---
> E-D1F2

013
Move the Chan 2 probe to E-D1E2D02 (buffered analog data B).
Set the Chan 2 V/Div to the 20mV position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the AC position.
Set the Mode switch to the Chan 2 position.
Pull the Invert switch.
Compare servo gain field in 10-430 with display.
Is the servo gain field correct?
Y N

D E

014
Bad card
E-D1B2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

015
Move the Chan 1 probe to E-D1E2G03 (+servo inhibit VCO).
Set the Mode switch to the Chan 1 position.
Set the Chan 1 V/Div switch to 1V.
Is the display the same as in 10-420?
Y N

> **016**
> **Is the display the same as in 10-460?**
> Y N
>
> > **017**
> > Move the Chan 1 probe to E-D1E2J05 (-counter run).
> > **Is the display the same as in 10-470?**
> > Y N
> >
> > > **018**
> > > Bad card
> > > E-D1E2 (10-160).
> >
> > **019**
> > Bad card
> > E-D1B2 (10-160).

020
Bad card
E-D1E2 (10-160).

021
Move the Chan 1 probe to E-D1E2G08 (data servo 2F burst).
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the DC position.
Set the Chan 1 V/Div switch to 1V.
Is the display the same as in 10-440?
Y N

> **022**
> **Is display a valid MST1 level (-0.8V to -1.8V)?**
> Y N
>
> > **023**
> > Bad card
> > E-D1E2 (10-160).
>
> **024**
> Bad card
> E-D1B2 (10-160).

025
Move the Chan 1 probe to E-D1E2B13 (data PES).
Set A time base to 2ms.
Move the Ext Trig probe to E-D1D2S13 (-index).
Adjust the A triggering level to display trace.
Does the display compare with 10-450?
Y N

> **026**
> Bad card
> E-D1E2 (10-160).

027
Probe
E-D1E2J13 (+off data track).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?
Y N

G H

028
Bad card
E-D1E2 (10-160).
---or---
actuator coil driver card on drive D (10-160).

029
Bad card
E-D1C2 (10-160).
---or---
actuator coil driver card on drive D (10-160).

K L   MAP 1032-5

030
(Entry Point B)

This MAP checks the disk speed by measuring the time
between index pulses.
Index pulses should be 18.6 to 19.8 milliseconds apart.
Place the oscilloscope probe on E-D1D2S13 (-index).
Set oscilloscope controls as shown in table.

```
.-----------------------------------.
| B Sweep Mode     | B starts after |
|                  |   time delay   |
| Horiz Display    | A              |
| Mag              | Off            |
| A Sweep Length   | Full           |
| A Time Base      | 2ms/div        |
| Mode             | Ch 1           |
| Trigger          | Ch 1 only      |
| Ch 1 Volts/div   | 2 (X1 probe)   |
| A Sweep Mode     | Auto Trig      |
| A Trig Slope     | -              |
| A Trig Coupling  | AC             |
| Trig Source      | Int            |
| A Trig Level     | 0              |
| A Trig HF Stab   | 0              |
-------------------------------------
```

Set the Input Chan 1 switch to the Gnd position and
adjust the position of the trace to the center line of the
screen.
Set the Input Chan 1 switch to the DC position.
Adjust the Horiz position until the first pulse is on the
left division.
**Is the second pulse between 18.6ms and 19.8ms
after first pulse?**
Y N

    031
    Has this machine just been installed?
    Y N

6
J K L

032
Is the pulse early?
Y N

    033
    Disk speed too slow.
    Go To Map 1030, Entry Point A.

034
Bad card
E-D1D2 (10-160).

035
Check for correct motor rating (voltage and hertz) on
drive D.
Are both correct?
Y N

    036
    Exchange the incorrect part and run the disk MAPs
    again to verify that the disk is working correctly.

037
Is the pulse early?
Y N

    038
    Disk speed too slow.
    Go To Map 1030, Entry Point A.

039
Bad card
E-D1D2 (10-160).

05JAN81   PN 8266315

EC 835086   PEC -------

MAP 1032-5

J
5

040
Switch the B time base to 0.2ms.
Switch the Horiz display to A Inten during B.
Adjust the Delay time multiplier until the right-hand
division of the trace is intensified.
Switch the Horiz display to delayed sweep (B).
**Is the pulse between 0.6ms and 1.8ms from start of
trace?**
Y N

  041
  Is the pulse after 1.8ms from start of trace?
  Y N

    042
    Bad card
    E-D1D2 (10-160).

  043
  Disk speed too slow.
  Go To Map 1030, Entry Point A.

044
Does the pulse timing change?
Y N

  045
  Bad card
  A-A2C2
  ---or---
  A-A2D2
  ---or---
  Bad top card connector

046
Disk speed is changing.
Go To Map 1030, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	B	3	008
1030	A	1	001
1031	A	1	001
1036	A	1	001
1049	A	1	001
1052	A	1	001
1064	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0511	A

001
(Entry Point A)

Meter the probe side of the C-B1J4 cable connector for ect correct voltages. (05-210) see FSL YA180

Voltage	Range			Pin
+5Vdc	4.4V	to	5.6V	B03,B04,D03
-4Vdc	3.5V	to	4.5V	B13,D13
+12Vdc	10.5V	to	13.5V	B02
-12Vdc	10.5V	to	13.5V	D02
+24Vdc	21.6V	to	26.4V	B06,D06

Are the supply voltages in tolerance?
Y N

002
System power supply failure.
Go To Map 0511, Entry Point A.

MAP DESCRIPTION:
This MAP isolates disk power supply problems.

START CONDITIONS:
This MAP is entered from other disk FRU isolation MAPs when there is a power problem on the disk.

LOGIC CARDS TESTED:
E-D1B2, E-D1C2, E-D1D2, E-D1E2, E-D1F2, actuator driver card, board E-D1, and the disk DC power cable.

2
A

003
Measure the following voltages on the E-D1 board:

```
  +5Vdc  E-D1F2D03
  -4Vdc  E-D1F2B06
 +12Vdc  E-D1F2B11
 -12Vdc  E-D1F2D12
 +24Vdc  E-D1F2G02
```

Are the voltage measurements correct?
Y N

> **004**
> Measure voltages at board E-D1 crossover cables
> (10-190):
>
> ```
>   +5Vdc  VC2-C  and  VC4-C
>   -4Vdc  VC2-B  and  VC4-B
>  +12Vdc  VC1-C
>  -12Vdc  VC1-D
>  +24Vdc  VC5-C
> ```
> **Are the voltage measurements correct?**
> Y N
>
> > **005**
> > Repair or exchange the drive D DC power cable.
>
> **006**
> Bad board
> E-D1 (10-170).
> The netlist tables in MAP 1077 may be used to
> correct the net on board E-D1.

007
Bad board
E-D1 (10-170).
The netlist tables in MAP 1077 may be used to correct
the net on board E-D1.

008
(Entry Point B)
Jumper the following lines:

E-D1D2G10 (brake coil drive) to E-D1D2J08.
E-D1D2G11 (+brake applied to system) to E-D1C2J08.

Pull out cards:

E-D1B2, E-D1C2, E-D1D2, E-D1E2, and E-D1F2.

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel) and remember the lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 On?
Y N

> **009**
> Reinstall cards E-D1B2, E-D1C2, E-D1D2, E-D1E2, and E-D1F2 one at a time, set the power switch on, and press the Dply Pwr Chk switch (CE panel).
> If the display light bit 1 byte 0 (CE panel) is on, then the card that was just installed is bad. Repeat the procedure until the bad card is isolated (See note).
>
> Remove all jumpers.

010
Disconnect the actuator driver card crossover cables VC7, VC8, and VC10 (10-190).

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel), and note the lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 on?
Y N

> **011**
> Remove all jumpers.
> Bad card
> Actuator coil driver card on drive D (10-160).

Note: The display light bit 1 byte 0 (CE panel) is on if a power supply over current check has occurred.

4
B

012

Disconnect all remaining board E-D1 crossover cables
(10-190).
Check for short to ground at the following pins:

```
 +5Vdc  E-D1F2D03
 -4Vdc  E-D1F2B06
+12Vdc  E-D1F2B11
-12Vdc  E-D1F2D12
+24Vdc  E-D1F2G02
```

Do any pins have a short circuit to ground?
Y N

> **013**
> Remove all jumpers.
> Repair or exchange the drive D DC power cable.

014
Remove all jumpers.
Bad board
E-D1 (10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	B	3	004
1045	B	3	004
1046	A	1	001
1046	B	3	004
1047	B	3	004
1048	B	3	004
1048	C	11	093
1050	B	3	004
1050	E	13	105
1052	B	3	004
1053	B	3	004
1053	D	12	096
1054	B	3	004
1055	B	3	004
1056	B	3	004
1070	B	3	004
1071	B	3	004
1071	C	11	093

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	008	1030	A

001
(Entry Point A)

−Set Power to 0 (operator panel).
Measure the resistance (1 ohm range)
E-D1F2S05 (CSR out) to E-D1F2U08.

Is the resistance less than 10 ohms?
Y N

2 2
A B

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-D1C2, E-D1D2, E-D1E2, E-D1F2, and the actuator driver card on board E-D1; and the disk enclosure for disk drive D.

Note: An open circuit on net F2-23 could cause you to enter this MAP. See netlist tables, MAP 1077.

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002

Bad card

Actuator coil driver card on drive D (10-160).

003

Bad card

E-D1F2 (10-160).

004
(Entry Point B)
-Set Power to 0 (operator panel).

Is the Actuator Lock Knob on drive D unlocked?
Y N

  005
  Unlock the Actuator and run the disk MAPs again.

006
Observe the drive belt.

Note: An open circuit on the following nets C2-09, C2-11, D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18, F2-21, F2-24, AND F2-28 could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the drive belt turning?
Y N

  007
  -Set Power to 0 (operator panel).
  -Set Power to 1 (operator panel).
  Wait 30 seconds, and then press Reset (CE panel).
  Is the drive belt turning?
  Y N

    008
    Go To Map 1030, Entry Point A.

  009
  Run the disk drive MAPs to drive D using MDI special (99-090):
  -Select drive D.
  -Enter 1040 001 for the starting MAP.
  Wait for the MDI MAPs to stop.
  Go to Page 4, Step 010, Entry Point F.

4
C

010
(Entry Point F)

Note: Damage to the actuator in the disk enclosure can cause you to enter this MAP.
Probe E-D1C2J05 (+out).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **011**
> Probe E-D1C2U06 (-abs track address 1).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **012**
> > Probe E-D1C2U06 (-abs track address 1).
> >
> > Up   Light: On or flashing
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **013**
> > > Probe E-D1D2G13 (+normal error).
> > >
> > > Up   Light: On or flashing
> > > Down Light: On or flashing
> > >
> > > **Are the lights correct?**
> > > Y N

6 6 5 5
D E F G H

014
Measure for +5Vdc (+Ω/2 error):
E-D1D2J07 (pos)
E-D1D2J08 (neg).
Does the CE multimeter read -0.1V to +0.6V?
Y N

> **015**
> Bad card
> E-D1F2 (10-160).

016
Probe E-D1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **017**
> Probe E-D1D2M08 (-calibration address).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **018**
> > Bad card
> > E-D1D2
> > ---or---
> > E-D1F2 (10-160).

019
Jumper E-D1F2P11 (-in drive) to E-D1F2P08.
Measure for +24Vdc:
E-D1F2M04 (pos) to E-D1F2P08 (neg)
E-D1F2M05 (pos) to E-D1F2P08 (neg).
Are both the voltages greater than 20V?
Y N

5 5 5
J K L

020
Remove jumper.
Bad card
E-D1C2
---or---
E-D1F2 (10-160).

021
Remove jumper.
Bad card
Actuator coil driver card on drive D (10-160).

022
Probe E-D1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  023
  Bad card
  E-D1C2
  ---or---
  E-D1D2 (10-160).

024
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

025
Bad card
E-D1D2
---or---
E-D1C2 (10-160).

026
Probe E-D1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  027
  Probe E-D1C2S05 (-count down 2 tracks).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    028
    Bad card
    E-D1C2 (10-160).

  029
  Bad card
  E-D1F2 (10-160).

030
Probe E-D1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  031
  Probe E-D1C2D13 (+behind home).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

E M N P
4 5 5 5

FRU ISOLATION MAP 1

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D Q
4

MAP 1035-6

032
Bad card
E-D1F2 (10-160).

033
Bad card
E-D1D2 (10-160).

034
Probe E-D1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  035
  Bad card
  E-D1D2
  ---or---
  E-D1C2 (10-160).

036
Bad card
E-D1C2 (10-160).

037
Probe E-D1D2G13 (+normal error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  038
  Bad card
  E-D1D2 (10-160).

Q

039
Probe E-D1D2D05 (-count up 2 tracks).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  040
  Bad card
  E-D1F2 (10-160).

041
Bad card
E-D1D2 (10-160).

042
Probe E-D1C2U06 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  043
  Probe E-D1D2U11 (+behind home).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    044
    Probe E-D1C2D13 (+behind home).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

8 7 7 7
R S T U

MAP 1035-7

045
Probe E-D1D2B05 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    046
    Measure for +5Vdc (coil current signal):
    E-D1D2B09 (pos)
    E-D1D2D08 (neg).
    Does the CE multimeter read +0.3V to -0.3V?
    Y N

        047
        Measure for -5Vdc (coil current signal):
        E-D1D2B09 (pos)
        E-D1D2D08 (neg).
        Does the CE multimeter read -0.3V to -4.5V?
        Y N

            048
            Bad card
            Actuator coil driver card on drive D (10-160).

        049
        Bad card
        E-D1F2 (10-160).

050
Measure for +24Vdc (base PNP in):
E-D1F2U07 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

    051
    Bad card
    Actuator coil driver card on drive D (10-160).

052
Bad card
E-D1C2
---or---
E-D1D2
---or---
E-D1F2 (10-160).

053
Bad card
E-D1D2 (10-160).

054
Bad card
E-D1F2 (10-160).

055
Probe E-D1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    056
    Probe E-D1C2D13 (+behind home).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

        057
        Measure for +5Vdc (-N/2 error):
        E-D1F2M08 (pos)
        E-D1F2P08 (neg).
        Does the CE multimeter read -0.3 to +0.3V?
        Y N

            058
            Bad card
            E-D1F2 (10-160).

V W

8 8 8
X Y Z

Y Z
7 7

FRU ISOLATION MAP 1

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R X A A A
6 7 A B C

MAP 1035-8

059
Bad card
Actuator coil driver card on drive D (10-160).

060
Probe E-D1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

061
Probe E-D1D2B05 (-abs track address 1)

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

062
Measure for +5Vdc (coil current signal):
E-D1D2B09 (pos)
E-D1D2D08 (neg).
Does the CE multimeter read -0.3V to +0.3V?
Y N

063
Bad card
Actuator coil driver card on drive D (10-160).

064
Measure for +24Vdc (base PNP in):
E-D1F2U07 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

065
Bad card
Actuator coil driver card on drive D (10-160).

066
Bad card
E-D1F2 (10-160).

067
Bad card
E-D1D2 (10-160).

068
Bad card
E-D1C2 (10-160).

069
Probe E-D1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

070
Bad card
E-D1F2 (10-160).

071
Bad card
E-D1C2 (10-160).

072
Probe E-D1F2P11 (-in drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

A A A
A B C

9 9
A A
D E

A
E
8

FRU ISOLATION MAP 1

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A A A A
D F G H
8

MAP 1035-9

073
Probe E-D1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

074
Probe E-D1F2P11 (-in drive).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

075
Probe E-D1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

076
Bad card
E-D1D2
---or---
E-D1E2 (10-160).

077
Bad card
E-D1F2 (10-160).

078
Measure for +5Vdc (coil current signal):
E-D1D2B09 (pos)
E-D1D2D08 (neg).
Does the CE multimeter read -0.3V to +0.3V?
Y N

A A A
F G H

079
Bad card
E-D1F2 (10-160).

080
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

081
Measure for -5Vdc (integrator output):
E-D1F2P04 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read +0.3V to -4.0V?
Y N

082
Bad card
E-D1F2 (10-160).

083
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

084
Probe E-D1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

085
Probe E-D1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **086**
> Bad card
> E-D1D2 (10-160).

087
Bad card
E-D1F2 (10-160).

088
Measure for +24Vdc (base PNP in):
E-D1F2U07 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

> **089**
> Bad card
> Actuator coil driver card on drive D (10-160).

090
Measure for +5Vdc (+Q/2 error):
E-D1D2J07 (pos)
E-D1D2J08 (neg).
Does the CE multimeter read 0V to 0.5V?
Y N

> **091**
> Bad card
> E-D1F2
> ---or---
> Actuator coil driver card on drive D (10-160).

092
Bad card
E-D1F2
---or---
E-D1D2 (10-160).

A
L

093
(Entry Point C)

Is the Actuator Lock Knob on drive D unlocked?
Y N

> **094**
> Unlock the Actuator and run the disk MAPs again.

095
Bad card
E-D1C2
---or---
E-D1D2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

096
(Entry Point D)

-Set Power to 0 (operator panel).
Measure the resistance from E-D1F2J08 to E-D1F2J05
(clock threshold).
Is the resistance greater than 200 ohms?
Y N

    097
    Disconnect VC3 on board E-D1.
    Measure the resistance of the disk enclosure
    resistors (1 ohm range) VC3-C to VC3-D (10-190).
    Is the resistance greater than 150 ohms?
    Y N

        098
        Reinstall connector VC3.
        Bad drive D disk enclosure (10-030).

    099
    There is a short circuit to ground on pins C and D of
    VC3 connector (10-190).

100
Jumper E-D1D2P07 (+brake applied) to E-D1D2P08.
-Set Power to 1 (operator panel).
Probe E-D1F2B04 (+servo clock SS).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

    101
    Remove jumper.
    Bad card
    E-D1F2 (10-160).

Note: Discontinuity of net F2-02 could cause you to
enter this MAP. See netlist tables, MAP 1077.

1
3
A
M

102
Probe E-D1D2G05 (+servo clock SS).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

   103
   Bad board
   E-D1 (10-170).

104
Bad jumpers on card E-D1D2
---or---
Bad card
E-D1D2 (10-160).
Remove jumper.

105
(Entry Point E)

Is the Actuator Lock Knob on drive D unlocked?
Y N

   106
   Unlock the Actuator and run the disk MAPs again.

107
Bad card
E-D1D2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	E	8	051
1046	D	6	034
1046	E	8	051
1047	D	6	034
1049	A	1	001
1049	B	3	010
1051	A	1	001
1051	B	3	010
1052	A	1	001
1053	A	1	001
1053	B	3	010
1053	C	4	023

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	1030	A
4	027	1034	A

001
(Entry Point A)

-Set Power to 0 (operator panel).

Jumper E-D1D2G10 (brake coil drive) to E-D1D2D08.
Jumper E-D1D2G11 (+brake applied to system) to E-D1D2J08.

-Set Power to 1 (operator panel).

Wait for 2 to 3 minutes and then observe the drive motor (see note).

Is the disk D drive motor turning?
Y N

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2 2
A B

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on nets B2-18, D2-05, E2-06, and F2-20 could cause you to enter this MAP. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-D1B2, E-D1C2, E-D1D2, E-D1E2, E-D1BF2, cables E-D1A3 and E-D1A5, and the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

002
Remove all jumpers.
Go To Map 1030, Entry Point A.

003
Reseat cable E-D1A2.
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Switch probe to MST 1,
Probe E-D1E2G12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

│ **004**
│ Remove all jumpers.
│ Bad card
│ E-D1E2 (10-160).

005
Switch probe to Multi.

Probe E-D1D2J05 (1F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

│ **006**
│ Remove all jumpers.
│ Bad card
│ E-D1B2 (10-160).

C

007
Perform the following in order:

1. -Set Power to 0 (operator panel).
2. Jumper E-D1F2P02 (-power on delay) to E-D1F2P08.
3. -Set Power to 1 (operator panel).
4. Remove jumper E-D1F2P02 to E-D1F2P08.
5. Run the disk drive MAPs to drive D using MDI
   special (99-090), and return to this step after the
   MAPs stop.
-Select drive D.
-Enter 1040 001 for the starting MDI ID and step
number.
Did disk MAPs run without errors?
Y N

│ **008**
│ Remove all jumpers.
│ Bad jumpers on card E-D1D2
│ ---or---
│ Bad card
│ E-D1D2
│ ---or---
│ E-D1E2 (10-160).

009
Remove all jumpers.
Bad card
E-D1F2
---or---
E-D1D2 (10-160).

D   MAP 1036-3

010
(Entry Point B)

Measure for –8Vdc:
E–D1F2B10 (pos)
E–D1A2D08 (neg.
Note: An open circuit on nets A2–07, A2–08, and F2–22
could cause you to enter this MAP. See netlist tables,
MAP 1077.
Does the CE multimeter read -7V to -9V?
Y N

> **011**
> Check for continuity of E–D1A2B10 to E–D1A2B12
> to E–D1A2D09 to E–D1A2D13 to E–D1F2S04.
> **Is the continuity OK?**
> **Y N**
>
>> **012**
>> Bad board
>> E–D1 (10–170).
>
> **013**
> Remove E–D1E2.
> –Set Power to 1 (operator panel).
> Measure for –8 Vdc:
> E–D1F2B10 (pos)
> E–D1A2D08 (neg)
> **Does the CE multimeter read -7V to -9V?**
> **Y N**
>
>> **014**
>> Reinstall original E–D1E2.
>> Bad card E–D1F2.
>
> **015**
> Bad card
> E–D1E2.

016
Probe E–D1D2J02 (–osc late) and E–D1D2B13 (–osc
early).

Up   Light: Off
Down Light: On

Are the lights correct for either line?
Y N

> **017**
> Probe E–D1D2J02 (–osc late) and E–D1D2B13 (–osc
> early).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> **Y N**
>
>> **018**
>> Bad card
>> E–D1F2 (10–160).
>> ---or---
>> Bad drive D disk enclosure (10–030).
>
> **019**
> Switch probe to MST 1,
> Probe E–D1E2G12 (2F write clock).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> **Y N**
>
>> **020**
>> Bad card
>> E–D1E2 (10–160).

D   4 4
                                               E F

MAP 1036-3

021
Bad card
E-D1F2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

022
Bad card
E-D1F2
---or---
E-D1D2 (10-160).

023
(Entry Point C)

Measure for -7Vdc:
E-D1F2U10 (pos)
E-D1F2U08 (neg).
Does the CE multimeter read -6V to -8V?
Y N

> **024**
> Remove E-D1E2.
> -Set Power to 1 (operator panel).
> Measure for -7 Vdc:
> E-D1F2U10 (pos)
> E-D1F2U08 (neg)
> **Does the CE multimeter read -6V to -8V?**
> Y N
>
> > **025**
> > Reinstall original E-D1E2.
> > Measure for -12Vdc:
> > E-D1F2U12 (pos)
> > E-D1F2U08 (neg).
> > **Does the CE multimeter read -10.5V to -13.5V?**
> > Y N
> >
> > > **026**
> > > Measure for -12Vdc:
> > > VC1-D (pos) (10-090)
> > > E-D1F2U08 (neg)
> > > **Does the CE multimeter read -10.5V to -13.5V?**
> > > Y N
> > >
> > > > **027**
> > > > Go To Map 1034, Entry Point A.
> > >
> > > **028**
> > > Bad board
> > > E-D1 (10-170).
> >
> > **029**
> > Bad card
> > E-D1F2 (10-160).

5 5
G H

030
Bad card
E-D1E2.

031
Check continuity from E-D1F2U10 to E-D1F2P10 to
E-D1F2J10 to E-D1F2D10 to E-D1E2D10.
Is the continuity OK?
Y N

032
Bad board
E-D1 (10-170).

033
Bad card
E-D1F2
---or---
E-D1D2 (10-160).

034
(Entry Point D)
Jumper E-D1A5D04 (-data select) to E-D1B2U08.
Probe E-D1C2U12 (+write select).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

| |
| | **035**
| | Jumper E-D1C2G12 (-write) to E-D1C2J08.
| | Probe E-D1C2U12 (+write select).
| |
| | Up   Light: On
| | Down Light: Off
| |
| | **Are the lights correct?**
| | Y N
| | | |
| | | | **036**
| | | | Remove all jumpers.
| | | | Bad card
| | | | E-D1C2 (10-160).
| | | |
| | **037**
| | Probe E-D1E2B13 (data PES).
| |
| | Up   Light: On or flashing
| | Down Light: On or flashing
| |
| | **Are the lights correct?**
| | Y N
| | | |
| | | | **038**
| | | | Remove all jumpers.
| | | | Check for an open or a short to ground on drive D
| | | | dedicated cable nets (-write), (-write data), (+write
| | | | gate return) and (-reset error). See MAP 1077,
| | | | Dedicated Cable Wiring Checks
| | | | **Was an open or a short found?**
| | | | Y N

Note: An open circuit on nets A5-04, A5-09, A5-11, C2-32, and E2-02 could cause you to enter this MAP. See netlist tables, MAP 1077.

8 8 7 7
J K L M

039

-Set Power to 1 (operator panel).
Probe A-A2B5D06 (-reset error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  040

  Probe A-A2B5D11 (-write) and A-A2B5B10 (-write data).

  Up   Light: Off
  Down Light: Off

  Are the lights correct for either line?
  Y N

    041

    Probe A-A2B5D11 (-write) and A-A2B5B10 (-write data).

    Up   Light: Off
    Down Light: On

    Are the lights correct for either line?
    Y N

      042

      Using the TU Select option (99-065), select drive D and loop on TA170.
      Probe A-A2B5D11 (-write) and A-A2B5B10 (-write data)

      Up   Light: Ignore
      Down Light: On or flashing

      Are the lights correct?
      Y N

N P Q R S

043

Bad card
A-A2C2.
---or---
Bad top card connector.

044

Bad card
E-D1B2
---or---
E-D1E2
(10-160)
---or---
A-A2C2.

045

Bad card
A-A2C2.

046

Bad card
E-D1B2 (10-160).

047

Bad card
A-A2D2.

048

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

049
Remove all jumpers.
Bad card
E-D1E2 (10-160).

050
Remove jumper.
Bad card
E-D1C2 (10-160).

051
(Entry Point E)
Probe E-D1D2P10 (+home).

Note: An open circuit on net D2-37 could cause you to enter this MAP. See netlist tables, MAP 1077.

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  052
  Check continuity from E-C1A4D04 to E-D1A3D04
  (-control bus bit 0).
  Is the continuity OK?
  Y N

    053
    Bad cable.
    E-D1A3 (10-150).

  054
  Bad card
  E-D1C2 (10-160).

055
Bad card
E-D1C2
---or---
E-D1D2 (10-160).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	A	1	001
1046	A	1	001
1046	C	5	037
1046	D	7	046
1047	A	1	001
1048	A	1	001
1049	A	1	001
1050	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1063	B	5	034

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on the following nets could cause you to enter this MAP: A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, and VC-07. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-D1F2, E-D1C2, E-D1D2, E-D1B2, E-D1E2, board E-D1, cables E-D1A3 and E-D1A5, and the disk enclosure.

Is the Actuator Lock Knob on drive D unlocked?
Y N

    002
    Unlock the Actuator and run the disk MAPs again.

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2
A

003
Probe E-D1C2B13 (-shift).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

    004
    Probe E-D1C2B13 (-shift).

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

        005
        Jumper E-D1A5D04 (-data select) to E-D1A5D08.
        Probe E-D1B2U11 (write clock).

        Up   Light: On or flashing
        Down Light: On or flashing

        Are the lights correct?
        Y N

            006
            Probe E-D1B2P12 (+data select gated).

            Up   Light: On
            Down Light: Off

            Are the lights correct?
            Y N

4 4 3 3
B C D E F

007
Check for continuity (1 ohm range):
E-D1A2D02 to E-D1A2B13 (+data select gated).
Is the continuity OK?
Y N

    008
    Remove jumper

    Reseat cable E-D1A2.
    ---or---
    Bad drive D disk enclosure (10-030).
    Note: A temporary repair is to add a jumper from
    E-D1B2P12 to E-D1C2S12.

009
Check continuity from E-D1C2S12 to E-D1B2P12
(+data select gated).
Is the continuity OK?
Y N

    010
    Remove jumper.
    Bad board
    E-D1 (10-170).

011
Check for continuity of drive D (-data select). See MAP
1077, Dedicated Cable Wiring Checks
Is the continuity OK?
Y N

    012
    Exchange the bad card, cable, or board found in the
    preceding step (10-150, 10-160, 10-170).

013
Remove jumper.
Bad card
E-D1C2
---or---
E-D1B2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

014
Check for an open or a short to ground on drive D
(write clock) and (-sector).   See MAP 1077,
Dedicated Cable Wiring Checks
Was an open or a short found?
Y N

   015
   Remove jumper.
   Bad card
   E-D1B2 (10-160)
   ---or---
   Open or short to ground on +read data, -write
   data, +write gate return, -fast sync, read clock or
   write clock.   See MAP 1077, Dedicated Cable
   Wiring Checks.

016
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

017
Remove jumper.

Switch probe to MST 1,
Probe E-D1B2S11 (-increase) and E-D1B2S12
(-decrease).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   018
   Bad card
   E-D1B2 (10-160).

019
Switch probe to Multi.

Probe E-D1C2B13 (-shift).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   020
   Measure for +5Vdc (compensation coil):
   E-D1D2D04 (pos)
   E-D1D2D08 (neg).
   Does the CE multimeter read 1.0V to 1.6V?
   Y N

      021
      Remove card E-D1D2.

      Measure the resistance (10X range):
      E-D1D2D04 (pos)
      E-D1D2D08 (neg).
      Is the resistance more than 200 ohms?
      Y N

         022
         Bad drive D disk enclosure (10-030).

      023
      Bad card
      E-D1D2 (10-160).

   024
   Bad card
   E-D1F2
   ---or---
   E-D1E2
   ---or---
   E-D1D2 (10-160).

G

B C H
2 2 3

FRU ISOLATION MAP 3

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PAGE 4 OF 10

J   MAP 1037-4

025
Check for an open or a short to ground on drive D
(-sector), (-write), and (-fast sync).   See MAP
1077, Dedicated Cable Wiring Checks
Was an open or a short found?
Y N

> **026**
> Bad jumpers on card E-D1D2
> ---or---
> Bad card
> E-D1D2
> ---or---
> E-D1F2
> ---or---
> E-D1C2 (10-160).

027
Exchange the bad card, cable, or board found in
the preceding step (10-150, 10-160, 10-170).

028
Bad card
E-D1C2 (10-160).

029
Switch probe to MST 1,
Probe E-D1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **030**
> Bad card
> E-D1B2 (10-160).

031
Verify probe at MST 1.
Probe E-D1B2S11 (-increase) and E-D1B2S12
(-decrease).

Up   Light: Off
Down Light: Off

Are the lights correct for either of the lines?
Y N

> **032**
> Bad card
> E-D1F2
> ---or---
> E-D1E2
> ---or---
> E-D1D2 (10-160).

033
Bad card
E-D1B2 (10-160).

J

MAP 1037-4

034
(Entry Point B)

Check for continuity E-D1B2D08 to E-D1C2D08.
Is the continuity OK?
Y N

> **035**
> Bad board
> E-D1 (10-170).

036
Bad card
E-D1B2 (10-160).

037
(Entry Point C)

Measure for +12Vdc (profile gain voltage):
E-D1C2B02 (pos)
E-D1C2D08 (neg).

Note: An open circuit on nets C2-02 and D2-03 could cause you to enter this MAP. See netlist tables, MAP 1077.
Does the CE multimeter read more than 1.5V?
Y N

> **038**
> Measure the resistance from VC9-D to VC9-C on drive D (10-190).
> **Is the resistance in range from 300 ohms to 400 ohms?**
> Y N
>
> > **039**
> > Bad drive D disk enclosure (10-030).
>
> **040**
> Bad card
> E-D1D2 (10-160).

041
Disconnect the voltage connector VC-9 on drive D (10-190).
Measure for +5Vdc (desired velocity):
E-D1C2D02 (pos)
E-D1C2D08 (neg).
Does the CE multimeter read less than 0.3V?
Y N

> **042**
> **Does the CE multimeter read more than 5V?**
> Y N
>
> > **043**
> > Reinstall connector VC9.
> > Bad card
> > E-D1D2 (10-160).

6 6
K L

05JAN81   PN 8266319

EC 835086   PEC -------

MAP 1037-5

K L
5 5

044
Reinstall connector VC9.
Bad card
E-D1C2 (10-160).

045
Reinstall connector VC9.
Bad card
E-D1C2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

046
(Entry Point D)

Measure for -12Vdc (write current defining resistor):
E-D1B2D04 (pos)
E-D1B2D08 (neg).
**Does the CE multimeter read between -10.5V and
-13.5V?**
Y N

   047
   Bad card
   E-D1B2 (10-160).

048
Measure for -5Vdc (write current):
E-D1B2D07 (pos)
E-D1B2D08 (neg).
**Does the CE multimeter read between -3.5V to
-4.5V?**
Y N

   049
   Bad card
   E-D1B2 (10-160).
   ---or---
   Bad drive D disk enclosure (10-030).

050
Is cable E-D1A2 seated correctly (10-190)?
Y N

   051
   Reseat the cable and run the disk MAPs again.

Note: An open cirucit on the following nets A2-02,
B2-04, B2-08, B2-10, B2-13, C2-10, and V-04 could
cause you to enter this MAP. See netlist tables, MAP
1077.

8
M

052

Probe the pins shown in Table 4.

```
.-----------Table 4 --------------.
| Note: All probing on board E-D1 |
|                                 |
| PROBE MST 1 |    PROBE MULTI     |
|A2B03  A2B04 |A2B06 A2B05   A2B02 |
|  D      D   |  U     U       D   |
-----------------------------------
```

Are the lights correct?

Y N

> **053**
>
> Probe the pins shown in Table 1 and check the results of the probing against the entries in the table. If the results match, that head is selected (see Note 1).
>
> ```
> .------------ Table 1 -------------.
> | Note: All probing on board E-D1  |
> |                                  |
> |    | Probe MST1|  Probe Multi    |
> |Head|A2B03 A2B04|A2B06 A2B05 A2B02|
> | 0     U     U     D     U     U  |
> | 1     D     U     D     U     U  |
> | 2     U     D     D     U     U  |
> | 3     D     D     D     U     U  |
> | 4     U     U     U     D     U  |
> | 5     D     U     U     D     U  |
> | 6     U     D     U     D     U  |
> | 7     D     D     U     D     U  |
> | 8     U     U     U     U     D  |
> | 9     D     U     U     U     D  |
> |10     U     D     U     U     D  |
> |11     D     D     U     U     D  |
> ------------------------------------
> ```
>
> **Was a valid head selected?**
>
> Y N

Note 1:

U Means- Up   Light: On

          Down Light: Off

D Means- Up   Light: Off

          Down Light: On

9 9 9
N P Q

054

Probe the pins in Table 2 to determine which head is selected (see Note 1).

```
.----------- Table 2 ------------.
| Note: All probing on board E-D1|
|                                |
|            Probe Multi         |
| Head|B2P07 B2P05|B2P10 B2P06   |
|  0     U     U     U     U     |
|  1     D     U     U     U     |
|  2     U     D     U     U     |
|  3     D     D     U     U     |
|  4     U     U     D     U     |
|  5     D     U     D     U     |
|  6     U     D     D     U     |
|  7     D     D     D     U     |
|  8     U     U     U     D     |
|  9     D     U     U     D     |
| 10     U     D     U     D     |
| 11     D     D     U     D     |
---------------------------------
```

Was a valid head selected?
Y N

> **055**
> Bad card
> E-D1C2 (10-160).

056

Go to Step 060, Entry Point E.

057

Bad card
E-D1B2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

058

Probe E-D1C2G12 (-write).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **059**
> Bad card
> A-A2C2
> ---or---
> Short on -write net. See dedicated cable wiring checks.

060

(Entry Point E)

-Set Power to 0 (operator panel).
Measure the resistance (10 ohm range) from E-D1A2D04 (actuator I/O line B) to E-D1A2D05 (actuator I/O line A).
Is the resistance less than 300 ohms?
Y N

> **061**
> Bad drive D disk enclosure (10-030).

062

-Set Power to 1 (operator panel).

Add a jumper from E-D1C2G11 (+write block) to E-D1C2J08.
Using the TU Select option (99-065), select drive D and loop on TA169.
Probe E-D1C2M11 (+data unsafe).

Up   Light: On
Down Light: Off

(Step 062 continues)

(Step 062 continued)
Are the lights correct?
Y N

┃
┃ **063**
┃ Remove jumper.
┃ Bad card
┃ E-D1C2 (10-160).
┃

064
Remove jumper.
Bad card
E-D1B2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	A	1	001
1050	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1083	A
2	010	1083	A
2	012	1083	A

001
(Entry Point A)
Probe A-A2B4D04 (-data select).

Up   Light: On
Down Light: Off

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-D1B2, E-D1C2, E-D1F2, E-D1E2, and E-D1D2, cables E-D1A3 and E-D1A5, and the drive D disk enclosure.

Note:
An open circuit on nets A5-10, B2-07, B2-11, C2-12 C2-13, C2-25, C2-26, D2-07, D2-42, E2-04, and V-04 could cause you to enter this MAP. See netlist tables, MAP 1077.

Are the lights correct?
Y N

002 Bad card A-A2C2 ---or--- A-A2D2 ---or--- Bad top card connector ---or--- Short to Ground on drive C (-data select). See MAP 1077, Dedicated Cable Wiring Checks.

FRU ISOLATION MAP 4

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003
Probe A-A2A4D04 (-data select).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   004
   Bad card
   A-A2C2
   ---or---
   A-A2D2
   ---or---
   Bad top card connector
   ---or---
   Short to Ground on drive A (-data select). See MAP
   1077, Dedicated Cable Wiring Checks.

005
Probe A-A2B6A02 (-data select) (see FSL AB300).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   006
   Bad card
   A-A2C2
   ---or---
   A-A2D2
   ---or---
   Bad top card connector
   ---or---
   Short to Ground on drive B (-data select). See MAP
   1077, Dedicated Cable Wiring Checks.

007
Probe A-A2B4B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   008
   Go To Map 1083, Entry Point A.

009
Probe A-A2A4B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   010
   Go To Map 1083, Entry Point A.

011
Probe A-A2B6A04 (-interrupt) (see FSL AB300).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   012
   Go To Map 1083, Entry Point A.

B

C
2

013
Jumper E-D1A5D04 (-data select) to E-D1B2U08.
Probe E-D1A5B05 (-sector).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  014
  Check for an open or a short to ground on drive D
  (-sector). See MAP 1077, Dedicated Cable Wiring
  Checks.
  Was an open or a short found?
  Y N

    015
    Remove cable E-D1A5.
    -Set Power to 1 (operator panel).
    Probe A-A2B6B04 (-sector).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

      016
      Reinstall all cables.
      Bad card
      A-A2C2.

    017
    Reinstall all cables.
    Bad card
    E-D1D2 (10-160).

  018
  Exchange the bad card, cable, or board found in the
  preceding step (10-150, 10-160, 10-170).

Note: Remove this jumper when leaving this MAP.
Failure to do so will result in a WRAP error on each of
the remaining disk drives.

4
D

019
Probe E-D1A5D12 (write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    020
    Probe E-D1C2S12 (+data select gated).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        021
        Disconnect cable E-D1A2.
        -Set Power to 1 (operator panel).
        Wait 30 seconds, and then press Reset (CE panel).
        Probe E-D1C2S12 (+data select gated).

        Up   Light: On
        Down Light: Off

        Are the lights correct?
        Y N

            022
            Reinstall all cables.
            Bad card
            E-D1C2 (10-160).

        023
        Bad card
        E-D1B2 (10-160).
        ---or---
        Bad drive D disk enclosure (10-030).

024
Probe E-D1B2P12 (+data select gated).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    025
    Check for continuity
    E-D1C2S12 to E-D1B2P12 (+data select gated).
    Is the continuity OK?
    Y N

        026
        Bad drive D disk enclosure (10-030).
        Note:
        A temporary repair is to add a jumper from E-D1C2S12 to E-D1B2P12.

    027
    Bad card
    E-D1B2 (10-160).

028
Check for an open or a short to ground on drive D
(write clock). See MAP 1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

    029
    Bad card
    E-D1B2 (10-160).
    ---or---
    A-A2C2.

030
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

031
Probe E-D1B2P09 (-chip select 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   032
   Probe E-D1B2P06 (-head select 8) and E-D1B2P10
   (-head select 4).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      033
      Bad card
      E-D1C2 (10-160).

   034
   Probe E-D1B2M05 (-FH select).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      035
      Bad card
      E-D1B2 (10-160).

   036
   Bad card
   E-D1C2 (10-160).

G

037
Probe E-D1C2B06 (-go home or POFL).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   038
   Bad card
   E-D1D2
   ---or---
   E-D1C2 (10-160).

039
Switch probe to MST 1,
Probe E-D1B2P04 (-head select B).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   040
   Probe the pins shown in the following table and
   determine which head is selected by matching the
   probe results against the entries in the table. If the
   results match, that head is selected.

   (Step 040 continues)

(Step 040 continued)

```
.------------ Table 1 -------------.
| Note: All probing on board E-D1  |
|                                  |
|     | Probe MST1|  Probe Multi   |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0     U     U     D     U     U  |
| 1     D     U     D     U     U  |
| 2     U     D     D     U     U  |
| 3     D     D     D     U     U  |
| 4     U     U     U     D     U  |
| 5     D     U     U     D     U  |
| 6     U     D     U     D     U  |
| 7     D     D     U     D     U  |
| 8     U     U     U     U     D  |
| 9     D     U     U     U     D  |
|10     U     D     U     U     D  |
|11     D     D     U     U     D  |
-----------------------------------
```

Was a valid head selected?

Y N

041
Bad card
E-D1B2 (10-160).

042
Note head selected from Table 1.

Probe the pins in the following table to determine which head is selected (see Note 1).

Note 1:
U Means- Up   Light: On
         Down Light: Off
D Means- Up   Light: Off
         Down Light: On

(Step 042 continues)

(Step 042 continued)

```
.----------- Table 2 ------------.
| Note: All probing on board E-D1|
|                                 |
|          Probe Multi            |
| Head|B2P07 B2P05|B2P10 B2P06    |
|   0    U     U     U     U      |
|   1    D     U     U     U      |
|   2    U     D     U     U      |
|   3    D     D     U     U      |
|   4    U     U     D     U      |
|   5    D     U     D     U      |
|   6    U     D     D     U      |
|   7    D     D     D     U      |
|   8    U     U     U     D      |
|   9    D     U     U     D      |
|  10    U     D     U     D      |
|  11    D     D     U     D      |
---------------------------------
```

Was the same head selected both times?
Y N

  043
  Bad card
  E-D1B2 (10-160).

044
Was head three selected?
Y N

  045
  Bad card
  E-D1C2 (10-160).
  ---or---
  Bad drive D disk enclosure (10-030).

046
Bad card
E-D1B2
---or---
E-D1C2 (10-160).
---or---
Bad drive D disk enclosure (10-030).

047
Measure for +5Vdc (VCO error signal):
E-D1B2U13 (pos)
E-D1B2P08 (neg).
Does the CE multimeter read between 0V to 0.5V?
Y N

  048
  Verify probe at MST 1.
  Probe E-D1B2U06 (+servo inhibit VCO).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    049
    Bad card
    E-D1E2 (10-160).

  050
  Bad card
  E-D1B2 (10-160).

051
Switch probe to Multi.

With the power on remove cable E-D1A5.
Probe E-D1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  052
  Reinstall the cable.
  Bad card
  E-D1C2 (10-160).

053

Reinstall the cable with the power switch on.
Probe E-D1C2G06 (-FH not selected).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **054**
> Bad card
> E-D1C2 (10-160).

055

Switch probe to MST 1,
Probe E-D1B2P13 (standarized data) and E-D1B2S09
(1F read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **056**
> Check for an open or a short to ground on drive D
> (-read).   See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **057**
> > Bad card
> > E-D1B2
> > ---or---
> > E-D1D2 (10-160).
>
> **058**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

K

059

Switch probe to Multi.

Probe A-A2C2M05 (+read data).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **060**
> Check for an open or a short to ground on drive D
> (+read data).   See MAP 1077, Dedicated Cable
> Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **061**
> > Bad card
> > E-D1B2
> > ---or---
> > A-A2C2.
>
> **062**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

063
Probe A-A2B5D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **064**
> Check for an open or a short to ground on drive D
> (-index).   See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N

9 9 9
L M N

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MAP 1038-8

L M N
8 8 8

FRU ISOLATION MAP 4

5340 SYSTEMS UNIT

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P   MAP 1038-9

065
Remove cable E-D1A5.
-Set Power to 1 (operator panel).
Probe A-A2B6D02 (-index).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  066
  Reinstall the cable.
  Bad card
  A-A2C2.

067
Reinstall the cable.
Bad card
E-D1D2 (10-160).

068
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

069
Measure the following for +5Vdc (AGC reference and control voltages):

E-D1B2G02 (pos) to E-D1B2J08 (neg)
E-D1B2J02 (pos) to E-D1B2J08 (neg).

Does the CE multimeter read 1.2 to 1.9V?
Y N

  070
  Bad card
  E-D1B2 (10-160).

P

071
Switch probe to MST 1,
Probe E-D1E2B13 (data PES).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  072
  Measure for +12Vdc:
  E-D1B2S10 (pos)
  E-D1B2U08 (neg).
  Does the CE multimeter read 1.5V to 2.5V?
  Y N

    073
    Bad card
    E-D1B2 (10-160).

  074
  Bad card
  E-D1E2
  ---or---
  E-D1B2
  (10-160).

075
Switch probe to Multi.

Probe E-D1B2U07 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

076

Check for an open or a short to ground on drive D
(read clock). See MAP 1077, Dedicated Cable
Wiring Checks.
Was a short found?
Y N

    077
    Bad card
    E-D1B2 (10-160).
    ---or---
    A-A2C2.

078

Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

079

Using the TU Select option (99-065), select drive D and
loop on TA170.
Probe E-D1B2S02 (-fast sync).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    080
    Probe E-D1A5B03 (-control sample).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

        081
        Bad card
        E-D1C2
        ---or---
        E-D1D2
        ---or---
        E-D1F2 (10-160).

1
1
S T

082

Probe E-D1D2D06 (+out direction).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    083
    Switch probe to MST 1,
    Probe E-D1B2U06 (+servo inhibit VCO).

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

        084
        Switch probe to Multi.
        Probe E-D1A5B09 (-missing sector pulse).

        Up   Light: Off
        Down Light: On

        Are the lights correct?
        Y N

            085
            Check for an open or a short to ground on
            drive D (-fast sync), (read clock), (write clock),
            (-index), and (-sector). See MAP 1077,
            Dedicated Cable Wiring Checks.
            Was an open or a short found?
            Y N

                086
                Bad card
                E-D1B2 (10-160).
                ---or---
                A-A2C2.

1 1 1 1
1 1 1 1
U V W X

S U V W X
1 1 1 1 1
0 0 0 0 0

FRU ISOLATION MAP 4
5340 SYSTEMS UNIT
PAGE 11 OF 13

Y Z A
A

MAP 1038-11

087
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

088
Bad card
E-D1D2 (10-160).
---or---
Short to ground on drive D (-missing sector pulse). See MAP 1077, Dedicated Cable Wiring Checks.

089
Bad card
E-D1B2 (10-160).

090
Bad card
E-D1D2 (10-160).

091
Probe E-D1C2J11 (-read).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    092
    Check for an open or a short to ground on drive D (-read). See MAP 1077, Dedicated Cable Wiring Checks.
    Was an open or a short found?
    Y N

Y Z A
    A

093
Remove cable E-D1A5.
-Set Power to 1 (operator panel).
Probe E-D1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    094
    Bad card
    E-D1C2 (10-160).

095
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

096
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

097
Probe E-D1B2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

1 1
2 2
A A
B C

098
Probe E-D1C2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  099
  Bad card
  E-D1C2
  ---or---
  E-D1B2 (10-160).

100
Bad board
E-D1 (10-170).

101
Probe E-D1C2B05 (-tag 010 CS).

Up   Light: On or flashing
Down Light: On or flashing

Note:
Observe for one minute.
Are the lights correct?
Y N

  102
  Bad card
  E-D1C2 (10-160).

103
Probe A-A2C2J13 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

A A
D E

104
Check for an open or a short to ground on drive D
(read clock).   See MAP 1077, Dedicated Cable
Wiring Checks.
Was an open or a short found?
Y N

  105
  Bad card
  E-D1B2 (10-160).
  ---or---
  A-A2C2.

106
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

107
Switch probe to MST 1,
Probe E-D1A2B03 (-head select A) and E-D1A2B04
(-head select B).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

  108
  Switch probe to Multi.

  Probe E-D1B2P05 (-head select 2) and E-D1B2P07
  (-head select 1).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    109
    Bad card
    E-D1C2 (10-160).

1 1
3 3
A A
F G

110

Bad card

E-D1B2 (10-160).

---or---

Bad drive D disk enclosure (10-030).

111

Remove jumper.

Switch probe to Multi.

Probe E-D1A5D04 (-data select).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

> **112**
>
> Bad card
>
> A-A2C2.
>
> ---or---
>
> Open on drive D (-data select). See MAP 1077,
> Dedicated Cable Wiring Checks.

113

Check for continuity on drive D (-data select)
(-fast sync), (-index), (-sector), (-read),
(read clock) and (+read data). See MAP 1077,
Dedicated Cable Wiring Checks.

Was an open found?
Y N

> **114**
>
> Bad card
>
> A-A2C2
>
> ---or---
>
> E-D1B2
>
> ---or---
>
> E-D1C2
>
> ---or---
>
> E-D1F2 (10-160)
>
> ---or---
>
> Bad drive D disk enclosure (10-030).

115

Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

A
H

MAP 1039-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	A	1	001
1045	A	1	001
1047	A	1	001
1049	A	1	001
1050	A	1	001
1051	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1057	A	1	001
1071	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED: E-D1F2, Actuator driver card, E-D1D2, E-D1E2, and E-D1C2.

Note:
An open cirucit on nets D2-15,D2-16,D2-43 F2-19,F2-24,F2-25,F2-27, and V-05 could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the Actuator Lock Knob on drive D unlocked?
Y N

  002
  Unlock the Actuator and run the disk MAPs again.

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2
A

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MAP 1039-1

A
1

E

MAP 1039-2

003
Measure for +5Vdc (-reset bucket):
E-D1E2B07 (neg)
E-D1E2D08 (pos).
Does the CE multimeter read more than 1.8V?
Y N

   004
   Bad jumpers on card E-D1E2
   ---or---
   Bad card
   E-D1E2 (10-160).

005
Probe E-D1D2U07 (-out drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   006
   Probe E-D1D2G08 (-missing sector pulse).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      007
      Probe E-D1D2G04 (-select demod N1).

      Up   Light: On or flashing
      Down Light: On or flashing

      Are the lights correct?
      Y N

6 4 4
B C D E

008
Probe E-D1F2P05 (+select integrator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   009
   Probe E-D1D2S07 (-in drive).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      010
      Jumper E-D1D2M11 (+recalibrate timeout SS) to
      E-D1D2PO8.
      Probe E-D1D2S07 (-in drive) and E-D1D2U07
      (-out drive).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         011
         Probe E-D1D2S07 (-in drive) and E-D1D2U07
         (-out drive).

         Up   Light: On or flashing
         Down Light: On or flashing

         Are the lights correct for only one of the two lines?
         Y N

4 3 3 3 3
F G H J K

012
Perform the following in order:

1. Remove jumper E-D1D2M11
(+recalibrate timeout SS) to E-D1D2P08.
2. Jumper E-D1F2P02 (-power on delay) to E-D1F2P08.
3. Jumper E-D1D2S06 (kick SS) to E-D1D2U08.
4. Remove jumper E-D1F2P02 to E-D1F2P08.
5. Remove jumper E-D1D2S06 to E-D1D2U08.
6. Run the disk drive MAPs to drive D using MDI
   special (99-090):
-Select drive D.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

> **013**
> Pull out card E-D1F2.
> Measure the resistance (1 ohm range)
> from E-D1F2M04 (VCM start) to E-D1F2M05 (VCM
> finish).
> **Is the resistance less than 30 ohms?**
> Y N
>
> > **014**
> > Reinstall card.
> > Bad drive D disk enclosure (10-030).
>
> **015**
> Reinstall card.
> Check for continuity (1 ohm range)
> VC-5D (10-190) to E-D1F2S09.
> **Is the continuity OK?**
> Y N
>
> > **016**
> > Bad board
> > E-D1 (10-170).

017
Check for continuity VC5-D (10-190) to
ground on PDTB1
(5340 Vol. D FSL YA080).
Is the continuity OK?
Y N

> **018**
> Open on drive D DC power cable.

019
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

020
Remove jumper.
Bad card
E-D1D2 (10-160).

021
Remove jumper.
Bad card
E-D1D2 (10-160).

022
Bad card
E-D1D2 (10-160).

023
Measure for +5Vdc (VCM finish):
E-D1F2M05 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read 1V to 2V?
Y N

> **024**
> Measure for +5Vdc (base NPN out):
> E-D1F2U02 (pos)
> E-D1F2P08 (neg).
> **Does the CE multimeter read less than 0.7 volts?**
> Y N

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EC 835086   PEC -------

MAP 1039-3

025
Pull out card E-D1F2.
Measure the resistance (1 ohm range) between
E-D1F2M04 (VCM start) and E-D1F2M05 (VCM
finish).
Is the resistance less than 30 ohms?
Y N

  026
  Bad drive D disk enclosure (10-030).

027
Reinstall card E-D1F2.
Bad card
Actuator coil driver card on drive D (10-160).

028
Measure for +24Vdc (base PNP out):
E-D1F2M12 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read less than 18V?
Y N

  029
  Bad card
  E-D1F2 (10-160).

030
Pull out card E-D1F2.
Measure the resistance (1 ohm range) between
E-D1F2M04 (VCM start) and E-D1F2M05 (VCM finish).
Is the resistance less than 30 ohms?
Y N

  031
  Reinstall card E-D1F2.
  Bad drive D disk enclosure (10-030).

032
Reinstall card E-D1F2.
Bad card
Actuator coil driver card on drive D (10-160).

033
Bad card
E-D1F2 (10-160).

  034
  Bad drive D disk enclosure (10-030).

035
Measure for +5Vdc (VCM finish):
E-D1F2M05 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read greater than 3V?
Y N

  036
  Bad card
  E-D1E2 (10-160).

037
Bad card
E-D1F2 (10-160).

038
Probe E-D1F2B12 (+normal error).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

  039
  Probe E-D1F2B12 (+normal error).

```
  Up    Light: On
  Down  Light: Off
```

  Are the lights correct?
  Y N

MAP 1039-5

040
Probe E-D1F2G03 (+coil current low).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    041
    Probe E-D1D2S07 (-in drive).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        042
        Probe E-D1F2G12 (+on track).

        Up   Light: On
        Down Light: Off

        Are the lights correct?
        Y N

            043
            Bad card
            Actuator coil driver card on drive D (10-160).

        044
        Bad card
        E-D1F2 (10-160).

    045
    Measure for +12Vdc (hybrid velocity):
    E-D1D2D02 (neg)
    E-D1D2D08 (pos).
    Does the CE multimeter read more than 6.0V?
    Y N

046
Bad card
E-D1F2 (10-160).

047
Bad card
E-D1D2 (10-160).

048
Bad card
E-D1D2 (10-160).

049
Bad card
E-D1D2
---or---
E-D1F2 (10-160).

050
Measure for +24Vdc (VCM finish):
E-D1F2M05 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

    051
    Measure for +5Vdc (VCM start):
    E-D1F2M04 (pos).
    E-D1F2P08 (neg).
    Does the CE multimeter read more than 2V?
    Y N

        052
        Bad card
        E-D1D2 (10-160).

    053
    Bad card
    E-D1F2 (10-160).

U V W

6
X

054
Measure for +5Vdc (VCM start):
E-D1F2M04 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 5V?
Y N

> **055**
> Probe E-D1D2B03 (+lin reg N of even track).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
>> **056**
>> Measure for +5Vdc (hybrid velocity):
>> E-D1D2D02 (neg)
>> E-D1D2D08 (pos).
>> **Does the CE multimeter read more than 2V?**
>> Y N
>>
>>> **057**
>>> Bad card
>>> Actuator coil driver card on drive D (10-160).
>>
>> **058**
>> Bad card
>> E-D1D2 (10-160).
>
> **059**
> Bad card
> E-D1F2 (10-160).

060
Bad card
E-D1D2 (10-160).

061
Probe E-D1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **062**
> Probe E-D1F2B03 (+even).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
>> **063**
>> Bad card
>> E-D1F2 (10-160).
>
> **064**
> Probe E-D1F2J04 (-bad AGC level).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
>> **065**
>> Bad card
>> E-D1F2 (10-160).

9 7
Y Z

066
Switch probe to MST 1,
Probe E-D1E2B09 (-counter G).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **067**
> Verify probe at MST 1.
> Probe E-D1E2B09 (-counter G).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> Observe for one minute.
> **Are the lights correct?**
> Y N
>
> > **068**
> > Switch probe to Multi.
> >
> > Probe E-D1F2G03 (+coil current low).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **069**
> > > Probe E-D1D2U04 (-select integrator).
> > >
> > > Up   Light: On
> > > Down Light: Off
> > >
> > > **Are the lights correct?**
> > > Y N

070
Bad jumpers on card E-D1D2
---or---
Bad card
E-D1D2 (10-160).

071
Probe E-D1D2U06 (+servo protect).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **072**
> Measure for +24Vdc (base PNP in):
> E-D1F2U07 (pos)
> E-D1F2U08 (neg).
> **Does the CE multimeter read more than 10.0V?**
> Y N
>
> > **073**
> > Bad card
> > Actuator coil driver card on drive D (10-160).

074
Measure for +5Vdc (handover velocity):
E-D1D2S03 (pos)
E-D1D2U08 (neg).
Does the CE multimeter read less than 0.8V?
Y N

> **075**
> Bad card
> E-D1D2
> ---or---
> E-D1F2 (10-160).

9 8 8
A A A   A A
A B C   D E

8 8
A A
F G

076
Bad card
Actuator coil driver card on drive D
---or---
E-D1D2
(10-160).

077
Switch probe to MST 1,
Probe E-D1E2J12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **078**
> Bad jumpers on card E-D1E2
> ---or---
> Bad card
> E-D1E2 (10-160).

079
Switch probe to Multi.

Probe E-D1D2B03 (+lin reg N of even track).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **080**
> Bad card
> E-D1E2 (10-160).

081
Bad jumpers on card E-D1D2
---or---
Bad card
E-D1D2 (10-160).

082
Measure for +5Vdc (data PES):
E-D1E2B13 (neg)
E-D1E2B08 (pos).
Does the CE multimeter read more than 4.0V?
Y N

> **083**
> Bad card
> E-D1D2
> ---or---
> E-D1F2 (10-160).

084
Bad card
E-D1E2 (10-160).

085
Switch probe to Multi.

Probe E-D1F2G03 (+coil current low).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **086**
> Probe E-D1F2S12 (+NSW).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **087**
> > Bad card
> > E-D1D2
> > ---or---
> > E-D1E2
> > ---or---
> > E-D1F2 (10-160).

A A A
A H J
7 8 8

FRU ISOLATION MAP 5

5340 SYSTEMS UNIT

PAGE 9 OF 11

Y
6

MAP 1039-9

088
Switch probe to MST 1,
Probe E-D1E2B09 (-counter G).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   089
   Bad card
   E-D1E2 (10-160).

090
Bad card
E-D1F2
---or---
E-D1E2 (10-160).

091
Probe E-D1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   092
   Bad card
   E-D1F2 (10-160).

093
Bad card
E-D1E2 (10-160).

094
Bad card
E-D1E2 (10-160).

095
Probe E-D1D2G04 (-select demod N1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   096
   Probe E-D1D2S10 (-sector).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      097
      Bad card
      E-D1D2
      ---or---
      E-D1C2 (10-160).

   098
   Probe E-D1F2G12 (+on track).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      099
      Bad card
      E-D1D2 (10-160).

1 1
1 0
A A
K L

100
Probe E-D1D2U04 (-select integrator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **101**
> Bad card
> E-D1D2 (10-160).

102
Probe E-D1F2S12 (+NSW).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **103**
> Measure for +5Vdc (handover velocity):
> E-D1D2S03 (pos)
> E-D1D2U08 (neg).
> **Does the CE multimeter read more than 1.1V?**
> Y N
>
> > **104**
> > Measure for +5Vdc (CSR in):
> > E-D1F2U05 (pos)
> > E-D1F2U08 (neg).
> > **Does the CE multimeter read more than 1.0V?**
> > Y N
> >
> > > **105**
> > > Bad card
> > > E-D1D2 (10-160).
> >
> > **106**
> > Bad card
> > Actuator coil driver card on drive D (10-160).

107
Probe E-D1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **108**
> Bad card
> E-D1F2 (10-160).

109
Jumper E-D1F2P11 (-in drive) to E-D1F2P08.
Measure for +24Vdc (VCM finish):
E-D1F2M05 (pos)
E-D1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

> **110**
> Bad card
> E-D1E2
> ---or---
> E-D1D2 (10-160).

111
Bad card
Actuator coil driver card on drive D (10-160).

112
Measure the resistance (10 ohm range) of the
following:
E-D1F2U05 to E-D1F2U08 (CSR in)
E-D1F2S05 to E-D1F2U08 (CSR out).
Are both the resistances less than 10 ohms?
Y N

> **113**
> Bad card
> Actuator coil driver card on drive D (10-160).

1
1
A
P

```
A A
K P
9 1
  0
```

114
Bad card
E-D1F2 (10-160).

115
Probe E-D1F2B03 (+even).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  116
  Bad card
  E-D1E2 (10-160).

117
Switch probe to MST 1,
Probe E-D1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  118
  Bad card
  E-D1B2 (10-160).

119
Measure for +5Vdc:
E-D1B2S11(neg) to E-D1B2U08(pos)
E-D1B2S12(neg) to E-D1B2U08(pos).
Are both voltages greater than 0.5V?
Y N

  120
  Bad card
  E-D1B2 (10-160).

```
A
Q
```

```
A
Q
```

121
Switch probe to Multi.
Probe E-D1D2D06 (+out direction).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  122
  Bad card
  E-D1D2
  ---or---
  E-D1F2 (10-160).

123
Bad card
E-D1D2 (10-160).

5340 SYSTEMS UNIT

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1040	A	1	001

001
(Entry Point A)
-Set Power to 0 (operator panel).
Check continuity from A-A2A5D02 to A-A2A5B13.

MAP DESCRIPTION:
This MAP isolates disk cable continuity failures.

START CONDITIONS:
The common adapter detected a disk cable continuity failure.

LOGIC CARDS TESTED:
The A-A2D2 and the terminator card (located at E-A1A4 for a single drive system, E-B1A4 for a dual drive system, E-C1A4 for a three drive system, or E-D1A4 for a four drive system) and cables E-A1A5, E-A1A4, E-A1A3, E-B1A4, E-B1A5, E-C1A4, E-C1A5, and E-D1A5.

Is the continuity OK?
Y N

   002
   Check continuity from E-A1A4D02 to E-A1A4B13.

   Is the continuity OK?
   Y N

      003
      Is this a one drive system?
      Y N

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```
3 3 3 2
A B C D
```

004
Check continuity from E-B1A4D02 to E-B1A4B13.

Is the continuity OK?
Y N

005
Is this a two drive system?
Y N

006
Check continuity from E-C1A4D02 to E-C1A4B13.

Is the continuity OK?
Y N

007
Is this a three drive system?
Y N

008
Check continuity from E-D1A4D02 to E-D1A4B13.

Is the continuity OK?
Y N

009
Bad terminator card, E-D1A4 (10-140).

010
Check continuity from E-D1A3D02 to E-D1A3B13.

Is the continuity OK?
Y N

011
Bad board
E-D1 (10-170).

012
Bad cable E-C1A4 (10-150).

013
Bad terminator card, E-C1A4 (10-140).

014
Check continuity from E-C1A3D02 to E-C1A3B13.

Is the continuity OK?
Y N

015
Bad board
E-C1 (10-170).

016
Bad cable E-B1A4 (10-150).

017
Bad terminator card, E-B1A4 (10-140).

018
Check continuity from E-B1A3D02 to E-B1A3B13.

Is the continuity OK?
Y N

019
Bad board
E-B1 (10-170).

020
Bad cable E-A1A4 (10-150).

A B C
1 1 1
CABLE CONTINUITY MAP

5340 SYSTEMS UNIT

PAGE 3 OF 5

M   MAP 1076-3

021
Bad terminator card, E-A1A4 (10-140).

022
Check continuity from E-A1A3D02 to E-A1A3B13.

Is the continuity OK?
Y N

    023
    Bad board
    E-A1 (10-170).

024
Bad cable E-A1A3 (10-150).

025
Check continuity from A-A2A4B02 to A-A2A4D13.

Is the continuity OK?
Y N

    026
    Check continuity from E-A1A5B02 to E-A1A5D13.

    Is the continuity OK?
    Y N

        027
        Bad board
        E-A1 (10-170).

    028
    Bad cable E-A1A5 (10-150).

029
Is this a one drive system?
Y N

030
Check continuity from A-A2A6D04 to A-A2C6E02.

Is the continuity OK?
Y N

    031
    Check continuity from E-B1A5B02 to E-B1A5D13.

    Is the continuity OK?
    Y N

        032
        Bad board
        E-B1 (10-170).

    033
    Bad cable E-B1A5 (10-150).

034
Is this a two drive system?
Y N

    035
    Check continuity from A-A2B4D13 to A-A2B4B02.

    Is the continuity OK?
    Y N

        036
        Check continuity from E-C1A5B02 to E-C1A5D13.

        Is the continuity OK?
        Y N

            037
            Bad board
            E-C1 (10-170).

        038
        Bad cable E-C1A5 (10-150).

5
L M

4 4
N P

039

Is this a three drive system?

Y N

    040

    Check continuity from A-A2B5D13 to A-A2B5B02.

    Is the continuity OK?

    Y N

        041

        Check continuity from E-D1A5B02 to E-D1A5D13.

        Is the continuity OK?

        Y N

            042

            Bad board

            E-D1 (10-170).

        043

        Bad cable E-D1A5 (10-150).

    044

    Check continuity from A-A2B5D13 to A-A2B5B02.

    Is the continuity OK?

    Y N

        045

        Bad board

        A-A2.

046

Check continuity from A-A2B5B02 to A-A2B5D08.

Is the continuity OK?

Y N

    047

    Bad feature wire, A-A2B5B02 to A-A2B5D08

Q R

048

Bad card

A-A2D2.

049

Check continuity from A-A2D2M07 to A-A2B4B02.

Is the continuity OK?

Y N

    050

    Bad board

    A-A2.

051

Check continuity from A-A2B4B02 to A-A2B4D08.

Is the continuity OK?

Y N

    052

    Bad feature wire, A-A2B4B02 to A-A2B4D08

053

Bad card

A-A2D2.

054

Check continuity from A-A2D2M07 to A-A2A6D04.

Is the continuity OK?

Y N

    055

    Bad board

    A-A2.

056

Check continuity from A-A2A6D04 to A-A2B6E02.

Is the continuity OK?

Y N

057
Bad feature wire, A-A2A6D04 to A-A2B6E02

058
Bad card
A-A2D2.

059
Check continuity from A-A2D2M07 to A-A2A4B02.

Is the continuity OK?
Y N

  060
  Bad board
  A-A2.

061
Check continuity from A-A2A4B02 to A-A2A4D08.

Is the continuity OK?
Y N

  062
  Bad feature wire, A-A2A4B02 to A-A2A4D08

063
Bad card
A-A2D2.

```
.----------------------------------------------------------------.
|                                                                |
|                        MAP DESCRIPTION:                        |
|                        This MAP contains a list of the         |
|                        disk drive nets.                        |
|                        START CONDITIONS:    None               |
|                        LOGIC CARDS TESTED: None                |
|                                                                |
|                                                                |
| BUS CABLE WIRING CHECKS                                        |
|                                                                |
|                                                                |
| The control bus and tag bus on the disk drive interface follows|
| a path that goes from the A-A2D2 card to   the   terminator card,|
| E-A1A4 in a single drive system, E-B1A4  in  a  dual  drive,   |
| E-C1A4 in a three drive system  and  E-D1A4  in  a  four  drive|
| system.                                                        |
| Continuity may be checked by starting with  the  A-A2D2 card   |
| pins, tracing the continuity to the A-A2A5 position,  along the|
| cable to E-A1A3,  and on board E-A1 to the E-A1C2  card  and the|
| E-A1A4 position.                                               |
| On a dual drive  system,  continuity  goes  from E-A1A4 along the|
| cable to E-B1A3, and on board E-B1 to  the E-B1C2 card and the |
| E-B1A4 position.                                               |
| On a three drive system, continuity goes from E-B1A4  along the|
| cable to E-C1A3, and on board E-C1 to the E-C1C2 card and the  |
| E-C1A4 position.                                               |
| On a four drive system, continuity goes from E-C1A4  along the |
| cable to E-D1A3, and on board E-D1 to the E-D1C2 card and the  |
| E-D1A4 position.                                               |
| The table below can be used to check continuity.              |
|                                                                |
|                                                                |
|                                                                |
| The tables can also be used to check for a short to  ground.  If|
| a short is found, all cards and cables  on  the  net  should  be|
| removed and checked for the short.  The  A-A2, E-A1,  E-B1,    |
| E-C1, and E-D1 boards should also be checked if the short      |
| is not found on the cards and cables.                          |
|                                                                |
|                                                                |
|                                                                |
|                                                                |
```

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05JAN81   PN 8265708

EC 835086   PEC 835000

MAP 1077-1

Bus Cable Board Wiring Net Name	Continuity on board A-A2		Continuity on boards E-A1, E-B1, E-C1, E-D1		
-Control sample received	D2P04	A5B12	A3B12	C2P09	A4B12
-Tag bus bit 0	D2B10	A5B02	A3B02	C2M09	A4B02
-Tag bus bit 1	D2B09	A5B03	A3B03	C2M07	A4B03
-Tag bus bit 2	D2B12	A5B04	A3B04	C2P07	A4B04
-Tag bus parity bit	D2B13	A5B05	A3B05	C2M08	A4B05
-Control bus bit 0	D2J07	A5D04	A3D04	C2M04	A4D04
-Control bus bit 1	D2G07	A5D05	A3D05	C2P02	A4D05
-Control bus bit 2	D2G08	A5D06	A3D06	C2M03	A4D06
-Control bus bit 3	D2G09	A5D07	A3D07	C2M02	A4D07
-Control bus bit 4	D2G10	A5D09	A3D09	C2M05	A4D09
-Control bus bit 5	D2J09	A5D10	A3D10	C2P06	A4D10
-Control bus bit 6	D2G12	A5D11	A3D11	C2P05	A4D11
-Control bus bit 7	D2G13	A5D12	A3D12	C2M06	A4D12
-Control bus parity bit	D2G05	A5D13	A3D13	C2P04	A4D13

```
.-------------------------------------------------------------------.
| DEDICATED CABLE WIRING CHECKS                                     |
|                                                                   |
| There is one dedicated cable for each disk drive.  The dedicated  |
| cable continuity for drive A goes from  the  A-A2C2  and  A-A2D2  |
| cards to the A-A2A4 cable, along the cable to E-A1A5 on the disk  |
| drive board.  The dedicated cable continuity for  drive  B  goes  |
| from the A-A2C2 and A-A2D2 cards to the A-A2Z1 cable,  and along  |
| the cable to E-B1A5 on the disk drive board.                      |
| The dedicated cable continuity for  drive  C  goes  from the      |
| A-A2C2 and A-A2D2 cards to the A-A2B4 cable,  and along the       |
| cable to E-C1A5 on the disk drive board.                          |
| The dedicated cable continuity for  drive  D  goes  from the      |
| A-A2C2 and A-A2D2 cards to the A-A2B5 cable,  and along the       |
| cable to E-D1A5 on the disk drive board.                          |
| The tables below can be used to check continuity.                 |
|                                                                   |
| The tables can also be used to check for a short to  ground.  If  |
| a short is found, all cards and cables  on  the  net  should  be  |
| removed and checked for the short.  The  A-A2, E-A1, E-B1, E-C1   |
| and E-D1 boards should also be checked if the short is not found  |
| on the cards and cables.                                          |
|                                                                   |
| Dedicated Cable Board Wiring For Drive A------------------------| |
|                          | Continuity on  | Continuity on E-A1  |
|   Net Name               | A-A2 Board     | Board               |
|--------------------------+----------------+---------------------|
|-Control sample           |  D2J02  A4B03  |  A5B03  C2G09        |
|-Interrupt                |  D2P02  A4B04  |  A5B04  C2D06        |
|-Sector                   |  C2J07  A4B05  |  A5B05  D2S10        |
|+Read data                |  C2P05  A4B08  |  A5B08  B2S07        |
|-Missing sector pulse     |  C2D12  A4B09  |  A5B09  D2G08        |
|-Write data               |  C2P02  A4B10  |  A5B10  B2U02        |
|+Interface degate         |  D2G03  A4B12  |  A5B12  C2B03        |
|+Write gate return        |  C2J02  A4D03  |  A5D03  B2J07        |
|-Data select              |  C2D07  A4D04  |  A5D04  C2J13        |
|-Fast sync                |  C2D05  A4D05  |  A5D05  B2S02        |
|-Reset error              |  D2P12  A4D06  |  A5D06  C2S10   D2P13 |
|-Index                    |  C2J05  A4D07  |  A5D07  D2S13        |
|-Read                     |  C2D02  A4D09  |  A5D09  C2J11        |
| Read clock               |  C2J12  A4D10  |  A5D10  B2U07        |
|-Write                    |  C2D10  A4D11  |  A5D11  C2G12        |
| Write clock              |  C2J10  A4D12  |  A5D12  B2U11        |
|                                                                   |
```

| Dedicated Cable Board Wiring For Drive B | | | Continuity on E-B1 | | |
Net Name	Continuity on A-A2 Board		Board		
-Control sample	D2G02	A6E04	A5B03	C2G09	
-Interrupt	D2D11	B6A04	A5B04	C2D06	
-Sector	C2J09	B6B04	A5B05	D2S10	
+Read data	C2P06	B6E04	A5B08	B2S07	
-Missing sector pulse	C2D13	C6A04	A5B09	D2G08	
-Write data	C2S02	C6B04	A5B10	B2U02	
+Interface degate	D2B07	C6D04	A5B12	C2B03	
+Write gate return	C2J04	A6E02	A5D03	B2J07	
-Data select	C2D09	B6A02	A5D04	C2J13	
-Fast sync	C2D06	B6B02	A5D05	B2S02	
-Reset error	D2P13	B6C02	A5D06	C2S10	D2P13
-Index	C2J06	B6D02	A5D07	D2S13	
-Read	C2D04	C6A02	A5D09	C2J11	
Read clock	C2J13	C6B02	A5D10	B2U07	
-Write	C2D11	C6C02	A5D11	C2G12	
Write clock	C2J11	C6D02	A5D12	B2U11	

| Dedicated Cable Board Wiring For Drive C | | | Continuity on E-C1 | | |
Net Name	Continuity on A-A2 Board		Board		
-Control sample	D2J04	B4B03	A5B03	C2G09	
-Interrupt	D2P05	B4B04	A5B04	C2D06	
-Sector	C2G07	B4B05	A5B05	D2S10	
+Read data	C2M04	B4B08	A5B08	B2S07	
-Missing sector pulse	C2B12	B4B09	A5B09	D2G08	
-Write data	C2M02	B4B10	A5B10	B2U02	
+Interface degate	D2P07	B4B12	A5B12	C2B03	
+Write gate return	C2G02	B4D03	A5D03	B2J07	
-Data select	C2B07	B4D04	A5D04	C2J13	
-Fast sync	C2B04	B4D05	A5D05	B2S02	
-Reset error	D2M05	B4D06	A5D06	C2S10	D2P13
-Index	C2G04	B4D07	A5D07	D2S13	
-Read	C2B02	B4D09	A5D09	C2J11	
Read clock	C2G12	B4D10	A5D10	B2U07	
-Write	C2B09	B4D11	A5D11	C2G12	
Write clock	C2G09	B4D12	A5D12	B2U11	

Dedicated Cable Board Wiring For Drive D				
Net Name	Continuity on A-A2 Board		Continuity on E-D1 Board	
-Control sample	D2G04	B5B03	A5B03	C2G09
-Interrupt	D2P06	B5B04	A5B04	C2D06
-Sector	C2G08	B5B05	A5B05	D2S10
+Read data	C2M05	B5B08	A5B08	B2S07
-Missing sector pulse	C2B13	B5B09	A5B09	D2G08
-Write data	C2M03	B5B10	A5B10	B2U02
+Interface degate	D2P09	B5B12	A5B12	C2B03
+Write gate return	C2G03	B5D03	A5D03	B2J07
-Data select	C2B08	B5D04	A5D04	C2J13
-Fast sync	C2B05	B5D05	A5D05	B2S02
-Reset error	D2M04	B5D06	A5D06	C2S10 D2P13
-Index	C2G05	B5D07	A5D07	D2S13
-Read	C2S12	B5D09	A5D09	C2J11
Read clock	C2G13	B5D10	A5D10	B2U07
-Write	C2B10	B5D11	A5D11	C2G12
Write clock	C2G10	B5D12	A5D12	B2U11

```
.------------------------------------------------------------------.
| DISK DRIVE WIRING CHECKS                                         |
|                                                                  |
| The following tables may be used to check for opens or shorts    |
| on the disk drive boards, E-A1 (drive A) and E-B1 (drive B).     |
| AND E-C1 (drive C) and E-D1 (drive D).                           |
'------------------------------------------------------------------'
```

Table A2

ID	Net			Net Name
01	A2B07	B2D11		Mars safety
02	A2B08	B2G03		Center taps
03	A2D02	B2P12		+ Data select gated
04	A2D04	B2D06		Actuator I/O line B
05	A2D05	B2D05		Actuator I/O line A
06	A2D06			- 4 Volts
07	A2D10	F2D06		+ Servo preamp output
08	A2D11	F2D05		- Servo preamp output
09	A2D12			Ground

Table A3

ID	Net			Net Name
01	A3B02	A4B02	C2M09	- Tag bus bit 0
02	A3B03	A4B03	C2M07	- Tag bus bit 1
03	A3B04	A4B04	C2P07	- Tag bus bit 2
04	A3B05	A4B05	C2M08	- Tag bus parity bit
06	A3B13	A4B13		Cable continuity
07	A3D02	A4D02		Cable continuity
08	A3D04	A4D04	C2M04	- Control bus bit 0
09	A3D05	A4D05	C2P02	- Control bus bit 1
10	A3D06	A4D06	C2M03	- Control bus bit 2
11	A3D07	A4D07	C2M02	- Control bus bit 3
12	A3D08			Ground
13	A3D09	A4D09	C2M05	- Control bus bit 4
14	A3D10	A4D10	C2P06	- Control bus bit 5
15	A3D11	A4D11	C2P05	- Control bus bit 6
16	A3D12	A4D12	C2M06	- Control bus bit 7
17	A3D13	A4D13	C2P04	- Control bus parity bit

```
TABLE A5 ---------------------------------------------------------.
| ID | Net                                  | Net Name             |
|----+--------------------------------------+----------------------|
| 01 | A5B02  A5D13                         |   Cable continuity    |
| 02 | A5B03  C2G09                         | - Control sample      |
| 03 | A5B07  A5B13 A5D02 A5D08             |   Ground              |
| 04 | A5B10  B2U02                         | - Write data          |
| 05 | A5B12  C2B03                         | + Interface degate    |
| 06 | A5B13  A5B07 A5D02 A5D08             |   Ground              |
| 07 | A5D04  C2J13                         | - Data select         |
| 08 | A5D05  B2S02                         | - Fast sync           |
| 09 | A5D06  C2S10 D2P13                   | - Reset error         |
| 10 | A5D09  C2J11                         | - Read                |
| 11 | A5D11  C2G12                         | - Write               |
 ----------------------------------------------------------------
```

```
Table B2 ---------------------------------------------------------.
| ID | Net                                  | Net Name             |
|----+--------------------------------------+----------------------|
| 01 | B2B02  E2B03                         |   Buffered analog data A |
| 02 | B2B03  E2D02                         |   Buffered analog data B |
| 03 | B2B12  A2D03                         |   Mars positive supply   |
| 04 | B2D07  A2D07                         |   Write current       |
| 05 | B2G10  C2M11                         | + Data unsafe         |
| 06 | B2J07  A5D03                         | + Write gate return   |
| 07 | B2M04  A2B03                         |   Head select A       |
| 08 | B2M07                                | - Chip select 5       |
| 09 | B2M08                                | - Chip select 4       |
| 10 | B2M09  A2B02                         | - Chip select 3       |
| 11 | B2M11  A2B05                         | - Chip select 2       |
| 12 | B2P04  A2B04                         |   Head select B       |
| 13 | B2P09  A2B06                         | - Chip select 1       |
| 14 | B2P11  E2G08                         |   Data servo 2F burst |
| 15 | B2S07  A5B08                         | + Read data           |
| 16 | B2U07  A5D10                         |   Read clock          |
| 17 | B2U11  A5D12                         |   Write clock         |
| 18 | B2U12  D2J05                         |   1F Write clock      |
 ----------------------------------------------------------------
```

```
Table C2 -------------------------------------------------------.
| ID | Net                                  | Net Name          |
|----+--------------------------------------+-------------------|
| 01 | C2B13  D2S04                         | - Shift           |
| 02 | C2D02  D2B02                         |   Desired velocity|
| 03 | C2D05  D2P11                         | - Reset calibration|
| 04 | C2D06  A5B04                         | - Interrupt       |
| 05 | C2D07  D2S09                         | - Tag 001 clock 2 |
| 06 | C2D09  B2M05 D2J04                   | - FH select       |
| 07 | C2G02  B2P06                         | - Head select 8   |
| 08 | C2G04  D2P12                         | - Go home bit     |
| 09 | C2G05  D2M08                         | - Calibration address|
| 10 | C2G11  B2J06                         | + Write block     |
| 11 | C2J05  D2U02                         | + Out             |
| 12 | C2J06  B2P10                         | - Head select 4   |
| 13 | C2J12  B2J12                         | + Read select     |
| 14 | C2M02  A3D07 A4D07                   | - Control bus bit 3|
| 15 | C2M03  A3D06 A4D06                   | - Control bus bit 2|
| 16 | C2M04  A3D04 A4D04                   | - Control bus bit 0|
| 17 | C2M05  A3D09 A4D09                   | - Control bus bit 4|
| 18 | C2M06  A3D12 A4D12                   | - Control bus bit 7|
| 19 | C2M12  D2P09                         | + Head 1 selected |
| 20 | C2P02  A3D05 A4D05                   | - Control bus bit 1|
| 21 | C2P04  A3D13 A4D13                   | - Control bus parity bit|
| 22 | C2P05  A3D11 A4D11                   | - Control bus bit 6|
| 23 | C2P06  A3D10 A4D10                   | - Control bus bit 5|
| 24 | C2P09  A3B12 A4B12                   | - Control bample received|
| 25 | C2P10  B2P05                         | - Head select 2   |
| 26 | C2P12  B2P07                         | - Head select 1   |
| 27 | C2S07  D2M12                         | - Set seek        |
| 28 | C2S09  E2J06 F2B03                   | + Even            |
| 29 | C2S11  B2M02                         | - Servo unsafe    |
| 30 | C2S12  A2B13                         | + Data select gated|
| 31 | C2U09  B2M03                         | + Common reset    |
| 32 | C2U12  B2G13                         | + Write select    |
--------------------------------------------------------------
```

```
Table D2 ---------------------------------------------------------------.
| ID | Net                                    |  Net Name               |
|----+----------------------------------------+-------------------------|
| 01 | D2B03  C2D11                           |  + Lin reg N of even track|
| 02 | D2B05  C2U06                           |  - Abs track address 1  |
| 03 | D2B08  C2B02                           |    Profile gain voltage |
| 04 | D2B10  C2D04                           |  + Quarter track        |
| 05 | D2B13  E2G07                           |  - Osc early            |
| 06 | D2D05  C2S06                           |  - Count up 2 tracks    |
| 07 | D2D06  C2J07  F2S13                     |  + Out direction        |
| 08 | D2D07  C2S05                           |  - Count down 2 tracks  |
| 09 | D2D09  C2U04                           |  + ROS D/A error        |
| 00 | D2D10  C2B04                           |  + Half track           |
| 11 | D2D11  F2S08                           |  + Seek                 |
| 12 | D2D13  E2D11                           |  + Head change gate     |
| 13 | D2G02  F2B09                           |  - Select demod Q2      |
| 14 | D2G03  F2B08                           |  - Select demod Q1      |
| 15 | D2G04  F2D09                           |  - Select demod N1      |
| 16 | D2G07  C2U10                           |  + Counter 5 in sync    |
| 17 | D2G08  A5B09                           |  - Missing sector pulse |
| 18 | D2G09  B2B04  C2J02                     |  - AGC freeze           |
| 19 | D2G10  B3A14(VC3-A)                     |    Brake coil drive     |
| 20 | D2G11  B5A14(VC5-A)                     |  + Brake applied to system|
| 21 | D2G13  F2B12                           |  + Normal error         |
| 22 | D2J02  E2J07                           |  - Osc late             |
| 23 | D2J06  F2B10                           |  - Select demod N2      |
| 24 | D2J09  E2G10                           |  + Shift reg clock      |
| 25 | D2J10  E2J04                           |  + Enable sample servo  |
| 26 | D2J13  C2P11  F2S07                     |  - Seek complete        |
| 27 | D2M02  C2S02                           |  + Missing servo sig latch|
| 28 | D2M03  C2J09                           |  + Missing clock err latch|
| 29 | D2M04  C2M10                           |    Demod pulsing        |
| 30 | D2M07  C2S08                           |  + Not ready            |
| 31 | D2M13  C2U13                           |  - Seek timeout         |
| 32 | D2P02  C2B10                           |    Missing clocks/2     |
| 33 | D2P04  C2U05                           |  + Illegal actuator move|
| 34 | D2P05  C2G08                           |  - Index and sector pulses|
| 35 | D2P07  C2B08  F2M02                     |  + Brake applied        |
| 36 | D2P08  E5A01(VC9-C)                     |    Ground (comp coil)   |
| 37 | D2P10  C2U07                           |  + Home                 |
| 38 | D2S05  F2P05                           |  - Select integrator    |
| 39 | D2S07  C2M13  F2P11                     |  - In drive             |
| 40 | D2S08  C2S03                           |  + Byte counter bit 16  |
```

```
--(Continued)----------------------------------------------------
--(Table D2 Continued)------------------------------------------.
| 41 | D2S10  A5B05          | - Sector                          |
| 42 | D2S13  A5D07          | - Index                           |
| 43 | D2U04  F2P07          | + Select integrator               |
| 44 | D2U06  C2G10          | + Servo protect                   |
| 45 | D2U07  C2U02 F2M13    | - Out drive                       |
| 46 | D2U10  C2B06          | - Go home or POFL                 |
| 47 | D2U11  C2D13          | + Behind home                     |
| 48 | D2U13  E2G04          | + Enable mark detect              |
-----------------------------------------------------------------
```

```
Table E2 --------------------------------------------------------.
| ID | Net                  | Net Name                           |
|----+----------------------+------------------------------------|
| 01 | E2B12  E2G05         | + Pos zero crossing                |
| 02 | E2B13  F2P06         |   Data PES                         |
| 03 | E2D09  C2G03         | - Outside AGC window               |
| 04 | E2G03  B2U06         | + Servo inhibit VCO                |
| 05 | E2G05  E2B12         | + Pos zero crossing                |
| 06 | E2G12  B2M10         |   2F write clock                   |
| 07 | E2J13  C2G13         | + Off data track                   |
-----------------------------------------------------------------
```

```
Table F2 --------------------------------------------------------------.
| ID | Net                                    | Net Name               |
|----+----------------------------------------+------------------------|
| 01 | F2B04  D2G05                           | + Servo clock SS       |
| 02 | F2B07  E2B04                           |   Volts/track current ref|
| 03 | F2D02  E2D13                           |   Sw SEN               |
| 04 | F2D11  D2B07                           | - Q/2 error            |
| 05 | F2D13  D2S12                           | + N/2 error            |
| 06 | F2G03  C2G07                           | + Coil current low     |
| 07 | F2G05                                  |   On track threshold cntl|
| 08 | F2G12  C2B12 E2G13                     | + On track             |
| 09 | F2G13  D2P06                           | - Missing servo clocks |
| 10 | F2J04  C2U11                           | - Bad AGC level        |
| 11 | F2J05  B3E14(VC3-C)                    |   Clock threshold      |
| 12 | F2J08  B4E01(VC3-D)                    |   Ground (DE adj res)  |
| 13 | F2J09  T2B10                           |   Hybrid PESN          |
| 14 | F2J10  E2D10 F2D10 F2P10 F2U10         | - 7 volts              |
| 15 | F2J11  F2G09                           |   Hybrid PES out       |
| 16 | F2M04  E4E14(VC9-B) E5E14(VC10-B)|     VCM start          |
| 17 | F2M05  E5E01(VC9-A) E6E01(VC10-A)|     VCM finish         |
| 18 | F2M08  D2U12                           | - N/2 error            |
| 19 | F2M12  E3E01(VC7-A)                    |   Base PNP out         |
| 20 | F2P02  C2S13 D2U09                     | - Power on delay       |
| 21 | F2S02  D2J07                           | + Q/2 error            |
| 22 | F2S04  A2B10 A2B12 A2D09 A2D13         | - SPA 8 volts          |
| 23 | F2S05  E3E14(VC8-B)                    |   CSR out              |
| 24 | F2S10  D2B09                           |   Coil current signal  |
| 25 | F2U02  E3A01(VC7-C)                    |   Base NPN out         |
| 26 | F2U04  E2E14(VC7-B)                    |   Base NPN in          |
| 27 | F2U05  E4E01(VC8-A)                    |   CSR in               |
| 28 | F2U07  E2A14(VC7-D)                    |   Base PNP in          |
 --------------------------------------------------------------------
```

```
Table VC (Crossover Connectors) -----------------------------------.
| ID | Net                                | Net Name                 |
|----+------------------------------------+--------------------------|
| 01 | B2A01(VC1-B)  F2G10                | - Power good             |
| 02 | B2A14(VC2-A)  B4A14 B5E01          |   Ground                 |
| 03 | B3E01(VC2-D)                       |   Ground                 |
| 04 | B4A01(VC3-B)  B6A01                |   Brake coil (2)         |
| 05 | B6A01(VC5-B)  B4A01                |   Brake coil/24V brake   |
| 06 | B6E01(VC5-D)  E6A01 F2S09          |   Gnd(+ 24 volts)        |
| 07 | E4A14(VC9-D)  D2D04                |   Compensation coil      |
 ------------------------------------------------------------------
```

```
Table V - (Voltage Nets) ------------------------------------------.
| ID | Net                                | Net Name                 |
|----+------------------------------------+--------------------------|
| 01 | B2E14(VC2-C)  B4E14                | + 5 volts                |
|    | F2D03 F2J03 F2P03 F2U03            |                          |
|    | E2D03 E2J03                        |                          |
|    | D2D03 D2J03 D2P03 D2U03            |                          |
|    | C2D03 C2J03 C2P03 C2U03            |                          |
|    | B2D03 B2J03 B2P03 B2U03            |                          |
|    | D1C11 A4D03                        |                          |
| 02 | B3A01(VC2-B)  B5A01                | - 4 volts                |
|    | F2B06 F2G06 F2M06 F2S06            |                          |
|    | E2B06 E2G06                        |                          |
|    | B2B06 B2G06 B2M06 B2S06            |                          |
|    | E1A13 A1D13 A2D06                  |                          |
| 03 | B1E14(VC1-C)                       | + 12 volts               |
|    | F2B11 F2G11 F2M11 F2S11 F2B05      |                          |
|    | E2B11 D2B11 C2B11 B2B11 F1A13      |                          |
| 04 | B2E01(VC1-D)                       | - 12 volts               |
|    | F2D12 F2J12 F2P12 F2U12            |                          |
|    | E2D12 D2D12 C2D12 B2D12            |                          |
|    | F1B11                              |                          |
| 05 | B5E14(VC5-C)  E5A14 D2S02 F2G02    | + 24 volts               |
 ------------------------------------------------------------------
```

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	B	10	085
1051	A	1	001
1052	A	1	001
1082	A	1	001
1085	A	1	001
1086	A	1	001
1090	C	5	031

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	0511	A
6	040	0511	B
9	081	0511	B
8	066	0511	B
12	098	0511	B
14	114	0511	B
8	069	0583	B
9	073	0583	C
5	029	1081	B
6	048	1081	B
14	115	1082	B
10	086	1084	A

001
(Entry Point A)

Note: Reset the thermal cut-out on the disk A drive motor (10-190) when leaving this MAP.
Check for the following on drive A (10-190):
1. The drive belt is broken or off the pulleys (10-040).
2. Loose parts in or around the drive belt guard (10-040).
3. Loose cable connections to drive motor or brake coil (10-080).

Are all the checks OK?
Y N

002
Repair or exchange as required.

MAP DESCRIPTION:
This MAP isolates failures that prevent the disk drive from rotating or cause the rotational speed to go out of tolerance.

START CONDITIONS:
The disk is not turning or is turning at the wrong speed.

LOGIC CARDS TESTED:
E-A1F2, E-A1D2 and E-A1E2, disk drive A enclosure, cables E-A1A3 and E-A1A5, and drive A motor, belt, and brake.

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2
A

SPEED FAILURE MAP

5340 SYSTEMS UNIT

003
-Set Power to 0 (operator panel).
Inspect the disk A drive belt for tension and general condition (10-190).

Is the drive belt in good condition and is tension correct?
Y N

    004
    Align the drive belt and check the tension (10-190).
    Exchange the drive belt if it is in poor condition (10-040).

005
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Disconnect +brake applied PDTB1 pin E12 (05-220, 05-360).
Wait 10 seconds, and then reconnect the pin.
Is the drive belt turning?
Y N

    006
    Jumper E-A1D2G10 (brake coil drive) to E-A1D2D08

    Remove the drive belt guard and turn the disk A drive motor pulley clockwise by hand to test for binds or brake on.

    Is the motor free to turn?
    Y N

        007
        Inspect the drive A brake assembly (10-190).
        Is the brake pad clear of the spindle pulley?
        Y N

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

```
9   4   4   3
B   C   D   E
```

E
2

F G H

MAP 1080-3

008
Measure for +24Vdc at the following locations on the drive A brake coil:
1. Brake coil terminal 1 to ground.
2. Brake coil terminal 2 to ground.

Are they both more than 20V?
Y N

> **009**
> **Is either one of them more than 20V?**
> Y N
>
> > **010**
> > Remove jumper.
> > Check for continuity between brake coil terminal 2 and VC3-B on E-A1 board (10-190).
> >
> > **Is the continuity OK?**
> > Y N
> >
> > > **011**
> > > Repair bad cable between VC3 and brake coil terminal 2.
> > > Reinstall the drive belt guard.
> >
> > **012**
> > Check for continuity between VC3-B and VC5-B on E-A1 board (10-190).
> >
> > **Is the continuity OK?**
> > Y N
> >
> > > **013**
> > > Reinstall the drive belt guard.
> > > Bad board
> > > E-A1 (10-170).

014
Check for continuity between PDTB1 pin 15 and VC5-B (05-220).

Is the continuity OK?
Y N

> **015**
> Reinstall the drive belt guard.
> Repair or exchange the drive A DC power cable.

016
Reinstall the drive belt guard.
Go To Map 0511, Entry Point A.

017
Remove jumper.
The problem is an open circuit brake coil.
Repair or exchange as required (10-110).

018
Remove jumper.
Jumper E-A1D2P07 (+brake applied) to E-A1D2P08.
Measure for +24Vdc between E-A1D2G10 (brake coil drive) and ground.

Does the CE multimeter read more than 20V?
Y N

> **019**
> Remove jumper.
> Check for continuity between VC3-A and brake coil terminal 1 (10-190).
>
> **Is the continuity OK?**
> Y N
>
> > **020**
> > Fix the bad cable between VC3-A and the brake coil terminal 1.
> > Reinstall the drive belt guard.

F G H

4 4
J K

C D J K
2 2 3 3

SPEED FAILURE MAP

5340 SYSTEMS UNIT

PAGE 4 OF 14

MAP 1080-4

021

Reinstall the drive belt guard.

Bad board

E-A1 (10-170).

022

Remove jumper.

Bad drive A brake magnet assembly (10-110).

023

Remove the drive belt on drive A by tilting the drive motor upward.

Turn the drive A disk spindle pulley clockwise by hand to test for binds.

Is the disk spindle free to turn?
Y N

024

Remove jumper.

Bad drive A disk enclosure (10-030).

025

Remove jumper.

Bad disk A drive motor (10-100).

026

-Set Power to 0 (operator panel).

Reinstall the drive belt guard.

Reset the thermal cut-out on disk drive A motor (10-190).

Jumper E-A1D2G11 (+brake applied to system) to E-A1D2J08.

-Set Power to 1 (operator panel).

Wait for 2 to 3 minutes and then observe the drive motor (see note).

Is the disk A drive motor turning?
Y N

027

Is this a one drive system?
Y N

7 6 5
L M N

CAUTION

Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

028
Jumper E-B1D2G10 (brake coil drive) to E-B1D2D08.

Remove the drive belt guard and turn the disk B drive motor pulley clockwise by hand to test for binds or brake on.
Is the motor free to turn?
Y N

> **029**
> Remove all jumpers.
> Reinstall the drive belt guard.
> **Go To Map 1081, Entry Point B.**

030
-Set Power to 0 (operator panel).
Reset the thermal cut-out on disk drive B motor (10-190).
Reinstall the drive belt guard.
Jumper E-B1D2G11 (+brake applied to system) to E-B1D2J08.
-Set Power to 1 (operator panel).
Observe the drive belts for drives A and B.
Are both disks turning?
Y N

> **031**
> **(Entry Point C)**
> Measure for +5Vdc on VC5-A on board E-A1 (10-190).
>
> **Is voltage less than 0.5V?**
> **Y N**
>
> > **032**
> > Remove all jumpers.
> > Bad board
> > E-A1 (10-170).

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

033
Measure for +5Vdc on VC5-A on board E-B1.

Is voltage less than 0.5V?
Y N

> **034**
> Remove all jumpers.
> Bad board
> E-B1 (10-170).

035
Measure for +5Vdc on PDTB1 pin E12 (05-220).

Is voltage less than 0.5V?
Y N

> **036**
> Remove all jumpers.
> Bad drive A DC power cable.

037
Measure for +5Vdc on PDTB1 pin E13 (05-220).

Is voltage less than 0.5V?
Y N

> **038**
> Remove all jumpers.
> Bad drive B DC power cable.

039
Measure for 220Vac at ACTB1 pins 15 and 16.

Is the voltage between 200 and 240Vac?
Y N

> **040**
> Remove all jumpers.
> 240Vac power missing.
> **Go To Map 0511, Entry Point B.**

R

041
Measure for 220Vac on drive motor ACTB for drive A.
Is the voltage between 200 and 240Vac?
Y N

> **042**
> Remove all jumpers.
> Bad drive A AC power cable.

043
Measure for 220Vac on drive motor ACTB for drive B.

Is the voltage between 200 and 240Vac?
Y N

> **044**
> Remove all jumpers.
> Bad AC power cable to drive B.

045
Is the disk A drive motor turning?
Y N

> **046**
> Remove all jumpers.
> Bad disk A drive motor (10-100).

047
Remove all jumpers.
Bad disk B drive motor (10-100).

048
Remove all jumpers.
Go To Map 1081, Entry Point B.

049
Go to Page 9, Step 074, Entry Point D.

SPEED FAILURE MAP

5340 SYSTEMS UNIT

PAGE 7 OF 14

050
Switch probe to Multi.
Probe E-A1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **051**
> Probe E-A1D2B13 (-osc early).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **052**
> > Probe E-A1D2J02 (-osc late).
> >
> > Up   Light: On or flashing
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **053**
> > > Remove all jumpers.
> > > Bad card
> > > E-A1D2
> > > ---or---
> > > E-A1E2 (10-160).
> >
> > **054**
> > Remove all jumpers.
> > Bad card
> > E-A1E2
> > ---or---
> > E-A1F2 (10-160)
> > ---or---
> > Bad drive A disk enclosure (10-030).

055
Remove card E-A1F2.
Measure the resistance between pins E-A1F2J05 (clock threshold) and E-A1F2D08.

Is the resistance less than 50 ohms?
Y N

> **056**
> Reinstall card E-A1F2.
> Jumper E-A1F2P02 (-power on delay) to
> E-A1F2P08.
> -Set Power to 1 (operator panel).
> Remove jumper on E-A1F2P02.
> Run the disk drive MAPs to drive A using MDI special (99-090), and return to this step after the MAPs stop.
> -Select drive A.
> -Enter 1040 001 for the starting MAP.
>
> **Did disk MAPs run without errors?**
> Y N
>
> > **057**
> > Remove all jumpers.
> > Bad card
> > E-A1D2 (10-160).
>
> **058**
> Remove all jumpers.
> Bad card
> E-A1F2 (10-160).

059
Remove all jumpers.
Bad drive A disk enclosure (10-030).

060

Run the disk drive MAPs to drive A using MDI special (99-090), and return to this step after the MAPs stop.
-Select drive A.
-Enter 1040 001 for the starting MAP.

Did disk MAPs run without errors?
Y N

  061
  -Set Power to 0 (operator panel).
  Remove all jumpers.
  Jumper E-A1F2P02 (-power on delay) to E-A1F2P08.

  -Set Power to 1 (operator panel).

  Disconnect +brake applied PDTB1 pin E12 (05-220, 05-360).
  Wait 10 seconds, and then reconnect the pin.
  Wait for 2 minutes and then observe the drive motor.

  Is the drive belt turning?
  Y N

    062
    Inspect the drive A brake assembly (10-190).

    Is the brake pad clear of the spindle pulley?
    Y N

      063
      Remove jumper.
      Bad card
      E-A1D2 (10-160).

064

Remove jumper.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive A and loop on TA166 for 5 minutes and observe if the result bytes are always X'0000'.

Are the result bytes always X'0000'?
Y N

  065
  Measure for 240Vac at disk drive A motor ACTB and observe for one minute (10-190).

  Is voltage always between 175V to 259V?
  Y N

    066
    Go To Map 0511, Entry Point B.

  067
  Check for a loose or wrong connection at the disk drive A motor ACTB.
  If connections are OK exchange the disk A drive motor (10-080, 10-100).

068
Suspect a bad drive motor thermal cut-out, or thermal cut-out was not reset after preceding failure (10-190).

069
Remove all jumpers.
Go To Map 0583, Entry Point B.

9
U V W

070
-Set Power to 0 (operator panel).
Remove all jumpers.
Probe E-A1F2P02 (-power on delay).

Power on and observe the CE probe.
Is the line down for approximately 15 to 20 seconds?
Y N

> **071**
> Bad card
> E-A1F2 (10-160).

072
Bad card
E-A1D2 (10-160).

073
Go To Map 0583, Entry Point C.

074
(Entry Point D)
Measure for +5Vdc on VC5-A on board E-A1.

Is voltage less than 0.5V?
Y N

> **075**
> Remove all jumpers.
> Bad board
> E-A1 (10-170).

076
Measure for +5Vdc on PDTB1 pin E12 (05-220, 05-360).

Is voltage less than 0.5V?
Y N

> **077**
> Remove all jumpers.
> Bad drive A DC power cable.

078
Measure for +5Vdc on PDTB1 pin E13 (05-220, 05-360).

Is voltage less than 0.5V?
Y N

> **079**
> Remove all jumpers.
> Bad jumper between E12 and E13 (05-220, 05-360).

080
Measure for 220Vac at ACTB1 pin 15 and 16.

Is the voltage between 200 and 240Vac?
Y N

> **081**
> Remove all jumpers.
> 240Vac power missing.
> **Go To Map 0511, Entry Point B.**

1
0
X

05JAN81   PN 8265711

EC 835086   PEC 835000

MAP 1080-9

082
Measure for 220Vac on drive motor ACTB for drive A.
Is the voltage between 200 and 240Vac?
Y N

> **083**
> Remove all jumpers.
> Bad AC power cable to drive A.

084
Remove all jumpers.
Bad disk A drive motor (10-100).

085
(Entry Point B)

Measure for +24Vdc:
E-A1F2G02 (pos)
E-A1F2J08 (neg)
Does the CE multimeter read between 21.6V and 26.4V?
Y N

> **086**
> **Go To Map 1084, Entry Point A.**

087
Probe E-A1A5D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **088**
> Probe E-A1D2S13 (-index).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **089**
> > Probe E-A1D2P02 (missing clocks/2).
> >
> > Up   Light: On or flashing
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N

```
1   1   1   1
1   1   A   A
Y   Z   A   A
            B
```

```
Y  Z  A  A
1  1  A  B
0  0  A  1
      1  0
      0
```

090
Bad card
E-A1D2
---or---
E-A1F2 (10-160).
---or---
E-A1B2

091
Bad card
E-A1D2 (10-160).

092
Bad board
E-A1 (10-170).

093
-Set Power to 0 (operator panel).

Check continuity from E-A1A5D07 to A-A2A4D07
(-index).

Is the continuity OK?
Y N

094
Bad cable E-A1A5 (10-150).

095
Check condition and tension of drive belt (10-190).

Is the belt OK?
Y N

096
Repair as necessary (10-040).

```
1
2
A
C
```

097

−Set Power to 1 (operator panel).

Measure for 240Vac on the disk A drive motor assembly ACTB terminals.

Is the voltage between 175V and 259V?
Y N

    098
    Go To Map 0511, Entry Point B.

099
Is an oscilloscope available?
Y N

    100
    −Set Power to 0 (operator panel).
    −Set Power to 1 (operator panel).
    Wait 30 seconds, and then press Reset (CE panel).
    Disconnect +brake applied net at PDTB1 pin E12 (05-220).
    Wait 10 seconds, and then reconnect the pin.
    Is the drive belt turning?
    Y N

        101
        Jumper E-A1D2G10 (brake coil drive) to E-A1D2D08

        Remove the drive belt guard and turn the disk A drive motor pulley clockwise by hand to test for binds or brake on.

        Is the motor free to turn?
        Y N

            102
            Inspect the drive A brake assembly (10-190).
            Is the brake pad clear of the spindle pulley?
            Y N

CAUTION
Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

```
1   1   1   1   1
4   4   3   3   3
A   A   A   A   A
D   E   F   G   H
```

103
Remove jumper.
Drive A brake needs adjustment (10-190)
---or---
Bad drive A brake magnet assembly (10-110).

104
Remove the drive belt on drive A by tilting the drive motor upward.
Turn the drive A disk spindle pulley clockwise by hand to test for binds.
Is the disk spindle free to turn?
Y N

> **105**
> Remove jumper.
> Bad drive A disk enclosure (10-030).

106
Remove jumper.
Bad disk A drive motor (10-100).

107
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Jumper E-A1D2G11 (+brake applied to system) to E-A1D2J08.
-Set Power to 1 (operator panel).
Wait for 30 seconds.
Probe E-A1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> 14AJ   AK

108
Probe E-A1D2B13 (-osc early).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **109**
> Probe E-A1D2J02 (-osc late).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
>> **110**
>> Remove all jumpers.
>> Bad card
>> E-A1D2
>> ---or---
>> E-A1E2 (10-160).
>
> **111**
> Remove all jumpers.
> Bad card
> E-A1E2 (10-160).

112
Remove all jumpers.
Bad card
E-A1D2
---or---
E-A1F2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

```
A   A   A
D   E   J
1   1   1
2   2   3
```

113

Remove all jumpers.

Bad card

E-A1F2

---or---

E-A1D2 (10-160).

---or---

A-A2C2

---or---

Bad disk A drive motor (10-100).

114

Go To Map 0511, Entry Point B.

115

Go To Map 1082, Entry Point B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1011	A	1	001
1016	B	4	030
1040	A	1	001
1040	B	4	030
1041	A	1	001
1044	A	1	001
1051	A	1	001
1080	B	4	030

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1084	A

001
(Entry Point A)
Measure for the following voltages:

Voltage	Range	Pin
+5Vdc	4.4V to 5.6V	E-A1D2D03
+24Vdc	21.6V to 26.4V	E-A1F2G02
-4Vdc	3.5V to 4.5V	E-A1F2B06

MAP DESCRIPTION:
This MAP isolates failures causing no communication between the disk and the common adapter.

START CONDITIONS:
The disk does not respond to common adapter commands.

LOGIC CARDS TESTED:
E-A1C2, E-A1F2, E-A1D2, cables E-A1A4 and E-A1A5, and the system power supply.

NOTE: An open circuit on nets A5-01, VC-01, and V-01 could cause you to enter this MAP. See netlist tables, MAP 1077.

Are the voltages within range?
Y N

002
Go To Map 1084, Entry Point A.

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2
A

A
1
|

003
Probe E-A1F2G10 (-power good).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   004
   Remove card E-A1F2.

   -Set Power to 1 (operator panel).

   Probe E-A1F2G10 (-power good).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      005
      Measure for +5Vdc on PDTB1 pin E11 (05-220).
      Does the CE multimeter read less than 0.5V?
      Y N

         006
         Check for continuity of -power good. See
         5340 Vol. D FSL YA080.
         Is the continuity OK?
         Y N

            007
            Exchange the bad card, cable, or board
            found in the preceding step (10-150,
            10-160, 10-170).

         008
         Bad card
         C-A1B2.

      009
      Bad drive A DC power cable.

B C

B C   MAP 1081-2

010
Reset the thermal cut-out on the disk drive A motor
(10-190).
Bad card
E-A1F2 (10-160).

011
Probe E-A1F2P09 (-power good delayed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   012
   Reset the thermal cut-out on the disk drive A motor
   (10-190).
   Bad card
   E-A1F2 (10-160).

013
Probe E-A1F2P02 (-power on delay).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   014
   Bad card
   E-A1F2 (10-160).

015
Probe E-A1C2B03 (+interface degate).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

13JUL79   PN 8265712
EC 834824   PEC 833180
3 3
D E   MAP 1081-2

016
Check for continuity of the drive A +interface degate line.   See MAP 1077, Dedicated Cable Wiring Checks
Was an open found?
Y N

> **017**
> Bad card
> A-A2D2.

018
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

019
Check for continuity of the drive A -control sample line and the -control sample received line. See MAP 1077, Dedicated Cable Wiring Checks and Bus Cable Wiring Checks.
Was an open found?
Y N

> **020**
> Using the TU Select option (99-064), select drive A and loop on TA16A.
> Probe E-A1A5B03 (-control sample).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **021**
> > Probe E-A1A5B03 (-control sample).
> >
> > Up   Light: Off
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N

F G H J

022
Bad card
A-A2D2.

023
Bad card A-A2D2
---or---
E-A1C2 (10-160).

024
Probe A-A2A5B12 (-control sample received).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **025**
> Probe E-A1A3B12 (-control sample received).
>
> Up   Light: Off
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **026**
> > Bad card
> > E-A1C2 (10-160).
>
> **027**
> Bad terminator card, E-A1A4 or E-B1A4 (10-140).

028
Bad card
A-A2D2.

029
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

030
(Entry Point B)
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Run the disk Drive MAPs to drive B using MDI special
(99-090):
-Select drive B.
-Enter 1040 001 for the starting MAP.
Follow the directions given in the MDI MAPs.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1063	A	1	001
1080	B	5	030

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	033	1080	A
5	038	1080	A
6	043	1080	A
6	046	1080	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (10X range) between the following points:
1. E-A1F2M12 (pos) and E-A1F2G02 (neg).
2. E-A1F2U07 (pos) and E-A1F2G02 (neg).
3. E-A1F2U08 (pos) and E-A1F2U04 (neg).
4. E-A1F2U08 (pos) and E-A1F2U02 (neg).

Are all the resistances in the range from 160 ohms to 260 ohms?
Y N

  002
  Bad card
  Actuator coil driver card on drive A (10-160).

003
-Set Power to 1 (operator panel). Wait 30 seconds, and
 then press Reset (CE panel).
Measure for +5Vdc:
E-A1E2D02 (pos) to E-A1E2D08 (neg)
E-A1E2B03 (pos) to E-A1E2D08 (neg).
Are both the voltages more than 3.0V?
Y N

MAP DESCRIPTION:
This MAP isolates data unsafe problems caused by sample servo failures.

START CONDITIONS:
This MAP is entered when an oscilloscope is needed for FRU isolation.

LOGIC CARDS TESTED:
E-A1D2, actuator driver card, E-A1B2, E-A1E2, AND E-A1C2.

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2 2
A B

004
Bad card
E-A1E2 (10-160).

005
If an oscilloscope is available, further FRU isolation is possible.
Is an oscilloscope available?
Y N

> **006**
> Bad card
> E-A1E2
> ---or---
> E-A1B2
> ---or---
> E-A1D2
> ---or---
> E-A1C2
> ---or---
> E-A1F2
> ---or---
> actuator coil driver card on drive A (10-160).
> ---or---
> Bad drive A disk enclosure (10-030).

007
Using the TU Select option, select Drive A and execute TA169.

Use 1X probes.
Set the oscilloscope channel 1 probe on E-A1D2J09 (+shift reg clock).
Set the oscilloscope channel 2 probe on E-A1D2J10 (+enable sample servo).
Set the oscilloscope Ext. Trig probe on E-A1D2S10 (-sector).
Set oscilloscope controls as shown in table.

(Step 007 continues)

(Step 007 continued)

Horiz Display	A
Mag	Off
A Sweep Length	Full
A Time Base	5us/div
Mode	Alt
Trigger Source	Ext
Ch 1 Volts/div	2v/div
Ch 2 Volts/div	2v/div
A Sweep Mode	Normal Trig
A Trig Slope	-
A Trig Coupling	AC
Trig	Normal
A Trig Level	0
A Trig HF Stab	0
Invert	In

Set the Input Chan 1 switch to the Gnd position and adjust the position of the trace to the center line of the screen.
Set the Input Chan 1 switch to the DC position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the DC position.
Adjust the A triggering level to display trace.
Adjust the Horizontal position to start the trace at the left-hand line.
Is the display the same as in 10-400?
Y N

> **008**
> Bad card
> E-A1D2 (10-160).

009
Move the Chan 2 probe to E-A1D2U13 (+enable mark detect)
Set the Mode switch to the Chan 2 position.
Is the display the same as in 10-410?
Y N

  010
  Bad card
  E-A1D2 (10-160).

011
Move the Chan 1 probe to E-A1E2B03 (buffered analog data A).
Set the Chan 1 V/Div to the 20mV position.
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the AC position.
Compare servo gain field in 10-430 with display.

Is the servo gain field correct?
Y N

  012
  Bad card
  E-A1B2 (10-160)
  ---or---
  E-A1F2
  ---or---
  Bad drive A disk enclosure (10-030).

013
Move the Chan 2 probe to E-A1E2D02 (buffered analog data B).
Set the Chan 2 V/Div to the 20mV position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the AC position.
Set the Mode switch to the Chan 2 position.
Pull the Invert switch.
Compare servo gain field in 10-430 with display.

(Step 013 continues)

(Step 013 continued)
Is the servo gain field correct?
Y N

  014
  Bad card
  E-A1B2 (10-160)
  ---or---
  Bad drive A disk enclosure (10-030).

015
Move the Chan 1 probe to E-A1E2G03 (+servo inhibit VCO).
Set the Mode switch to the Chan 1 position.
Set the Chan 1 V/Div switch to 1V.
Is the display the same as in 10-420?
Y N

  016
  Is the display the same as in 10-460?
  Y N

    017
    Move the Chan 1 probe to E-A1E2J05 (-counter run).

    Is the display the same as in 10-470?
    Y N

      018
      Bad card
      E-A1E2 (10-160).

    019
    Bad card
    E-A1B2 (10-160)

  020
  Bad card
  E-A1E2 (10-160).

021

Move the Chan 1 probe to E-A1E2G08 (data servo 2F burst).
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the DC position.
Set the Chan 1 V/Div switch to 1V.

Is the display the same as in 10-440?
Y N

> **022**
> **Is display a valid MST1 level (-0.8V to -1.8V)?**
> Y N
>
> > **023**
> > Bad card
> > E-A1E2 (10-160).
>
> **024**
> Bad card
> E-A1B2 (10-160)

025

Move the Chan 1 probe to E-A1E2B13 (data PES).
Set A time base to 2ms.
Move the Ext. Trig. probe to D2S13 (-index).
Adjust the A triggering level to display trace.

Does display compare with 10-450?
Y N

> **026**
> Bad card
> E-A1E2 (10-160).

027
Probe
E-A1E2J13 (+off data track).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **028**
> Bad card
> E-A1E2 (10-160).
> ---or---
> actuator coil driver card on drive A (10-160).

029
Bad card
E-A1C2 (10-160).
---or---
actuator coil driver card on drive A (10-160).

030
(Entry Point B)

This MAP checks the disk speed by measuring the time between index pulses.
Index pulses should be 18.6 to 19.8 milliseconds apart.

Place the oscilloscope probe on E-A1D2S13 (-index).
Set oscilloscope controls as shown in table.

```
.----------------------------------.
| B Sweep Mode    | B starts after |
|                 |   time delay   |
| Horiz Display   | A              |
| Mag             | Off            |
| A Sweep Length  | Full           |
| A Time Base     | 2ms/div        |
| Mode            | Ch 1           |
| Trigger         | Ch 1 only      |
| Ch 1 Volts/div  | 2 (X1 probe)   |
| A Sweep Mode    | Auto Trig      |
| A Trig Slope    | -              |
| A Trig Coupling | AC             |
| Trig Source     | Int            |
| A Trig Level    | 0              |
| A Trig HF Stab  | 0              |
----------------------------------
```

Set the Input Chan 1 switch to the Gnd position and adjust the position of the trace to the center line of the screen.
Set the Input Chan 1 switch to the DC position.
Adjust the Horiz position until the first pulse is on the left division.
Is the second pulse between 18.6ms and 19.8ms after first pulse?
Y N

    031
    Has this machine just been installed?
    Y N

6
F G H

032
Is the pulse early?
Y N

    033
    Disk speed too slow.
    Go To Map 1080, Entry Point A.

034
Bad card
E-A1D2 (10-160).

035
Check for correct motor rating (voltage and hertz) on drive A.
Are both correct?
Y N

    036
    Exchange the incorrect part and run the disk MAPs again to verify that the disk is working correctly.

037
Is the pulse early?
Y N

    038
    Disk speed too slow.
    Go To Map 1080, Entry Point A.

039
Bad card
E-A1D2 (10-160).

OSCILLOSCOPE MAP

MAP 1082-6

5340 SYSTEMS UNIT

PAGE 6 OF 6

040
Switch the B time base to 0.2ms.
Switch the Horiz display to A Inten during B.
Adjust the Delay time multiplier until the right-hand division of the trace is intensified.
Switch the Horiz display to delayed sweep (B).
Is the pulse between 0.6ms and 1.8ms from start of trace?
Y N

> **041**
> **Is the pulse after 1.8ms from start of trace?**
> Y N
>
> > **042**
> > Bad card
> > E-A1D2 (10-160).
>
> **043**
> Disk speed too slow.
> **Go To Map 1080, Entry Point A.**

044
Does the pulse timing change?
Y N

> **045**
> Bad card
> A-A2C2
> ---or---
> A-A2D2
> ---or---
> Bad top card connector

046
Disk speed is changing.
Go To Map 1080, Entry Point A.

5340 SYSTEMS UNIT

PAGE 1 OF 13

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1003	A	1	001
1040	A	1	001
1041	A	1	001
1051	A	1	001
1088	A	1	001
1098	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
12	115	1034	A

001
(Entry Point A)
Probe A-A2A4B03 (-control sample).

```
Up   Light: Off
Down Light: On
```

MAP DESCRIPTION:
This MAP isolates errors on the disk drive bus cable interface.

START CONDITIONS:
An error was detected on the bus cable interface.

LOGIC CARDS TESTED:
A-A2D2, A-A2C2, and disk drive cards C2, D2, and F2.

Are the lights correct?
Y N

  002
  Probe A-A2A6E04 (-control sample) (see FSL AB300).

```
  Up   Light: Off
  Down Light: On
```

  Are the lights correct?
  Y N

```
1 1
2 2 2
A B C
```

C
1

H

MAP 1083-2

003
Probe A-A2B4B03 (-control sample).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **004**
> Probe A-A2B5B03 (-control sample).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Probe A-A2A5B12 (-control sample received).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **006**
> > > Probe the following lines on board E-A1 (single drive system) or E-B1 (dual drive system), or E-C1 (three drive system), or E-D1 (four drive system):
> > >   A4B02 (-tag bit 0)
> > >   A4B03 (-tag bit 1)
> > >   A4B04 (-tag bit 2)
> > >   A4B05 (-tag parity bit)
> > >
> > > Up   Light: On or flashing
> > > Down Light: On or flashing
> > >
> > > **Are the lights correct?**
> > > Y N

007
Check for an open or a short to ground on these lines.
See MAP 1077, Bus Cable Wiring Checks.
Was an open or a short found?
Y N

> **008**
> Remove card A-A2D2 and reinstall all the other cards and cables.
> -Set Power to 1 (operator panel).
> Probe the following lines:
>   E-A1A4B02 (-tag bit 0)
>   E-A1A4B03 (-tag bit 1)
>   E-A1A4B04 (-tag bit 2)
>   E-A1A4B05 (-tag parity bit)
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **009**
> > Reinstall all the cards and cables.
> > Bad terminator card
> > E-A1A4 (one drive system)
> > ---or---
> > E-B1A4 (two drive system)
> > ---or---
> > E-C1A4 (three drive system)
> > ---or---
> > E-D1A4 (four drive system) (10-140).

010
Bad card
A-A2C2
---or---
A-A2D2
---or---
Bad top card connector

011
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

```
1 1 1
2 1 0 3
D E F G H
```

012
Probe A-A2A4B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    013
    Probe A-A2A4B04 (-interrupt).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

        014
        Check for short to ground on -interrupt (drive A).
        See MAP 1077, Dedicated Cable Wiring Checks.
        Was a short found?
        Y N

            015
            Reinstall all the cards and cables.
            Bad card
            E-A1C2 (10-160).

        016
        Exchange the bad card, cable, or board found in
        the preceding step (10-150, 10-160, 10-170).

    017
    Probe E-A1D2P07 (+brake applied).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

J K L

J K L   MAP 1083-3

    018
    Bad card
    E-A1D2 (10-160).

019
Bad card
E-A1C2 (10-160).

020
Is this a one drive system?
Y N

    021
    Probe A-A2B6A04 (-interrupt) (see FSL AB300).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        022
        Probe A-A2B6A04 (-interrupt).

        Up   Light: On or flashing
        Down Light: On or flashing

        Are the lights correct?
        Y N

            023
            Check for short to ground on -interrupt (drive
            B). See MAP 1077, Dedicated Cable Wiring
            Checks.
            Was a short found?
            Y N

                024
                Reinstall all the cards and cables.
                Bad card
                E-B1C2 (10-160).

5 4 4 4
M N P Q

N P Q
3 3 3

INTERFACE ERROR MAP

5340 SYSTEMS UNIT

PAGE 4 OF 13

S T U   MAP 1083-4

025
Reinstall all the cards and cables.
Exchange the bad card, cable, or board found in
the preceding step (10-150, 10-160, 10-170).

026
Probe E-B1D2P07 (+brake applied).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  027
  Bad card
  E-B1D2 (10-160).

028
Bad card
E-B1C2 (10-160).

029
Is this a two drive system?
Y N

  030
  Probe A-A2B4B04 (-interrupt).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    031
    Probe A-A2B4B04 (-interrupt).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

5
R S T U

032
Check for short to ground on -interrupt (drive C).
See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

  033
  Reinstall all the cards and cables.
  Bad card
  E-C1C2 (10-160).

034
Reinstall all the cards and cables.
Exchange the bad card, cable, or board found in
the preceding step (10-150, 10-160, 10-170).

035
Probe E-C1D2P07 (+brake applied).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  036
  Bad card
  E-C1D2 (10-160).

037
Bad card
E-C1C2 (10-160).

038
Is this a three drive system?
Y N

5 5
V W

W
4

INTERFACE ERROR MAP

5340 SYSTEMS UNIT

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M R V X Y Z
3 4 4

MAP 1083-5

039
Probe A-A2B5B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  040
  Probe A-A2B5B04 (-interrupt).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    041
    Check for short to ground on -interrupt (drive D).
    See MAP 1077, Dedicated Cable Wiring Checks.
    Was a short found?
    Y N

      042
      Reinstall all the cards and cables.
      Bad card
      E-D1C2 (10-160).

    043
    Reinstall all the cards and cables.
    Exchange the bad card, cable, or board found in
    the preceding step (10-150, 10-160, 10-170).

  044
  Probe E-D1D2P07 (+brake applied).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

            045
            Bad card
            E-D1D2 (10-160).

          046
          Bad card
          E-D1C2 (10-160).

        047
        Go to Step 050, Entry Point D.

      048
      Go to Step 050, Entry Point D.

    049
    Go to Step 050, Entry Point D.

050
(Entry Point D)
Using the TU Select option (99-065), select drive A and
loop on TA172.
Probe control bus bits 0-7 and parity on board E-A1
(single drive system), or E-B1 (two drive system), or
E-C1 (three drive system) or E-D1 (four drive system):
    A4D04 (-control bus bit 0)
    A4D05 (-control bus bit 1)
    A4D06 (-control bus bit 2)
    A4D07 (-control bus bit 3)
    A4D09 (-control bus bit 4)
    A4D10 (-control bus bit 5)
    A4D11 (-control bus bit 6)
    A4D12 (-control bus bit 7)
    A4D13 (-control bus parity bit)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

X Y Z

8 6
A A
A A
A B

051
Remove cables A-A2A5, A-A2A4, A-A2Z1, A-A2B4,
AND A-A2B5 (iF INSTALLED).
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive A and
loop on TA172.
Probe control bus bits 0-7 and parity on board A-A2:
```
    A5D04 (-control bus bit 0)
    A5D05 (-control bus bit 1)
    A5D06 (-control bus bit 2)
    A5D07 (-control bus bit 3)
    A5D09 (-control bus bit 4)
    A5D10 (-control bus bit 5)
    A5D11 (-control bus bit 6)
    A5D12 (-control bus bit 7)
    A5D13 (-control bus parity bit)
```

```
Up   Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?
Y N

    052
    Reinstall all cables.
    Check for an open or a short to ground on the
    control bus lines. See MAP 1077, Bus Cable Wiring
    Checks.
    Was an open or a short found?
    Y N

        053
        Bad card
        A-A2D2.

    054
    Bad board
    A-A2.

A
C

055
Reinstall all cables.
Check for an open or a short to ground on the control
bus lines. See MAP 1077, Bus Cable Wiring Checks.
Was an open or a short found?
Y N

    056
    Remove card E-A1C2.
    -Set Power to 1 (operator panel).
    Using the TU Select option (99-065), select drive A
    and loop on TA172.
    Probe control bus bits 0-7 and parity on board A-A2:
```
    A5D04 (-control bus bit 0)
    A5D05 (-control bus bit 1)
    A5D06 (-control bus bit 2)
    A5D07 (-control bus bit 3)
    A5D09 (-control bus bit 4)
    A5D10 (-control bus bit 5)
    A5D11 (-control bus bit 6)
    A5D12 (-control bus bit 7)
    A5D13 (-control bus parity bit)
```

```
Up   Light: On or flashing
Down Light: On or flashing
```

    Are the lights correct?
    Y N

        057
        Reinstall card E-A1C2.
        Is this a one drive system?
        Y N

```
8 8 8 7
A A A A
D E F G
```

058
Remove card E-B1C2.
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive A and
loop on TA172.
Probe control bus bits 0-7 and parity on board A-A2:

```
A5D04 (-control bus bit 0)
A5D05 (-control bus bit 1)
A5D06 (-control bus bit 2)
A5D07 (-control bus bit 3)
A5D09 (-control bus bit 4)
A5D10 (-control bus bit 5)
A5D11 (-control bus bit 6)
A5D12 (-control bus bit 7)
A5D13 (-control bus parity bit)
```

```
Up    Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?
Y N

> **059**
> Reinstall card E-B1C2.
> **Is this a two drive system?**
> Y N
>
> > **060**
> > Remove card E-C1C2.
> > -Set Power to 1 (operator panel).
> > Using the TU Select option (99-065), select drive
> > A and loop on TA172.
> > Probe control bus bits 0-7 and parity on board
> > A-A2:
> >
> > ```
> > A5D04 (-control bus bit 0)
> > A5D05 (-control bus bit 1)
> > A5D06 (-control bus bit 2)
> > A5D07 (-control bus bit 3)
> > A5D09 (-control bus bit 4)
> > A5D10 (-control bus bit 5)
> > A5D11 (-control bus bit 6)
> > A5D12 (-control bus bit 7)
> > A5D13 (-control bus parity bit)
> > ```
> >
> > (Step 060 continues)

8   8
A   A
H   J

(Step 060 continued)
```
Up    Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?
Y N

> **061**
> Reinstall card E-C1C2.
> **Is this a three drive system?**
> Y N
>
> > **062**
> > Remove card E-D1C2.
> > -Set Power to 1 (operator panel).
> > Using the TU Select option (99-065), select drive
> > A and loop on TA172.
> > Probe control bus bits 0-7 and parity on board
> > A-A2:
> >
> > ```
> > A5D04 (-control bus bit 0)
> > A5D05 (-control bus bit 1)
> > A5D06 (-control bus bit 2)
> > A5D07 (-control bus bit 3)
> > A5D09 (-control bus bit 4)
> > A5D10 (-control bus bit 5)
> > A5D11 (-control bus bit 6)
> > A5D12 (-control bus bit 7)
> > A5D13 (-control bus parity bit)
> > ```
> >
> > ```
> > Up    Light: On or flashing
> > Down Light: On or flashing
> > ```
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **063**
> > > Reinstall card E-D1C2.
> > > Bad terminator card, E-D1A4 (10-140).
> >
> > **064**
> > Bad card
> > E-D1C2 (10-160).

065
Bad terminator card, E-C1A4 (10-140).

8
A
K

066

Bad card

E-C1C2 (10-160).

067

Bad terminator card, E-B1A4 (10-140).

068

Bad card

E-B1C2 (10-160).

069

Bad terminator card, E-A1A4 (10-140).

070

Bad card

E-A1C2 (10-160).

071

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

072

Using the TU Select option (99-065), select drive A and loop on TA173.

Probe control bus bits 0-7 and parity on board A-A2:

```
A5D04 (-control bus bit 0)
A5D05 (-control bus bit 1)
A5D06 (-control bus bit 2)
A5D07 (-control bus bit 3)
A5D09 (-control bus bit 4)
A5D10 (-control bus bit 5)
A5D11 (-control bus bit 6)
A5D12 (-control bus bit 7)
A5D13 (-control bus parity bit)
```

```
Up   Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?

Y N

073

Remove cable A-A2A5.

-Set Power to 1 (operator panel).

Using the TU Select option (99-065), select drive A and loop on TA173.

Probe control bus bits 0-7 and parity on board A-A2:

```
A5D04 (-control bus bit 0)
A5D05 (-control bus bit 1)
A5D06 (-control bus bit 2)
A5D07 (-control bus bit 3)
A5D09 (-control bus bit 4)
A5D10 (-control bus bit 5)
A5D11 (-control bus bit 6)
A5D12 (-control bus bit 7)
A5D13 (-control bus parity bit)
```

```
Up   Light: On
Down Light: Off
```

Are the lights correct?

Y N

9 9 9
A A A
L M N

A A A   **INTERFACE ERROR MAP**   A A   MAP 1083-9
L M N   Q R
8 8 8   **5340 SYSTEMS UNIT**

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074
Bad card
A-A2D2.

075
Bad card
E-A1C2 (10-160).

076
Is this a one drive system?
Y N

> **077**
> Using the TU Select option (99-065), select Drive B,
> and run TA172. Then loop on TA173.
> Probe control bus bits 0-7 and parity on board A-A2:
> A5D04 (-control bus bit 0)
> A5D05 (-control bus bit 1)
> A5D06 (-control bus bit 2)
> A5D07 (-control bus bit 3)
> A5D09 (-control bus bit 4)
> A5D10 (-control bus bit 5)
> A5D11 (-control bus bit 6)
> A5D12 (-control bus bit 7)
> A5D13 (-control bus parity bit)
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **078**
> > Check for continuity of the control bus lines on
> > board E-B1. See MAP 1077, Bus Cable Wiring
> > Checks.
> > **Was an open found?**
> > Y N
> >
> > > **079**
> > > Bad card
> > > E-B1C2 (10-160).

080
Bad board
E-B1 (10-170).

081
Is this a two drive system?
Y N

> **082**
> Using the TU Select option (99-065), select Drive C,
> and run TA172. Then loop on TA173.
> Probe control bus bits 0-7 and parity on board A-A2:
> A5D04 (-control bus bit 0)
> A5D05 (-control bus bit 1)
> A5D06 (-control bus bit 2)
> A5D07 (-control bus bit 3)
> A5D09 (-control bus bit 4)
> A5D10 (-control bus bit 5)
> A5D11 (-control bus bit 6)
> A5D12 (-control bus bit 7)
> A5D13 (-control bus parity bit)
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **083**
> > Check for continuity of the control bus lines on
> > board E-C1. See MAP 1077, Bus Cable Wiring
> > Checks.
> > **Was an open found?**
> > Y N
> >
> > > **084**
> > > Bad card
> > > E-C1C2 (10-160).
> >
> > **085**
> > Bad board
> > E-C1 (10-170).

1   1 1
0   0 0
A A A   A A
P Q R   S T

A
T
9

INTERFACE ERROR MAP

5340 SYSTEMS UNIT

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F A A A A
2 P S U V
9 9

MAP 1083-10

086
Is this a three drive system?
Y N

087
Using the TU Select option (99-065), select Drive D,
and run TA172. Then loop on TA173.
Probe control bus bits 0-7 and parity on board A-A2:
    A5D04 (-control bus bit 0)
    A5D05 (-control bus bit 1)
    A5D06 (-control bus bit 2)
    A5D07 (-control bus bit 3)
    A5D09 (-control bus bit 4)
    A5D10 (-control bus bit 5)
    A5D11 (-control bus bit 6)
    A5D12 (-control bus bit 7)
    A5D13 (-control bus parity bit)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

088
Check for continuity of the control bus lines on
board E-D1. See MAP 1077, Bus Cable Wiring
Checks.
Was an open found?
Y N

089
Bad card
E-D1C2 (10-160).

090
Bad board
E-D1 (10-170).

091
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

092
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

093
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

094
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

095
Check for short to ground on -control sample received.
See MAP 1077, Bus Cable Wiring Checks.
Was a short found?
Y N

096
Reinstall all the cards and cables.
Is this a one drive system?
Y N

A A
U V

1 1 1
1 1 1
A A A
W X Y

A
Y
1
0

INTERFACE ERROR MAP

5340 SYSTEMS UNIT

PAGE 11 OF 13

E A A A B B   MAP 1083-11
2 W X Z A B
  1 1   A B
0 0 1 0
      0

097
Remove card E-B1C2.
-Set Power to 1 (operator panel).
Probe A-A2A5B12 (-control sample received).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  098
  Bad card
  E-B1C2 (10-160).

099
Reinstall all the cards and cables.
Is this a two drive system?
Y N

  100
  Remove card E-C1C2.
  -Set Power to 1 (operator panel).
  Probe A-A2A5B12 (-control sample received).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    101
    Bad card
    E-C1C2 (10-160).

  102
  Reinstall all the cards and cables.
  Is this a three drive system?
  Y N

103
Remove card E-D1C2.
-Set Power to 1 (operator panel).
Probe   A-A2A5B12   (-control   sample
received).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  104
  Bad card
  E-D1C2 (10-160).

105
Reinstall card.
Bad card
E-A1C2 (10-160).

106
Bad card
E-C1C2 (10-160).

107
Bad card
E-B1C2 (10-160).

108
Bad card
E-A1C2 (10-160).

109
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

110
Is this a four drive system?
Y N

A B B
Z A B

1 1
2 2
B B
C D

05JAN81   PN 8265714

EC 835086   PEC 834926

            MAP 1083-11

INTERFACE ERROR MAP

5340 SYSTEMS UNIT

MAP 1083-12

111

Check for short to ground on -control sample (drive D). See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

> **112**
>
> Reinstall all the cards and cables.
> Bad card
> A-A2D2.

113

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

114

Measure for +5 Vdc:
E-D1F2D03 (pos)
E-D1F2D08(neg)
Does the CE multimeter read more than 4.5 V?
Y N

> **115**
> **Go To Map 1034, Entry Point A.**

116

Check for short to ground on -control sample (drive D).
See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

> **117**
>
> Reinstall all the cards and cables.
> Bad card
> A-A2D2.

118

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

119

Check for short to ground on -control sample (drive C). See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

> **120**
>
> Reinstall all the cards and cables.
> Bad card
> A-A2D2.

121

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

122

Check for short to ground on -control sample (drive B). See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

> **123**
>
> Reinstall all the cards and cables.
> Bad card
> A-A2D2.

124

Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

125

Check for short to ground on -control sample (drive A). See MAP 1077, Dedicated Cable Wiring Checks.
Was a short found?
Y N

```
B  B
E  F
1  1
2  2
│  │
│  │
```

126
Reinstall all the cards and cables.
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

127
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	B	3	008
1049	A	1	001
1052	A	1	001
1064	A	1	001
1080	A	1	001
1081	A	1	001
1086	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0511	A

001
(Entry Point A)

Check the system power supply at PDTB1 for correct voltages. See 5340 Vol. D FSL YA080.

Voltage	Range			Pin
+5Vdc	4.4V	to	5.6V	1
-4Vdc	3.5V	to	4.5V	7
+12Vdc	10.5V	to	13.5V	3
-12Vdc	10.5V	to	13.5V	4
+24Vdc	21.6V	to	26.4V	15

Are the supply voltages in tolerance?
Y N

  002
  System power supply failure.
  Go To Map 0511, Entry Point A.

MAP DESCRIPTION:
This MAP isolates the disk power supply problems.

START CONDITIONS:
This MAP is entered from other disk FRU isolation MAPs when there is a power problem on the disk.

LOGIC CARDS TESTED:
E-A1B2, E-A1C2, E-A1D2, E-A1E2, E-A1F2, actuator driver card, board E-A1, and the disk DC power cable.

2
A

003
Measure for the following voltages on the E-A1 board:

    +5Vdc   E-A1F2D03
    -4Vdc   E-A1F2B06
    +12Vdc   E-A1F2B11
    -12Vdc   E-A1F2D12
    +24Vdc   E-A1F2G02
Are all the voltages correct?
Y N

    004
    Measure voltages at board E-A1 voltage crossover
    cables (10-190):

        +5Vdc   VC2-C and VC4-C
        -4Vdc   VC2-B and VC4-B
        +12Vdc   VC1-C
        -12Vdc   VC1-D
        +24Vdc   VC5-C
    Are all the voltages correct?
    Y N

        005
        Repair or exchange the drive A DC power cable.

    006
    Bad board
    E-A1 (10-170).
    The netlists in MAP 1077 may be used to correct the
    bad net on board E-A1.

007
Bad board
E-A1 (10-170).
The netlists in MAP 1077 may be used to correct the
bad net on board E-A1.

008
(Entry Point B)
Jumper the following lines:

E-A1D2G10 (brake coil drive) to E-A1D2J08.
E-A1D2G11 (+brake applied to system) to E-A1C2J08.

Pull out cards:

E-A1B2, E-A1C2, E-A1D2, E-A1E2, and E-A1F2.

-Set Power to 1 (operator panel).

-Press Dply Pwr Chk (CE panel).
Remember the lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 (CE panel) on?
Y N

> **009**
> Reinstall cards E-A1B2, E-A1C2, E-A1D2, E-A1E2,
> and E-A1F2 one at a time, set the power switch on,
> and press the Dply Pwr Chk switch (CE panel). If the
> Display light bit 1 byte 0 (CE panel) is on, then the
> card that was just installed is bad. Repeat the
> procedure until the bad card is isolated (see Note).
>
> Remove jumpers.

010
Disconnect the actuator driver card crossover cables
VC7, VC8, and VC10 (10-190).

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel) and note the
lights that are on in byte 0 of the CE panel (see Note).
Is the Display light bit 1 byte 0 on?
Y N

> **011**
> Remove all jumpers.
> Bad card
> Actuator coil driver card on drive A (10-160).

4
B

Note: Display light bit 1 byte 0 (CE panel) is on if a
power supply over current check has occurred.

012
Disconnect all the remaining board E-A1 crossover cables (10-190).
Check for a short to ground at the following pins:

+5Vdc	E-A1F2D03
-4Vdc	E-A1F2B06
+12Vdc	E-A1F2B11
-12Vdc	E-A1F2D12
+24Vdc	E-A1F2G02

Are any pins shorted to ground?
Y N

  013
  Remove all jumpers.
  Repair or exchange the drive A DC power cable.

014
Remove all jumpers.
Bad board
E-A1 (10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	B	3	004
1045	B	3	004
1046	A	1	001
1046	B	3	004
1047	B	3	004
1048	B	3	004
1048	C	11	093
1050	B	3	004
1050	E	13	105
1052	B	3	004
1053	B	3	004
1053	D	12	096
1054	B	3	004
1055	B	3	004
1056	B	3	004
1070	B	3	004
1071	B	3	004
1071	C	11	093

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	008	1080	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (1 ohm range)
E-A1F2S05 (CSR out) to E-A1F2U08.

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-A1C2, E-A1D2, E-A1E2, E-A1F2, and the actuator driver card on board E-A1, and the disk enclosure for disk drive A.

Note: An open circuit on net F2-23 could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the resistance less than 10 ohms?
Y N

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2 2
A B

002

Bad card

Actuator coil driver card on drive A (10-160).

003

Bad card

E-A1F2 (10-160).

004
(Entry Point B)

Is the Actuator Lock Knob on drive A unlocked?
Y N

   005
   Unlock the Actuator and run the disk MAPs again.

006
Observe the drive belt.

Note:
An open circuit on the following nets C2-09, C2-11, D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18, F2-21, F2-24, and F2-28, could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the drive belt turning?
Y N

   007
   -Set Power to 0 (operator panel).
   -Set Power to 1 (operator panel).
   Wait for 30 seconds.
   Is the drive belt turning?
   Y N

      008
      Go To Map 1080, Entry Point A.

   009
   Run the disk drive MAPs to drive A using MDI special (99-090):
   -Select drive A.
   -Enter 1040 001 for the starting MAP.
   Wait for the MDI MAPs to stop.
   Go to Page 4, Step 010, Entry Point F.

4
C

FRU ISOLATION MAP 1

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010

(Entry Point F)

Note: Damage to the actuator in the disk enclosure can cause you to enter this MAP.

Probe E-A1C2J05 (+out).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?

Y N

> **011**
> Probe E-A1C2U06 (-abs track address 1).
>
> ```
> Up    Light: On
> Down  Light: Off
> ```
>
> **Are the lights correct?**
>
> **Y N**
>
> > **012**
> > Probe E-A1C2U06 (-abs track address 1).
> >
> > ```
> > Up    Light: On or flashing
> > Down  Light: On or flashing
> > ```
> >
> > **Are the lights correct?**
> >
> > **Y N**
> >
> > > **013**
> > > Probe E-A1D2G13 (+normal error).
> > >
> > > ```
> > > Up    Light: On or flashing
> > > Down  Light: On or flashing
> > > ```
> > >
> > > **Are the lights correct?**
> > >
> > > **Y N**

```
6 6 5 5
D E F G  H
```

014

Measure for +5Vdc (+Q/2 error).

E-A1D2J07 (pos)

E-A1D2J08 (neg).

Does the CE multimeter read -0.1V to +0.6V?

Y N

> **015**
> Bad card
> E-A1F2 (10-160).

016

Probe E-A1C2D13 (+behind home).

```
Up    Light: Off
Down  Light: On
```

Are the lights correct?

Y N

> **017**
> Probe E-A1D2M08 (-calibration address).
>
> ```
> Up    Light: On
> Down  Light: Off
> ```
>
> **Are the lights correct?**
>
> **Y N**
>
> > **018**
> > Bad card
> > E-A1D2
> > ---or---
> > E-A1F2 (10-160).
>
> **019**
> Jumper E-A1F2P11 (-in drive) to E-A1F2P08.
> Measure for +24Vdc.
> E-A1F2M04(pos) to E-A1F2P08 (neg)
> E-A1F2M05(pos) to E-A1F2P08 (neg).
> **Are both the voltages more than 20V?**
> **Y N**

```
5 5 5
J K L
```

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EC 835086   PEC 834824

MAP 1085-4

G J K L
4 4 4 4

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

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F
4

MAP 1085-5

020
Remove jumper.
Bad card
E-A1C2
---or---
E-A1F2
(10-160).

021
Remove jumper.
Bad card
Actuator coil driver card on drive A (10-160).

022
Probe E-A1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   023
   Bad card
   E-A1C2
   ---or---
   E-A1D2 (10-160).

024
Bad card
E-A1D2
---or---
E-A1F2 (10-160).

025
Bad card
E-A1D2
---or---
E-A1C2 (10-160).

026
Probe E-A1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   027
   Probe E-A1C2S05 (-count down 2 tracks).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      028
      Bad card
      E-A1C2 (10-160).

   029
   Bad card
   E-A1F2 (10-160).

030
Probe E-A1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   031
   Probe E-A1C2D13 (+behind home).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

6 6 6
M N P

032
Bad card
E-A1F2 (10-160).

033
Bad card
E-A1D2 (10-160).

034
Probe E-A1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    035
    Bad card
    E-A1D2
    ---or---
    E-A1C2 (10-160).

036
Bad card
E-A1C2 (10-160).

037
Probe E-A1D2G13 (+normal error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    038
    Bad card
    E-A1D2 (10-160).

Q

039
Probe E-A1D2D05 (-count up 2 tracks).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

    040
    Bad card
    E-A1F2 (10-160).

041
Bad card
E-A1D2 (10-160).

042
Probe E-A1C2U06 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    043
    Probe E-A1D2U11 (+behind home).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

        044
        Probe E-A1C2D13 (+behind home).

        Up   Light: Off
        Down Light: On

        Are the lights correct?
        Y N

U
6

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

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S T V W
6 6 6

MAP 1085-7

045
Probe E-A1D2B05 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **046**
> Measure for +5Vdc (coil current signal).
> E-A1D2B09 (pos)
> E-A1D2D08 (neg).
> **Does the CE multimeter read +0.3 to -0.3V?**
> Y N
>
> > **047**
> > Measure for -5Vdc (coil current signal).
> > E-A1D2B09 (pos)
> > E-A1D2D08 (neg).
> > **Does the CE multimeter read -0.3V to -4.5V?**
> > Y N
> >
> > > **048**
> > > Bad card
> > > Actuator coil driver card on drive A (10-160).
> >
> > **049**
> > Bad card
> > E-A1F2 (10-160).
>
> **050**
> Measure for +24Vdc (base PNP in).
> E-A1F2U07 (pos)
> E-A1F2P08 (neg).
> **Does the CE multimeter read more than 10V?**
> Y N
>
> > **051**
> > Bad card
> > Actuator coil driver card on drive A (10-160).

V W

052
Bad card
E-A1C2
---or---
E-A1D2
---or---
E-A1F2 (10-160).

053
Bad card
E-A1D2 (10-160).

054
Bad card
E-A1F2 (10-160).

055
Probe E-A1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **056**
> Probe E-A1C2D13 (+behind home).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **057**
> > Measure for +5Vdc (-N/2 error).
> > E-A1F2M08 (pos)
> > E-A1F2P08 (neg).
> > **Does the CE multimeter read -0.3V to +0.3V?**
> > Y N
> >
> > > **058**
> > > Bad card
> > > E-A1F2 (10-160).

8 8 8
X Y Z

059
Bad card
Actuator coil driver card on drive A (10-160).

060
Probe E-A1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

065
Bad card
Actuator coil driver card on drive A
(10-160).

066
Bad card
E-A1F2 (10-160).

067
Bad card
E-A1D2 (10-160).

068
Bad card
E-A1C2 (10-160).

  061
  Probe E-A1D2B05 (-abs track address 1).

  Up   Light: Off
  Down Light: Off

  Are the lights correct?
  Y N

    062
    Measure for +5Vdc (coil current signal).
    E-A1D2B09 (pos)
    E-A1D2D08 (neg).
    Does the CE multimeter read -0.3V to +0.3V?
    Y N

      063
      Bad card
      Actuator coil driver card on drive A (10-160).

    064
    Measure for +24Vdc (base PNP in).
    E-A1F2U07 (pos)
    E-A1F2P08 (neg).
    Does the CE multimeter read more than 10V?
    Y N

069
Probe E-A1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  070
  Bad card
  E-A1F2 (10-160).

071
Bad card
E-A1C2 (10-160).

072
Probe E-A1F2P11 (-in drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

A A A A
A B C D

9 9
A A
E F

A
F
8
|
073
Probe E-A1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    074
    Probe E-A1F2P11 (-in drive).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

        075
        Probe E-A1D2U11 (+behind home).

        Up   Light: Off
        Down Light: On

        Are the lights correct?
        Y N

            076
            Bad card
            E-A1D2
            ---or---
            E-A1E2 (10-160).

        077
        Bad card
        E-A1F2 (10-160).

078
Measure for +5Vdc (coil current signal):
E-A1D2B09 (pos)
E-A1D2D08 (neg).
Does the CE multimeter read -0.3V to +0.3V?
Y N
|
| |
| |
A A A
G H J

A A A A
E G H J
8
|
      079
      Bad card
      E-A1F2 (10-160).

    080
    Bad card
    E-A1D2
    ---or---
    E-A1F2 (10-160).

081
Measure for -5Vdc (integrator output):
E-A1F2P04 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read +0.3V to -4.0V?
Y N

    082
    Bad card
    E-A1F2 (10-160).

083
Bad card
E-A1D2
---or---
E-A1F2 (10-160).

084
Probe
E-A1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N
|
| |
1 1
0 0
A A
K L

085
Probe
E-A1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **086**
> Bad card
> E-A1D2 (10-160).

087
Bad card
E-A1F2 (10-160).

088
Measure for +24Vdc (base PNP in).
E-A1F2U07 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

> **089**
> Bad card
> Actuator coil driver card on drive A (10-160).

090
Measure for +5Vdc (+Q/2 error).
E-A1D2J07 (pos)
E-A1D2J08 (neg).
Does the CE multimeter read 0V TO 0.5V?
Y N

> **091**
> Bad card
> E-B1F2
> ---or---
> Actuator coil driver card on drive A (10-160).

092
Bad card
E-A1F2
---or---
E-A1D2 (10-160).

A
M

05JAN81   PN 8265716

EC 835086 PEC 834824

MAP 1085-10

A
M

093
(Entry Point C)

Is the Actuator Lock Knob on drive A unlocked?
Y N
|
| **094**
| Unlock the Actuator and run the disk MAPs again.
|
095
Bad card
E-A1C2
---or---
E-A1D2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

096
(Entry Point D)

-Set Power to 0 (operator panel).
Measure the resistance from E-A1F2J08 to E-A1F2J05
(clock threshold).
Is the resistance greater than 200 ohms?
Y N

> **097**
> Disconnect VC3 on board E-A1.
> Measure the resistance of the disk enclosure
> resistors (1 ohm range) VC3-C to VC3-D (10-190).
> **Is the resistance greater than 150 ohms?**
> **Y N**
>
> > **098**
> > Reinstall connector VC3.
> > Bad drive A disk enclosure (10-030).
>
> **099**
> There is a short circuit to ground on pins C and D of
> VC3 connector (10-190).

100
Jumper E-A1D2P07 (+brake applied) to E-A1D2P08.
-Set Power to 1 (operator panel).
Probe E-A1F2B04 (+servo clock SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **101**
> Remove jumper.
> Bad card
> E-A1F2 (10-160).

Note: An open circuit on net F2-02 could cause you to
enter this MAP. See netlist tables, MAP 1077.

1
3
A
N

05JAN81   PN 8265716

EC 835086 PEC 834824

MAP 1085-12

A
N
1
2

102
Probe E-A1D2G05 (+servo clock SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **103**
> Bad board
> E-A1 (10-170).

104
Remove jumper.
Bad jumpers on card E-A1D2
---or---
Bad card
E-A1D2 (10-160).

105
(Entry Point E)

Is the Actuator Lock Knob on drive A unlocked?
Y N

> **106**
> Unlock the Actuator and run the disk MAPs again.

107
Bad card
E-A1D2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	E	8	053
1046	D	6	036
1046	E	8	053
1047	D	6	036
1049	A	1	001
1049	B	3	010
1051	A	1	001
1051	B	3	010
1052	A	1	001
1053	A	1	001
1053	B	3	010
1053	C	5	025

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	1080	A
4	017	1080	A
5	029	1084	A

001
(Entry Point A)

-Set Power to 0 (operator panel).

Jumper E-A1D2G10 (brake coil drive) to E-A1D2D08.
Jumper E-A1D2G11 (+brake applied to system) to E-A1D2J08.

-Set Power to 1 (operator panel).

Wait for 2 to 3 minutes and then observe the drive motor (see note).

Is the motor turning?
Y N

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2 2
A B

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on nets B2-18, D2-05, E2-06, and F2-20 could cause you to enter this MAP. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-A1B2, E-A1C2, E-A1D2, E-A1E2, E-A1F2, cables E-A1A2, E-A1A3, E-A1A4 and the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

002
Remove all jumpers.
Go To Map 1080, Entry Point A.

003
Reseat cable E-A1A2.
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Switch probe to MST 1,
Probe E-A1E2G12 (2F write clock).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

> **004**
> Remove all jumpers.
> Bad card
> E-A1E2 (10-160).

005
Switch probe to Multi.

Probe E-A1D2J05 (1F write clock).

```
Up    Light: On or flashing
Down  Light: On or flashing
```

Are the lights correct?
Y N

> **006**
> Remove all jumpers.
> Bad card
> E-A1B2 (10-160)

007
Do the following in order:

1. -Set Power to 0 (operator panel).
2. Jumper E-A1F2P02 (-power on delay) to E-A1F2P08.
3. -Set Power to 1 (operator panel).
4. Remove jumper E-A1F2P02 to E-A1F2P08.
5. Run the disk drive MAPs to drive A using MDI special (99-090), and return to this step after the MAPs stop.
-Select drive A.
-Enter 1040 001 for the starting MDI ID and step number.
Did disk MAPs run without errors?
Y N

> **008**
> Remove all jumpers.
> Bad jumpers on card E-A1D2
> ---or---
> Bad card
> E-A1D2
> ---or---
> E-A1E2 (10-160).

009
Remove all jumpers.
Bad card
E-A1F2
---or---
E-A1D2 (10-160).

C

010
(Entry Point B)

Measure for -8Vdc:
E-A1F2B10 (pos)
E-A1A2D08 (neg).
Does the CE multimeter read -7V to -9V?
Y N

> **011**
> Check for continuity of E-A1A2B10 to E-A1A2B12
> to E-A1A2D09 to E-A1A2D13 to E-A1F2S04.
> **Is the continuity OK?**
> Y N
>
>> **012**
>> Bad board
>> E-A1 (10-170).
>
> **013**
> Remove E-A1E2.
> -Set Power to 1 (operator panel).
> Measure for -8 Vdc:
> E-A1F2B10 (pos)
> E-A1A2D08 (neg)
> **Does the CE multimeter read -7V to -9V?**
> Y N
>
>> **014**
>> Reinstall original E-A1E2.
>> Bad card E-A1F2.
>
> **015**
> Bad card
> E-A1E2.

Note: An open circuit on nets A2-07, A2-08, and F2-22
could cause you to enter this MAP. See netlist tables,
MAP 1077.

4
D

016
-Set Power to 0 (operator panel).
Add the following jumpers:
E-A1D2G10 (brake coil drive) to E-A1D2D08
E=A1D2G11 (+brake applied to system) to E-A1D2J08.
-Set Power to 1 (operator panel).
Wait for 2 minutes and then observe the drive motor.
Is the drive motor turning?
Y N

> **017**
> Remove all jumpers
> **Go To Map 1080, Entry Point A.**

018
Probe E-A1D2J02 (-osc late) and E-A1D2B13 (-osc early).

Up   Light: Off
Down Light: On

Are the lights correct for either line?
Y N

> **019**
> Probe E-A1D2J02 (-osc late) and E-A1D2B13 (-osc early).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **020**
> > Remove all jumpers.
> > Bad card
> > E-A1F2 (10-160).
> > ---or---
> > Bad drive A disk enclosure (10-030).

021
Switch probe to MST 1,
Probe E-A1E2G12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **022**
> Remove all jumpers.
> Bad card
> E-A1E2 (10-160).

023
Remove all jumpers.
Bad card
E-A1F2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

024
Remove all jumpers.
Bad card
E-A1F2
---or---
E-A1D2 (10-160).

E F

G H   MAP 1086-5

025
(Entry Point C)

Measure for -7Vdc:
E-A1F2U10 (pos)
E-A1F2U08 (neg).
Does the CE multimeter read -6V to -8V?
Y N

> **026**
> Remove E-A1E2.
> -Set Power to 1 (operator panel).
> Measure for -7 Vdc:
> E-A1F2U10 (pos)
> E-A1F2U08 (neg)
> **Does the CE multimeter read -6V to -8V?**
> Y N
>
>> **027**
>> Reinstall original E-A1E2.
>> Measure for -12Vdc:
>> E-A1F2U12 (pos)
>> E-A1F2U08 (neg).
>> **Does the CE multimeter read -10.5V to -13.5V?**
>> Y N
>>
>>> **028**
>>> Measure for -12Vdc:
>>> VC1-D (pos).
>>> E-A1F2U08 (neg).
>>> **Does the CE multimeter read -10.5V to -13.5V?**
>>> Y N
>>>
>>>> **029**
>>>> **Go To Map 1084, Entry Point A.**
>>>
>>> **030**
>>> Bad board
>>> E-A1 (10-170).
>>
>> **031**
>> Bad card
>> E-A1F2 (10-160).

032
Bad card
E-A1E2.

033
Check continuity from E-A1F2U10 to E-A1F2P10 to
E-A1F2J10 to E-A1F2D10 to E-A1E2D10.
Is the continuity OK?
Y N

> **034**
> Bad board
> E-A1 (10-170).

035
Bad card
E-A1F2
---or---
E-A1D2 (10-160).

G H

036

(Entry Point D)

Jumper E-A1A5D04 (-data select) to E-A1B2U08.

Probe E-A1C2U12 (+write select).

Note: An open circuit on nets A5-04, A5-09, A5-11, C2-32, and E2-02 could cause you to enter this MAP. See netlist tables, MAP 1077.

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

| **037**
| Jumper E-A1C2G12 (-write) to E-A1C2J08.
| Probe E-A1C2U12 (+write select).
|
| Up   Light: On
| Down Light: Off
|
| **Are the lights correct?**
| Y N
|
| | **038**
| | Remove all jumpers.
| | Bad card
| | E-A1C2 (10-160).
|
| **039**
| Probe E-A1E2B13 (data PES).
|
| Up   Light: On or flashing
| Down Light: On or flashing
|
| **Are the lights correct?**
| Y N
7   7
J   K
L

L

040

Remove all jumpers.

Check for an open or a short to ground on drive A dedicated cable nets (-write), (-write data), (+write gate return), and (-reset error).   See MAP 1077, Dedicated Cable Wiring Checks.

Was an open or a short found?
Y N

| **041**
| -Set Power to 1 (operator panel).
| Probe A-A2A4D06 (-reset error).
|
| Up   Light: Off
| Down Light: On
|
| **Are the lights correct?**
| Y N
|
| | **042**
| | Probe A-A2A4D11 (-write) and A-A2A4B10
| | (-write data).
| |
| | Up   Light: Off
| | Down Light: Off
| |
| | **Are the lights correct for either line?**
| | Y N
| |
| | | **043**
| | | Probe A-A2A4D11 (-write) and A-A2A4B10
| | | (-write data).
| | |
| | | Up   Light: Off
| | | Down Light: On
| | |
| | | **Are the lights correct for either line?**
| | | Y N
7   7   7   7   7
M   N   P   Q   R

FRU ISOLATION MAP 2

5340 SYSTEMS UNIT

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044
Using the TU Select option (99-065), select
drive A and loop on TA170.
Probe A-A2A4D11 (-write) and A-A2A4B10
(-write data).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

    045
    Bad card
    A-A2C2.
    ---or---
    Bad top card connector.

046
Bad card
E-A1B2
---or---
E-A1E2 (10-160)
---or---
A-A2C2

047
Bad card
A-A2C2.

048
Bad card
E-A1B2 (10-160)

049
Bad card
A-A2D2.

050
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

051
Remove all jumpers.
Bad card
E-A1E2 (10-160).

052
Remove jumper
Bad card
E-A1C2 (10-160).

053
(Entry Point E)
Probe E-A1D2P10 (+home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  054
  Check continuity from A-A2A5D04 to E-A1A3D04
  (-control bus bit 0).
  Is the continuity OK?
  Y N

    055
    Bad cable. E-A1A3 (10-150).

  056
  Bad card
  E-A1C2 (10-160).

057
Bad card
E-A1C2
---or---
E-A1D2 (10-160).

Note: An open circuit on net D2-37 could cause you to
enter this MAP. See netlist tables, MAP 1077.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	A	1	001
1046	A	1	001
1046	C	5	037
1046	D	7	046
1047	A	1	001
1048	A	1	001
1049	A	1	001
1050	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1063	B	5	034

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on the following nets could cause you to enter this MAP: A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, and VC-07. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-A1F2, E-A1C2, E-A1D2, E-A1B2, E-A1E2, board E-A1, cables E-A1A4 and E-A1A5, and the disk enclosure.

Is the Actuator Lock Knob on drive A unlocked?
Y N

002
Unlock the Actuator and run the disk MAPs again.

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2
A

003
Probe E-A1C2B13 (-shift).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y **N**

> **004**
> Probe E-A1C2B13 (-shift).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y **N**
>
>> **005**
>> Jumper E-A1A5D04 (-data select) to E-A1A5D08.
>> Probe E-A1B2U11 (write clock).
>>
>> Up   Light: On or flashing
>> Down Light: On or flashing
>>
>> **Are the lights correct?**
>> Y **N**
>>
>>> **006**
>>> Probe E-A1B2P12 (+data select gated).
>>>
>>> Up   Light: On
>>> Down Light: Off
>>>
>>> **Are the lights correct?**
>>> Y **N**

007
Check for continuity (1 ohm range).
E-A1A2D02 to E-A1A2B13 (+data select gated).
Is the continuity OK?
Y N

> **008**
> Remove jumper.
>
> Reseat cable E-A1A2.
> ---or---
> Bad drive A disk enclosure (10-030).
> Note: A temporary repair is to add a jumper from
> E-A1B2P12 to E-A1C2S12.

009
Check continuity from E-A1C2S12 to E-A1B2P12
(+data select gated).
Is the continuity OK?
Y N

> **010**
> Remove jumper.
> Bad board
> E-A1 (10-170).

011
Check for continuity of drive A (-data select). See MAP
1077, Dedicated Cable Wiring Checks.
Is the continuity OK?
Y N

> **012**
> Remove jumper.
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

4 4 3 3
B C D E F

3
G

D E G
2 2 2

FRU ISOLATION MAP 3

5340 SYSTEMS UNIT

PAGE 3 OF 10

H J   MAP 1087-3

013
Remove jumper.
Bad card
E-A1C2
---or---
E-A1B2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

014
Check for an open or a short to ground on drive A
(write clock) and (-sector). See MAP 1077,
Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

    015
    Remove jumper.
    Bad card
    E-A1B2 (10-160)
    ---or---
    Open or short to ground on +read data, -write
    data, +write gate return, -fast sync, read clock or
    write clock. See MAP 1077, Dedicated Cable
    Wiring Checks.

016
Remove jumper.
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

017
Remove jumper.

Switch probe to MST 1,
Probe E-A1B2S11 (-increase) and E-A1B2S12
(-decrease).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

H J

018
Bad card
E-A1B2 (10-160)

019
Switch probe to Multi.

Probe E-A1C2B13 (-shift).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    020
    Measure for +5Vdc (compensation coil):
    E-A1D2D04 (pos)
    E-A1D2D08 (neg).
    Does the CE multimeter read 1.0V to 1.6V?
    Y N

        021
        Remove card E-A1D2.

        Measure the resistance (10X range):
        E-A1D2D04 (pos)
        E-A1D2D08 (neg).
        Is the resistance greater than 200 ohms?
        Y N

            022
            Bad drive A disk enclosure (10-030).

        023
        Bad card
        E-A1D2 (10-160).

4 4
K L   MAP 1087-3

B C K L
2 2 3 3

FRU ISOLATION MAP 3

5340 SYSTEMS UNIT

PAGE 4 OF 10

M N

MAP 1087-4

024
Bad card
E-A1F2
---or---
E-A1E2
---or---
E-A1D2 (10-160).

025
Check for an open or a short to ground on drive A
(-sector), (-write), and (-fast sync). See MAP
1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

  026
  Bad jumpers on card E-A1D2
  ---or---
  Bad card
  E-A1D2
  ---or---
  E-A1F2
  ---or---
  E-A1C2 (10-160).

027
Exchange the bad card, cable, or board found in
the preceding step (10-150, 10-160, 10-170).

028
Bad card
E-A1C2 (10-160).

029
Switch probe to MST 1,
Probe E-A1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

M N

030
Bad card
E-A1B2 (10-160)

031
Verify probe at MST 1.
Probe E-A1B2S11 (-increase) and E-A1B2S12
(-decrease).

Up   Light: Off
Down Light: Off

Are the lights correct for either of the lines?
Y N

  032
  Bad card
  E-A1F2
  ---or---
  E-A1E2
  ---or---
  E-A1D2 (10-160).

033
Bad card
E-A1B2 (10-160)

05JAN81   PN 8265718
EC 835086   PEC 834926
MAP 1087-4

034
(Entry Point B)

Check for continuity E-A1B2D08 to E-A1C2D08.
Is the continuity OK?
Y N

 035
 Bad board
 E-A1 (10-170).

036
Bad card
E-A1B2 (10-160)

037
(Entry Point C)

Measure for +12Vdc (profile gain voltage):
E-A1C2B02 (pos)
E-A1C2D08 (neg).

Note: An open circuit on nets C2-02 and D2-03 could cause you to enter this MAP. See netlist tables, MAP 1077.
Does the CE multimeter read more than 1.5V?
Y N

 038
 Measure the resistance from VC9-D to VC9-C on drive A (10-190).
 Is resistance in range from 300 ohms to 400 ohms?
 Y N

  039
  Bad drive A disk enclosure (10-030).

 040
 Bad card
 E-A1D2 (10-160).

041
Disconnect the voltage connector VC9 (10-190).
Measure for +5Vdc (desired velocity):
E-A1C2D02 (pos)
E-A1C2D08 (neg).
Does the CE multimeter read less than 0.3V?
Y N

 042
 Does the CE multimeter read more than 5V?
 Y N

  043
  Reinstall connector VC9.
  Bad card
  E-A1D2 (10-160).

6 6
P Q

044
Reinstall connector VC9.
Bad card
E-A1C2 (10-160).

045
Reinstall connector VC9.
Bad card
E-A1C2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

046
(Entry Point D)

Measure for -12Vdc (write current defining resistor):
E-A1B2D04 (pos)
E-A1B2D08 (neg).
Does the CE multimeter read between -10.5V and -13.5V?
Y N

> **047**
> Bad card
> E-A1B2 (10-160)

048
Measure for -4Vdc (write current):
E-A1B2D08 (pos)
E-A1B2D07 (neg).
Does the CE multimeter read between -3.5V to -4.5V?
Y N

> **049**
> Bad card
> E-A1B2 (10-160)
> ---or---
> Bad drive A disk enclosure (10-030).

050
Is cable E-A1A2 seated correctly (10-190)?
Y N

> **051**
> Reseat the cable and run the disk MAPs again.

Note: An open circuit on the following nets A2-02, B2-04, B2-08, B2-10, B2-13, C2-10, and V-04 could cause you to enter this MAP. See netlist tables, MAP 1077.

8
R

052
Probe the pins shown in Table 4.

```
.-----------Table 4 --------------.
| Note: All probing on board E-A1 |
|                                 |
| Probe MST 1 |    Probe Multi    |
|A2B03  A2B04 |A2B06  A2B05  A2B02|
|  D      D   |  U     U      D   |
----------------------------------
```

Are the lights correct?
Y N

053
Probe the pins shown in Table 1 and check the
results of the probing against the entries in the table.
If the results match, that head is selected (see Note
1).

```
.------------ Table 1 -------------.
| Note: All probing on board E-A1  |
|                                  |
|    | Probe MST1|  Probe Multi    |
|Head|A2B03  A2B04|A2B06  A2B05  A2B02|
| 0    U      U      D     U     U  |
| 1    D      U      D     U     U  |
| 2    U      D      D     U     U  |
| 3    D      D      D     U     U  |
| 4    U      U      U     D     U  |
| 5    D      U      U     D     U  |
| 6    U      D      U     D     U  |
| 7    D      D      U     D     U  |
| 8    U      U      U     U     D  |
| 9    D      U      U     U     D  |
|10    U      D      U     U     D  |
|11    D      D      U     U     D  |
-----------------------------------
```

Was a valid head selected?
Y N

| | | |
| | | |

9 9 9
S T U

Note 1:
U Means- Up   Light: On
               Down Light: Off
D Means- Up   Light: Off
               Down Light: On

054
Probe the pins in Table 2 to determine which head is selected (see Note 1).

```
.----------- Table 2 -----------.
| Note: All probing on board E-A1|
|                                |
|           Probe Multi          |
| Head|B2P07 B2P05|B2P10 B2P06   |
|   0    U     U     U     U     |
|   1    D     U     U     U     |
|   2    U     D     U     U     |
|   3    D     D     U     U     |
|   4    U     U     D     U     |
|   5    D     U     D     U     |
|   6    U     D     D     U     |
|   7    D     D     D     U     |
|   8    U     U     U     D     |
|   9    D     U     U     D     |
|  10    U     D     U     D     |
|  11    D     D     U     D     |
--------------------------------
```

Was a valid head selected?
Y N

> **055**
> Bad card
> E-A1C2 (10-160).

056
Go to Step 060, Entry Point E.

057
Bad card
E-A1B2 (10-160)
---or---
Bad drive A disk enclosure (10-030).

058
Probe E-A1C2G12 (-write).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **059**
> Bad card
> A-A2C2
> ---or---
> Short on -write net. See dedicated cable wiring checks..

060
(Entry Point E)

Measure the resistance (10 ohm range) from E-A1A2D04 (actuator I/O line B) to E-A1A2D05 (actuator I/O line A).
Is the resistance less than 300 ohms?
Y N

> **061**
> Bad drive A disk enclosure (10-030).

062
-Set Power to 1 (operator panel).
Add a jumper from E-A1C2G11 (+write block) to E-A1C2J08.
Using the TU Select option (99-065), select drive A and loop on TA169.
Probe E-A1C2M11 (+data unsafe).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

1 1
0 0
V W

063
Remove jumper.
Bad card
E-A1C2 (10-160).

064
Remove jumper.
Bad card
E-A1B2 (10-160)
---or---
Bad drive A disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	A	1	001
1050	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1083	A
2	010	1083	A
2	012	1083	A

001
(Entry Point A)
Probe A-A2B6A02 (-data select) (see FSL AB300)

Up   Light: On
Down Light: Off

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-A1B2, E-A1C2, E-A1F2, E-A1E2, and E-A1D2, cables
E-A1A4 and E-A1A5, and the drive A disk enclosure.

Note:
An open circuit on nets A5-10, B2-07, B2-11, C2-12
C2-13, C2-25, C2-26, D2-07, D2-42, E2-04, and V-04
could cause you to enter this MAP. See netlist tables,
MAP 1077.

Are the lights correct?
Y N

  002
  Bad card
  A-A2C2
  ---or---
  A-A2D2
  ---or---
  Bad top card connector
  ---or---
  Short to Ground on drive B (-data select). See MAP
  1077, Dedicated Cable Wiring Checks.

2
A

A
1
|
|
|

B

MAP 1088-2

003
Probe A-A2B4D04 (-data select)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **004**
> Bad card
> A-A2C2
> ---or---
> A-A2D2
> ---or---
> Bad top card connector
> ---or---
> Short to Ground on drive C (-data select). See MAP
> 1077, Dedicated Cable Wiring Checks.

005
Probe A-A2B5D04 (-data select)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **006**
> Bad card
> A-A2C2
> ---or---
> A-A2D2
> ---or---
> Bad top card connector
> ---or---
> Short to Ground on drive D (-data select). See MAP
> 1077, Dedicated Cable Wiring Checks.

B

007
Probe A-A2B6A04 (-interrupt) (see FSL AB300)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **008**
> **Go To Map 1083, Entry Point A.**

009
Probe A-A2B4B04 (-interrupt)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **010**
> **Go To Map 1083, Entry Point A.**

011
Probe A-A2B5B04 (-interrupt)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **012**
> **Go To Map 1083, Entry Point A.**

3
C

013
Jumper E-A1A5D04 (-data select) to E-A1B2U08.
Probe E-A1A5B05 (-sector).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **014**
> Check for an open or a short to ground on drive A
> (-sector).   See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **015**
> > Remove cable E-A1A5.
> > -Set Power to 1 (operator panel).
> > Probe A-A2A4B05 (-sector).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **016**
> > > Reinstall the cable.
> > > Bad card
> > > A-A2C2.
> >
> > **017**
> > Reinstall the cable.
> > Bad card
> > E-A1D2 (10-160).
>
> **018**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

Note: Remove this jumper when leaving this MAP.
Failure to do so will result in a WRAP error on each of
the remaining disk drives.

4
D

019
Probe E-A1A5D12 (write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  020
  Probe E-A1C2S12 (+data select gated).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    021
    Disconnect cable E-A1A2.
    -Set Power to 1 (operator panel).
    Wait 30 seconds, and then press Reset (CE panel).
    Probe E-A1C2S12 (+data select gated).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

      022
      Reinstall all cables.
      Bad card
      E-A1C2 (10-160).

    023
    Bad card
    E-A1B2 (10-160)
    ---or---
    Bad drive A disk enclosure (10-030).

024
Probe E-A1B2P12 (+data select gated).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  025
  Check for continuity
  E-A1C2S12 to E-A1B2P12 (+data select gated).
  Is the continuity OK?
  Y N

    026
    Bad drive A disk enclosure (10-030).
    Note:
    A temporary repair is to add a jumper from E-A1C2S12 to E-A1B2P12.

  027
  Bad card
  E-A1B2 (10-160)

028
Check for an open or a short to ground on drive A (write clock). See MAP 1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

  029
  Bad card
  E-A1B2 (10-160)
  ---or---
  A-A2C2.

030
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

5
E   F

031
Probe E-A1B2P09 (-chip select 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **032**
> Probe E-A1B2P06 (-head select 8) and E-A1B2P10 (-head select 4).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **033**
> > Bad card
> > E-A1C2 (10-160).
>
> **034**
> Probe E-A1B2M05 (-FH select).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **035**
> > Bad card
> > E-A1B2 (10-160)
>
> **036**
> Bad card
> E-A1C2 (10-160).

037
Probe E-A1C2B06 (-go home or POFL).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **038**
> Bad card
> E-A1D2
> ---or---
> E-A1C2 (10-160).

039
Switch probe to MST 1,
Probe E-A1B2P04 (-head select B).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **040**
> Probe the pins shown in the following table and determine which head is selected by matching the probe results against the entries in the table. If the results match, that head is selected (see Note 1).

(Step 040 continues)

7
H

(Step 040 continued)

```
.------------ Table 1 ------------.
| Note: All probing on board E-A1 |
|                                 |
|     | Probe MST1|   Probe Multi  |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0    U     U     D     U     U  |
| 1    D     U     D     U     U  |
| 2    U     D     D     U     U  |
| 3    D     D     D     U     U  |
| 4    U     U     U     D     U  |
| 5    D     U     U     D     U  |
| 6    U     D     U     D     U  |
| 7    D     D     U     D     U  |
| 8    U     U     U     U     D  |
| 9    D     U     U     U     D  |
|10    U     D     U     U     D  |
|11    D     D     U     U     D  |
'---------------------------------'
```

Note 1:
U Means- Up   Light: On
         Down Light: Off
D Means- Up   Light: Off
         Down Light: On

Was a valid head selected?
Y N

  041
  Bad card
  E-A1B2 (10-160)

J

J

MAP 1088-6

042
Note head selected from Table 1.

Probe the pins in the following table to determine which head is selected.

```
.------------ Table 2 ------------.
| Note: All probing on board E-A1|
|                                |
|         Probe Multi            |
| Head|B2P07 B2P05|B2P10 B2P06   |
|  0    U     U     U     U      |
|  1    D     U     U     U      |
|  2    U     D     U     U      |
|  3    D     D     U     U      |
|  4    U     U     D     U      |
|  5    D     U     D     U      |
|  6    U     D     D     U      |
|  7    D     D     D     U      |
|  8    U     U     U     D      |
|  9    D     U     U     D      |
| 10    U     D     U     D      |
| 11    D     D     U     D      |
'--------------------------------'
```

Note 1:
U Means- Up   Light: On
         Down Light: Off
D Means- Up   Light: Off
         Down Light: On

Was the same head selected both times?
Y N

  043
  Bad card
  E-A1B2 (10-160)

044
Was head three selected?
Y N

7 7
K L

H K L
5 6 6

FRU ISOLATION MAP 4

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M   MAP 1088-7

045
Bad card
E-A1C2 (10-160).
---or---
Bad drive A disk enclosure (10-030).

046
Bad card
E-A1B2
---or---
E-A1C2 (10-160)
---or---
Bad drive A disk enclosure (10-030).

047
Measure for +5Vdc (VCO error signal):
E-A1B2U13 (pos)
E-A1B2P08 (neg).
Does the CE multimeter read between 0V and 0.5V?
Y N

> **048**
> Verify probe at MST 1.
> Probe E-A1B2U06 (+servo inhibit VCO).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
>> **049**
>> Bad card
>> E-A1E2 (10-160).
>
> **050**
> Bad card
> E-A1B2 (10-160)

051
Switch probe to Multi.

With the power on, remove cable E-A1A5.
Probe E-A1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **052**
> Reinstall all cables.
> Bad card
> E-A1C2 (10-160).

053
Reinstall the cable with the power on.
Probe E-A1C2G06 (-FH not selected)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **054**
> Bad card
> E-A1C2 (10-160).

055
Switch probe to MST 1,
Probe E-A1B2P13 (standarized data) and E-A1B2S09
(1F read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

M

056
Check for an open or a short to ground on drive A
(-read). See MAP 1077, Dedicated Cable Wiring
Checks.
Was an open or a short found?
Y N

    057
    Bad card
    E-A1B2
    ---or---
    E-A1D2
    (10-160).

058
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

059
Switch probe to Multi.

Probe A-A2C2P05 (+read data).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    060
    Check for an open or a short to ground on drive A
    (+read data). See MAP 1077, Dedicated Cable
    Wiring Checks.
    Was an open or a short found?
    Y N

        061
        Bad card
        E-A1B2
        ---or---
        A-A2C2.

Q R

062
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

063
Probe A-A2A4D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    064
    Check for an open or a short to ground on drive A
    (-index). See MAP 1077, Dedicated Cable Wiring
    Checks.
    Was an open or a short found?
    Y N

        065
        Remove cable E-A1A5.
        -Set Power to 1 (operator panel).
        Probe A-A2A4D07 (-index).

        Up   Light: On
        Down Light: Off

        Are the lights correct?
        Y N

            066
            Reinstall all cables.
            Bad card
            A-A2C2.

        067
        Reinstall all cables.
        Bad card
        E-A1D2 (10-160).

    068
    Exchange the bad card, cable, or board found in the
    preceding step (10-150, 10-160, 10-170).

9
S

069
Measure the following for +5Vdc (AGC reference and control voltages):
E-A1B2G02 (pos) to E-A1B2J08 (neg)
E-A1B2J02 (pos) to E-A1B2J08 (neg).
Does the CE multimeter read 1.2V to 1.9V?
Y N

> **070**
> Bad card
> E-A1B2 (10-160)

071
Switch probe to MST 1,
Probe E-A1E2B13 (data PES).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **072**
> Measure for +2Vdc:
> E-A1B2S10 (pos)
> E-A1B2U08 (neg).
> **Does the CE multimeter read 1.5V to 2.5V?**
> Y N
>
> > **073**
> > Bad card
> > E-A1B2 (10-160)
>
> **074**
> Bad card
> E-A1E2
> ---or---
> E-A1B2 (10-160).

075
Switch probe to Multi.

Probe E-A1B2U07 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **076**
> Check for short to ground on drive A (read clock).
> See MAP 1077, Dedicated Cable Wiring Checks.
> **Was a short found?**
> Y N
>
> > **077**
> > Bad card
> > E-A1B2 (10-160)
> > ---or---
> > A-A2C2.
>
> **078**
> Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

079
Using the TU Select option (99-065), select drive A and loop on TA170.
Probe E-A1B2S02 (-fast sync).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

1 1
1 0
U V

T

080
Probe E-A1A5B03 (-control sample).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **081**
> Bad card
> E-A1C2
> ---or---
> E-A1D2
> ---or---
> E-A1F2 (10-160).

082
Probe E-A1D2D06 (+out direction).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **083**
> Switch probe to MST 1,
> Probe E-A1B2U06 (+servo inhibit VCO)
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N

W X Y

084
Switch probe to Multi.
Probe E-A1A5B09 (-missing sector pulse).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **085**
> Check for an open or a short to ground on
> drive A (-fast sync), (read clock), (write clock),
> (-index), and (-sector).   See MAP 1077,
> Dedicated Cable Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **086**
> > Bad card
> > A-A2C2
> > ---or---
> > E-A1B2 (10-160).
>
> **087**
> Exchange the bad card, cable, or board found
> in the preceding step (10-150, 10-160,
> 10-170).

088
Bad card
E-A1D2 (10-160).
---or---
Short to ground on drive A
(-missing sector pulse).   See MAP 1077,
Dedicated Cable Wiring Checks.

089
Bad card
E-A1B2 (10-160)

090
Bad card
E-A1D2 (10-160).

091
Probe E-A1C2J11 (-read).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **092**
> Check for an open or a short to ground on drive A
> (-read). See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **093**
> > Remove cable E-A1A5.
> > -Set Power to 1 (operator panel).
> > Probe E-A1A5D09 (-read).
> >
> > Up   Light: On
> > Down Light: Off
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **094**
> > > Bad card
> > > E-A1C2 (10-160).
> >
> > **095**
> > Bad card
> > A-A2D2
> > ---or---
> > A-A2C2
> > ---or---
> > Bad top card connector
>
> **096**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

097
Probe E-A1B2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **098**
> Probe E-A1C2J12 (+read select).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **099**
> > Bad card
> > E-A1C2
> > ---or---
> > E-A1B2 (10-160).
>
> **100**
> Bad board
> E-A1 (10-170).

101
Probe E-A1C2B05 (-tag 010 CS).

Up   Light: On or flashing
Down Light: On or flashing

Note:
Observe for one minute.
Are the lights correct?
Y N

> **102**
> Bad card
> E-A1C2 (10-160).

Z

1
2
A
A

103
Probe A-A2C2J12 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **104**
> Check for an open or a short to ground on drive A
> (read clock).   See MAP 1077, Dedicated Cable
> Wiring Checks.
> **Was an open or a short found?**
> **Y N**
>
> > **105**
> > Bad card
> > E-A1B2 (10-160)
> > ---or---
> > A-A2C2.
>
> **106**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

107
Switch probe to MST 1,
Probe E-A1A2B03 (-head select A) and E-A1A2B04
(-head select B).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

A A
B C

108
Switch probe to Multi.

Probe E-A1B2P05 (-head select 2) and E-A1B2P07
(-head select 1)

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **109**
> Bad card
> E-A1C2 (10-160).

110
Bad card
E-A1B2 (10-160)
---or---
Bad drive A disk enclosure (10-030).

111
Remove jumper.
Switch probe to Multi.
Probe E-A1A5D04 (-data select).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

> **112**
> Bad card
> A-A2C2.
> ---or---
> Open on drive A (-data select).   See MAP 1077,
> Dedicated Cable Wiring Checks.

1
3
A
D

A
D
1
2

FRU ISOLATION MAP 4

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MAP 1088-13

113
Check for continuity on drive A (-data select),
(-fast sync), (-index), (-sector), (-read),
(read clock), and (+read data).   See MAP 1077,
Dedicated Cable Wiring Checks.
Was an open found?
Y N

   114
   Bad card
   A-A2C2
   ---or---
   E-A1B2 (10-160).
   ---or---
   E-A1C2
   ---or---
   E-A1F2 (10-160)
   ---or---
   Bad drive A disk enclosure (10-030).

115
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	A	1	001
1045	A	1	001
1047	A	1	001
1049	A	1	001
1050	A	1	001
1051	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1057	A	1	001
1071	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-A1F2, Actuator driver card, E-A1D2, E-A1E2, and E-A1C2.

Note:
An open circuit on nets D2-15,D2-16,D2-43 F2-19,F2-24,F2-25,F2-27, and V-05 could cause you to enter this MAP. See netlist tables, MAP 1077.

Is the Actuator Lock Knob on drive A unlocked?
Y N

 002
 Unlock the Actuator and run the disk MAPs again.

2
A

A
1
|

E
|

MAP 1089-2

003
Measure for +5Vdc (-reset bucket):
E-A1E2B07 (neg)
E-A1E2D08 (pos).
Does the CE multimeter read more than 1.8V?
Y N

   004
   Bad jumpers on card E-A1E2
   ---or---
   Bad card
   E-A1E2 (10-160).

005
Probe E-A1D2U07 (-out drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   006
   Probe E-A1D2G08 (-missing sector pulse).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      007
      Probe E-A1D2G04 (-select demod N1).

      Up   Light: On or flashing
      Down Light: On or flashing

      Are the lights correct?
      Y N

6 4 4
B C D E

008
Probe E-A1F2P05 (-select integrator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   009
   Probe E-A1D2S07 (-in drive).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      010
      Jumper E-A1D2M11 (+recalibrate timeout SS) to
      E-A1D2P08.

      Probe E-A1D2S07 (-in drive) and E-A1D2U07
      (-out drive).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         011
         Probe E-A1D2S07 (-in drive) and E-A1D2U07
         (-out drive).

         Up   Light: On or flashing
         Down Light: On or flashing

         Are the lights correct for one of the two lines?
         Y N

4 3 3 3 3
F G H J K

K
2

G H J L M
2 2 2

012
Perform the following in order:

1. Remove jumper E-A1D2M11
   (+recalibrate timeout SS) to E-A1D2P08.
2. Jumper E-A1F2P02 (-power on delay) to E-A1F2P08.
3. Jumper E-A1D2S06 (kick SS) to E-A1D2U08.
4. Remove jumper E-A1F2P02 to E-A1F2P08.
5. Remove jumper E-A1D2S06 to E-A1D2U08.
6. Run the disk drive MAPs to drive A using MDI
   special (99-090):
-Select drive A.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

> **013**
> Pull out card E-A1F2.
> Measure the resistance (1 ohm range)
> from E-A1F2M04 (VCM start) to E-A1F2M05 (VCM
> finish).
> **Is the resistance less than 30 ohms?**
> Y N
>
> > **014**
> > Reinstall card.
> > Bad drive A disk enclosure (10-030).
>
> **015**
> Reinstall card.
> Check for continuity (1 ohm range)
> VC-5D (10-190) to E-A1F2S09.
> **Is the continuity OK?**
> Y N
>
> > **016**
> > Bad board
> > E-A1 (10-170).

L M

017
Check for continuity VC5-D (10-190) to
ground on PDTB1
(5340 Vol. D FSL YA080).
Is the continuity OK?
Y N

> **018**
> Open on drive A DC power cable.

019
Bad card
Actuator coil driver card on drive A
---or---
E-A1F2 (10-160).

020
Remove jumper.
Bad card
E-A1D2 (10-160).

021
Remove jumper.
Bad card
E-A1D2 (10-160).

022
Bad card
E-A1D2 (10-160).

023
Measure for +5Vdc (VCM finish):
E-A1F2M05 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read 1V to 2V?
Y N

> **024**
> Measure for +5Vdc (base NPN out):
> E-A1F2U02 (pos)
> E-A1F2P08 (neg).
> **Does the CE multimeter read less than 0.7V?**
> Y N

4 4 4
N P Q

P Q
3 3

FRU ISOLATION MAP 5

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C D F N R
2 2 2 3

MAP 1089-4

025
Pull out card E-A1F2.

Measure the resistance (1 ohm range) between
E-A1F2M04 (VCM start) and E-A1F2M05 (VCM
finish).
Is the resistance less than 30 ohms?
Y N

> **026**
> Reinstall card E-A1F2.
> Bad drive A disk enclosure (10-030).

027
Reinstall card E-A1F2.
Bad card
Actuator coil driver card on drive A (10-160).

028
Measure for +24Vdc (base PNP out):
E-A1F2M12 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read less than 18V?
Y N

> **029**
> Bad card
> E-A1F2 (10-160).

030
Pull out card E-A1F2.

Measure the resistance (1 ohm range) between
E-A1F2M04 (VCM start) and E-A1F2M05 (VCM finish).
Is the resistance less than 30 ohms?
Y N

> **031**
> Reinstall card E-A1F2.
> Bad drive A disk enclosure (10-030).

R

032
Reinstall card E-A1F2.
Bad card
Actuator coil driver card on drive A
(10-160).

033
Bad card
E-A1F2 (10-160).

034
Bad drive A disk enclosure (10-030).

035
Measure for +5Vdc (VCM finish):
E-A1F2M05 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read more than 3V?
Y N

> **036**
> Bad card
> E-A1E2 (10-160).

037
Bad card
E-A1F2 (10-160).

038
Probe E-A1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

5 5
S T

T
4

039
Probe E-A1F2B12 (+normal error).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    040
    Probe E-A1F2G03 (+coil current low).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

        041
        Probe E-A1D2S07 (-in drive).

        Up   Light: On
        Down Light: Off

        Are the lights correct?
        Y N

            042
            Probe E-A1F2G12 (+on track).

            Up   Light: On
            Down Light: Off

            Are the lights correct?
            Y N

                043
                Bad card
                Actuator coil driver card on drive A
                (10-160).

            044
            Bad card
            E-A1F2 (10-160).

U V W

S U V W
4

045
Measure for +12Vdc (hybrid velocity):
E-A1D2D02 (neg)
E-A1D2D08 (pos).
Does the CE multimeter read more than 6.0V?
Y N

    046
    Bad card
    E-A1F2 (10-160).

047
Bad card
E-A1D2 (10-160).

048
Bad card
E-A1D2 (10-160).

049
Bad card
E-A1D2
---or---
E-A1F2 (10-160).

050
Measure for +24Vdc (VCM finish):
E-A1F2M05 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

    051
    Measure for +5Vdc (VCM start):
    E-A1F2M04 (pos)
    E-A1F2P08 (neg).
    Does the CE multimeter read more than 2V?
    Y N

        052
        Bad card
        E-A1D2 (10-160).

6 6
X Y

053
Bad card
E-A1F2 (10-160).

054
Measure for +5Vdc (VCM start):
E-A1F2M04 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read more than 5V?
Y N

  055
  Probe E-A1D2B03 (+lin reg N of even track).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    056
    Measure for +5Vdc (hybrid velocity):
    E-A1D2D02 (neg)
    E-A1D2D08 (pos).
    Does the CE multimeter read more than 2V?
    Y N

      057
      Bad card
      Actuator coil driver card on drive A (10-160).

    058
    Bad card
    E-A1D2 (10-160).

  059
  Bad card
  E-A1F2 (10-160).

060
Bad card
E-A1D2 (10-160).

061
Probe E-A1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  062
  Probe E-A1F2B03 (+even).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    063
    Bad card
    E-A1F2 (10-160).

  064
  Probe E-A1F2J04 (-bad AGC level).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    065
    Bad card
    E-A1F2 (10-160).

9 7
Z A
   A

066
Switch probe to MST 1,
Probe E-A1E2B09 (-counter G).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

067
Verify probe at MST 1.
Probe E-A1E2B09 (-counter G).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

068
Switch probe to Multi.

Probe E-A1F2G03 (+coil current low).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

069
Probe E-A1D2U04 (+select integrator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

070
Bad jumpers on card E-A1D2
---or---
Bad card
E-A1D2 (10-160).

071
Probe E-A1D2U06 (+servo protect).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

072
Measure for +24Vdc (base PNP in):
E-A1F2U07 (pos)
E-A1F2U08 (neg).
Does the CE multimeter read more than 10.0V?
Y N

073
Bad card
Actuator coil driver card on drive A (10-160).

074
Measure for +5Vdc (handover velocity):
E-A1D2S03 (pos)
E-A1D2U08 (neg).
Does the CE multimeter read less than 0.8V?
Y N

075
Bad card
Actuator coil driver card on drive A
---or---
E-A1F2
---or---
E-A1D2 (10-160).

9   8   8
A   A   A
B   C   D   A   A
            E   F

8   8
A   A
G   H

076
Bad card
Actuator coil driver card on drive A
---or---
E-A1D2 (10-160).

077
Switch probe to MST 1,
Probe E-A1E2J12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **078**
> Bad jumpers on card E-A1E2
> ---or---
> Bad card
> E-A1E2 (10-160).

079
Switch probe to Multi.

Probe E-A1D2B03 (+lin reg N of even track).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **080**
> Bad card
> E-A1E2 (10-160).

081
Bad jumpers on card E-A1D2
---or----
Bad card
E-A1D2 (10-160).

082
Measure for +5Vdc (data PES):
E-A1E2B13 (neg)
E-A1E2B08 (pos).
Does the CE multimeter read more than 4.0V?
Y N

> **083**
> Bad card
> Actuator coil driver card on drive A
> ---or---
> E-A1F2 (10-160).

084
Bad card
E-A1E2 (10-160).

085
Switch probe to Multi.

Probe E-A1F2G03 (+coil current low).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **086**
> Probe E-A1F2S12 (+NSW).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **087**
> > Bad card
> > E-A1D2
> > ---or---
> > E-A1E2
> > ---or---
> > E-A1F2 (10-160).

A A A
B J K
7 8 8

FRU ISOLATION MAP 5

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Z
6

MAP 1089-9

088
Switch probe to MST 1,
Probe E-A1E2B09 (-counter G).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  089
  Bad card
  E-A1E2 (10-160).

090
Bad card
E-A1F2
---or---
E-A1E2 (10-160).

091
Probe E-A1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  092
  Bad card
  E-A1F2 (10-160).

093
Bad card
E-A1E2 (10-160).

094
Bad card
E-A1E2 (10-160).

095
Probe E-A1D2G04 (-select demod N1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  096
  Probe E-A1D2S10 (-sector).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    097
    Bad card
    E-A1D2
    ---or---
    E-A1C2 (10-160).

  098
  Probe E-A1F2G12 (+on track).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    099
    Bad card
    E-A1D2 (10-160).

1 1
1 0
A A
L M

100
Probe E-A1D2U04 (+select integrator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **101**
> Bad card
> E-A1D2 (10-160).

102
Probe E-A1F2S12 (+NSW).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **103**
> Measure for +5Vdc (handover velocity):
> E-A1D2S03 (pos)
> E-A1D2U08 (neg).
> **Does the CE multimeter read more than 1.1V?**
> Y N
>
> > **104**
> > Measure for +5Vdc (CSR in):
> > E-A1F2U05 (pos)
> > E-A1F2U08 (neg).
> > **Does the CE multimeter read more than 1.0V?**
> > Y N
> >
> > > **105**
> > > Bad card
> > > E-A1D2 (10-160).
> >
> > **106**
> > Bad card
> > Actuator coil driver card on drive A (10-160).

A A
N P

107
Probe E-A1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **108**
> Bad card
> E-A1F2 (10-160).

109
Jumper E-A1F2P11 (-in drive) to E-A1F2P08.
Measure for +24Vdc (VCM finish):
E-A1F2M05 (pos)
E-A1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

> **110**
> Bad card
> E-A1E2
> ---or---
> E-A1D2 (10-160).

111
Bad card
Actuator coil driver card on drive A (10-160).

112
Measure the resistance (10 ohm range) of the following:
E-A1F2U05 to E-A1F2U08 (CSR in)
E-A1F2S05 to E-A1F2U08 (CSR out).
Are both resistances less than 10 ohms?
Y N

> **113**
> Bad card
> Actuator coil driver card on drive A (10-160).

FRU ISOLATION MAP 5

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A
R

MAP 1089-11

114
Bad card
E-A1F2
---or---
E-A1D2 (10-160).

115
Probe E-A1F2B03 (+even).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **116**
> Bad card
> E-A1E2 (10-160).

117
Switch probe to MST 1,
Probe E-A1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **118**
> Bad card
> E-A1B2 (10-160)

119
Measure for +5Vdc:
E-A1B2S11 (neg) to E-A1B2U08 (pos)
E-A1B2S12 (neg) to E-A1B2U08 (pos).
Are both voltages more than 0.5V?
Y N

> **120**
> Bad card
> E-A1B2 (10-160)

A
R

121
Switch probe to Multi.
Probe E-A1D2D06 (+out direction)

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **122**
> Bad card
> Actuator coil driver card on drive A
> ---or---
> E-A1F2 (10-160).

123
Bad card
E-A1D2 (10-160).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	B	8	056
1051	A	1	001
1052	A	1	001
1092	A	1	001
1095	A	1	001
1096	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	0511	A
7	048	0511	B
10	069	0511	B
8	055	0583	B
7	051	0583	B
12	087	0583	B
6	030	1080	C
5	028	1091	B
6	031	1091	B
12	088	1092	B
8	057	1094	A

001
(Entry Point A)

Note: Reset the thermal cut-out on the disk B drive motor (10-190) when leaving this MAP.
Check for the following on drive B (10-190):
1. The drive belt is broken or off the pulleys (10-040).
2. Loose parts in or around the drive belt guard (10-040).
3. Loose cable connections to drive motor or brake coil (10-080).

Are all the checks OK?
Y N

002
Repair or exchange as needed.

MAP DESCRIPTION:
This MAP isolates failures that prevent the disk drive from turning or cause the rotational speed to go out of tolerance.

START CONDITIONS:
The disk is not turning or is turning at the wrong speed.

LOGIC CARDS TESTED:
E-B1F2, E-B1D2 and E-B1E2, drive B disk enclosure, cables E-B1A3 and E-B1A5, and drive B motor, belt, and brake.

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2
A

05JAN81   PN 8265721

EC 835086   PEC 834824

MAP 1090-1

A
1

003
-Set Power to 0 (operator panel).
Inspect the disk B drive belt for tension and general
condition (10-190).
**Is the drive belt in good condition and is tension
correct?**
Y N

> **004**
> Align the drive belt and check the tension (10-190).
> Exchange the drive belt if it is in poor condition
> (10-040).

005
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Disconnect +brake applied PDTB1 pin E12 (05-220,
05-360).
Wait 10 seconds, and then reconnect the pin.
Is the drive belt turning?
Y N

> **006**
> Jumper E-B1D2G10 (brake coil drive) to E-B1D2D08
> Remove the drive belt guard and turn the disk B
> drive motor pulley clockwise by hand to test for
> binds or brake on.
>
> **Is the motor free to turn?**
> Y N
>
>> **007**
>> Inspect the drive B brake assembly (10-190).
>> **Is the brake pad clear of the spindle pulley?**
>> Y N
>>
>>> **008**
>>> Measure for +24Vdc on the drive B brake coil:
>>> 1. Brake coil terminal 1 to ground.
>>> 2. Brake coil terminal 2 to ground.
>>> **Are they both more than 20V?**
>>> Y N

CAUTION
Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
miminum. Failure to do so may result in damage to the
disk enclosure.

8   5   4   4   3
B   C   D   E   F

009
Is either one of them more than 20V?
Y N

   010
   Remove jumper.
   Check for continuity between brake coil terminal 2
   and VC3-B (10-190).
   Is the continuity OK?
   Y N

      011
      Repair the cable between VC3 and the brake coil
      terminal 2.
      Reinstall the drive belt guard.

   012
   Check for continuity between the VC3-B and the
   VC5-B on E-B1 board (10-190).
   Is the continuity OK?
   Y N

      013
      Reinstall the drive belt guard.
      Bad board
      E-B1 (10-170).

   014
   Check for continuity between the PDTB1 pin 14 and
   the VC5-B (10-190).
   Is the continuity OK?
   Y N

      015
      Reinstall the drive belt guard.
      Repair or exchange the DC supply cable to disk
      drive B.

   016
   Reinstall the drive belt guard.
   Go To Map 0511, Entry Point A.

4
G

D E G
2 2 3

SPEED FAILURE MAP.

5340 SYSTEMS UNIT

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MAP 1090-4

017

Remove all jumpers.

The problem is an open circuit brake coil.

Repair or exchange as needed (10-110).

018

Remove all jumpers.

Jumper E-B1D2P07 (+brake applied) to E-B1D2P08.

Measure for +24Vdc between E-B1D2G10 (brake coil drive) and ground.

Does the CE multimeter read more than 20V?

Y N

> **019**
>
> Remove jumper.
>
> Check for continuity between the VC3-A and the brake coil terminal 1 (10-190).
>
> **Is the continuity OK?**
>
> Y N
>
> > **020**
> >
> > Repair the cable between the VC3-A and the brake coil terminal 1.
> >
> > Reinstall the drive belt guard.
>
> **021**
>
> Reinstall the drive belt guard.
>
> Bad board
>
> E-B1 (10-170).

022

Remove all jumpers.

Bad drive B brake magnet assembly (10-110).

023

Remove the drive belt on drive B by tilting the drive motor upward.

Turn the drive B disk spindle pulley clockwise by hand to test for binds.

Is the disk spindle free to turn?

Y N

5 5
H J

CAUTION

Observe the rotation arrow shown on the belt guard cover and keep the rotation of the spindle to a miminum. Failure to do so may result in damage to the disk enclosure.

C H J
2 4 4

SPEED FAILURE MAP.

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MAP 1090-5

024
Remove jumper.
Bad drive B disk enclosure (10-030).

025
Remove jumper.
Bad disk B drive motor (10-100).

026
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Reset the thermal cut-out on the disk drive B motor
(10-190).
Jumper E-B1D2G11 (+brake applied to system) to
E-B1D2J08.
-Set Power to 1 (operator panel).
Wait for 2 to 3 minutes and then observe the drive
motor (see note).
Is the disk B drive motor turning?
Y N

> **027**
> Jumper E-A1D2G10 (brake coil drive) to
> E-A1D2D08.
> Remove the drive belt guard and turn the disk A
> drive motor pulley clockwise by hand to test for
> binds or brake on.
> **Is the motor free to turn?**
> **Y N**
>
> > **028**
> > Remove all jumpers.
> > Reinstall the drive belt guard.
> > **Go To Map 1091, Entry Point B.**

Note: Disk drive brake has been jumpered open, so if
drive motor is powered off disk will coast to stop. This
can take up to 3 minutes.

CAUTION
Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
miminum. Failure to do so may result in damage to the
disk enclosure.

6 6
K L

SPEED FAILURE MAP.

5340 SYSTEMS UNIT

029
-Set Power to 0 (operator panel).
-Reset the thermal cut out on the disk A drive motor
(10-190).
Reinstall the drive belt guard.
Jumper E-A1D2G11 (+brake applied to system) to
E-A1D2J08.
-Set Power to 1 (operator panel).
Observe the drive belt for drives A and B.
Are both disks turning?
Y N

> **030**
> **Go To Map 1080, Entry Point C.**

031
Remove all jumpers.
Go To Map 1091, Entry Point B.

032
Switch probe to Multi.
Probe E-B1D2G07 (+counter 5 in sync).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **033**
> Probe E-B1D2B13 (-osc early).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**

034
Probe E-B1D2J02 (-osc late).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **035**
> Remove all jumpers.
> Bad card
> E-B1D2
> ---or---
> E-B1E2 (10-160).

036
Remove all jumpers.
Bad card
E-B1E2
---or---
E-B1F2 (10-160)
---or---
Bad drive B disk enclosure (10-030).

037
Remove the card E-B1F2.
Measure the resistance between pins E-B1F2J05 (clock
threshold) and E-B1F2D08.
Is the resistance less than 50 ohms?
Y N

> **038**
> Reinstall card E-B1F2.
> Jumper E-B1F2P02 (-power on delay) to E-B1F2P08.
> -Set Power to 1 (operator panel).
> Remove jumper on E-B1F2P02.
> Run the disk drive MAPs to drive B using MDI
> special (99-090), and return to this step after the
> MAPs stop.
> -Select drive B.
> -Enter 1040 001 for the starting MAP.
> (Step 038 continues)

(Step 038 continued)
Did disk MAPs run without errors?
Y N

> **039**
> Remove all jumpers.
> Bad card
> E-B1D2 (10-160).

> **040**
> Remove all jumpers.
> Bad card
> E-B1F2 (10-160).

041
Remove all jumpers.
Bad drive B disk enclosure (10-030).

042
Run the disk drive MAPs to drive B using MDI special
(99-090), and return to this step after the MAPs stop.
-Select drive B.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

> **043**
> -Set Power to 0 (operator panel).
> Remove all jumpers.
> Jumper E-B1F2P02 (-power on delay) to E-B1F2P08.
>
> -Set Power to 1 (operator panel).
>
> Disconnect +brake applied PDTB1 pin E12 (05-220).
> Wait 10 seconds, and then reconnect the pin.
> Wait for 2 minutes and then observe the drive
> motor.
> **Is the drive belt turning?**
> Y N
>
> > **044**
> > Inspect the drive B brake assembly (10-190).
> > **Is the brake pad clear of the spindle pulley?**
> > Y N

8
R S T U

045
Remove jumper.
Bad card
E-B1D2 (10-160).

046
Remove jumper.
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Using the TU Select option (99-065), select drive B
and loop on TA166 for 5 minutes and observe if the
result bytes are always X'0000'.
Are the result bytes always X'0000'?
Y N

> **047**
> Measure for 240Vac at disk B drive motor ACTB
> and observe for one minute (10-190).
> **Is voltage always between 175V and 259V?**
> Y N
>
> > **048**
> > **Go To Map 0511, Entry Point B.**
>
> **049**
> Check for loose or wrong connections at the disk
> B drive motor ACTB.
> If the connections are OK exchange disk B drive
> motor (10-080, 10-100).

050
Suspect a bad drive motor thermal cut-out, or
thermal cut-out was not reset after preceding failure
(10-190).

051
Remove all jumpers.
Go To Map 0583, Entry Point B.

052
-Set Power to 0 (operator panel).
Remove all jumpers.
Probe E-B1F2P02 (-power on delay).

Power On and observe CE probe.
Is the line down for approximately 15 to 20 seconds?
Y N

> **053**
> Bad card
> E-B1F2 (10-160).

054
Bad card
E-B1D2 (10-160).

055
Reinstall the drive belt guard.
Go To Map 0583, Entry Point B.

056
(Entry Point B)

Measure for +24Vdc:
E-B1F2G02 (pos)
E-B1F2J08 (neg).
Does the CE multimeter read between 21.6V and 26.4V?
Y N

> **057**
> **Go To Map 1094, Entry Point A.**

058
Probe E-B1A5D07 (-index).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **059**
> Probe E-B1D2S13 (-index).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **060**
> > Probe E-B1D2P02 (missing clocks/2).
> >
> > Up   Light: On or flashing
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > Y N

9 9 9 9
V W X Y

```
V W X Y
8 8 8 8
```
SPEED FAILURE MAP.

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MAP 1090-9

061
Bad card
E-B1D2
---or---
E-B1F2 (10-160).

062
Bad card
E-B1D2 (10-160).

063
Bad board
E-B1 (10-170).

064
-Set Power to 0 (operator panel).

Check continuity from E-B1A5D07 (-index) to A-A2B6D02.
Is the continuity OK?
Y N

   065
   Bad cable.
   E-B1A5 (10-150).

066
Check the condition and the tension of drive belt (10-190).
Is the belt OK?
Y N

   067
   Repair as necessary (10-040).

068
-Set Power to 1 (operator panel).

Measure for 240Vac on the disk B drive motor assembly ACTB terminals.
Is voltage between 175V and 259V?
Y N

```
1   1
0   0
Z   A
1   A
```

069

Go To Map 0511, Entry Point B.

070

Check the configuration jumpers on card A-A2D2
(10-210).

Are the jumpers correct?

Y N

> **071**
>
> Install the jumpers correctly and run the disk MAPs
> again.

072

Is an oscilloscope available?

Y N

> **073**
>
> -Set Power to 0 (operator panel).
> -Set Power to 1 (operator panel).
> Wait 30 seconds, and then press Reset (CE panel).
> Disconnect +brake applied PDTB1 pin E12 (05-220,
> 05-360).
> Wait 10 seconds, and then reconnect the pin.
>
> **Is the drive belt turning?**
>
> Y N
>
> > **074**
> >
> > Jumper E-B1D2G10 (brake coil drive) to
> > E-B1D2D08
> > Remove the drive belt guard and turn the disk B
> > drive motor pulley clockwise by hand to test for
> > binds or brake on.
> >
> > **Is the motor free to turn?**
> >
> > Y N
> >
> > > **075**
> > >
> > > Inspect the drive B brake assembly (10-190).
> > >
> > > **Is the brake pad clear of the spindle pulley?**
> > >
> > > Y N

CAUTION

Observe the rotation arrow shown on the belt guard
cover and keep the rotation of the spindle to a
mimimum. Failure to do so may result in damage to the
disk enclosure.

```
1  1  1  1  1
2  2  1  1  1
A  A  A  A  A
B  C  D  E  F
```

A A A
D E F
1 1 1
0 0 0

SPEED FAILURE MAP.

5340 SYSTEMS UNIT

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A
H

MAP 1090-11

076
Remove jumper.
Drive B brake needs adjustment (10-190).
---or---
Bad drive B brake magnet assembly (10-110).

077
Remove the drive belt on drive B by tilting the drive motor upward.
Turn the drive B disk spindle pulley clockwise by hand to test for binds.
Is the disk spindle free to turn?
Y N

　　078
　　Remove jumper.
　　Bad drive B disk enclosure (10-030).

079
Remove all jumpers.
Bad disk B drive motor (10-100).

080
-Set Power to 0 (operator panel).
Reinstall the drive belt guard.
Jumper E-B1D2G11 (+brake applied to system) to E-B1D2J08.
-Set Power to 1 (operator panel).
Wait for 30 seconds.
Probe E-B1D2G07 (+counter 5 in sync).

Up　　Light: On
Down Light: Off

Are the lights correct?
Y N

081
Probe E-B1D2B13 (-osc early).

Up　　Light: On
Down Light: Off

Are the lights correct?
Y N

　　082
　　Probe E-B1D2J02 (-osc late).

　　Up　　Light: On or flashing
　　Down Light: On or flashing

　　Are the lights correct?
　　Y N

　　　　083
　　　　Remove all jumpers.
　　　　Bad card
　　　　E-B1D2
　　　　---or---
　　　　E-B1E2 (10-160).

　　084
　　Remove jumper.
　　Bad card
　　E-B1E2 (10-160).

085
Remove all jumpers.
Bad card
E-B1D2
---or---
E-B1F2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

1
2
A A
G H

```
A   A   A
B   C   G
1   1   1
0   0   1
```

086
Remove all jumpers.
Bad card
E-B1F2
---or---
E-B1D2
---or---
A-A2C2 (10-160)
---or---
Bad disk B drive motor (10-100).

087
Go To Map 0583, Entry Point B.

088
Go To Map 1092, Entry Point B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1011	A	1	001
1016	B	4	030
1040	A	1	001
1040	B	4	030
1041	A	1	001
1044	A	1	001
1051	A	1	001
1090	B	4	030

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	1094	A

001
(Entry Point A)
Measure the following voltages:

Voltage	Range	Pin
+5Vdc	4.4V to 5.6V	E-B1D2D03
+24Vdc	21.6V to 26.4V	E-B1F2G02
-4Vdc	3.5V to 4.5V	E-B1F2B06

MAP DESCRIPTION:
This MAP isolates failures causing no communication between the disk and the common adapter.

START CONDITIONS:
The disk does not respond to common adapter commands.

LOGIC CARDS TESTED:
E-B1C2, E-B1F2, E-B1D2, cables E-B1A3 and E-B1A5, and the system power supply.

NOTE:
An open circuit on nets A5-01, VC-01, and V-01 could cause you to enter this MAP. See netlist tables, MAP 1077.

Are the voltages within range?
Y N

 002
 Go To Map 1094, Entry Point A.

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2
A

13JUL79   PN 8265722

EC 834824   PEC 833180

MAP 1091-1

003
Probe E-B1F2G10 (-power good).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **004**
> Remove the card E-B1F2.
>
> -Set Power to 1 (operator panel).
>
> Probe E-B1F2G10 (-power good).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Measure for +5Vdc on PDTB1 pin E11 (05-220).
> > **Does the CE multimeter read less than 0.5V?**
> > Y N
> >
> > > **006**
> > > Check for continuity of -power good 5340 Vol.
> > > D FSL YA080.
> > > **Is the continuity OK?**
> > > Y N
> > >
> > > > **007**
> > > > Exchange the bad card, cable, or board
> > > > found in the preceding step (10-150,
> > > > 10-160, 10-170).
> > >
> > > **008**
> > > Bad card C-A1B2.
> >
> > **009**
> > Bad drive B DC power cable.

B C

010
Reset the thermal cut-out on the disk drive B motor
(10-190).
Bad card
E-B1F2 (10-160).

011
Probe E-B1F2P09 (-power good delayed).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **012**
> Reset the thermal cut-out on the disk drive B motor
> (10-190).
> Bad card
> E-B1F2 (10-160).

013
Probe E-B1F2P02 (-power on delay).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **014**
> Bad card
> E-B1F2 (10-160).

015
Probe E-B1C2B03 (+interface degate).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

3 3
D E

016
Check for continuity of the drive B (+interface degate
) line.   See MAP 1077, Dedicated Cable Wiring
Checks.
Was an open found?
Y N

  017
  Bad card
  A-A2D2.

018
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

019
Check for continuity of the drive B -control sample line
and the -control sample received line. See MAP 1077,
Dedicated Cable Wiring Checks and Bus Cable Wiring
Checks.
Was an open found?
Y N

  020
  Using the TU Select option (99-064), select drive B
  and loop on TA16A.
  Probe E-B1A5B03 (-control sample).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    021
    Probe E-B1A5B03 (-control sample).

    Up   Light: Off
    Down Light: On or flashing

    Are the lights correct?
    Y N

  022
  Bad card
  A-A2D2.

023
Bad card
E-B1C2 (10-160).

024
Probe A-A2A5B12 (-control sample received).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  025
  Probe E-B1A3B12 (-control sample received).

  Up   Light: Off
  Down Light: On or flashing

  Are the lights correct?
  Y N

    026
    Bad card
    E-B1C2 (10-160).

  027
  Bad terminator card, E-B1A4 (10-140).

028
Bad card
A-A2D2.

029
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

030
(Entry Point B)
-Set Power to 0 (operator panel).
-Set Power to 1 (operator panel).
Run the disk drive MAPs to drive B using MDI special
(99-090):
-Select drive A.
-Enter 1040 001 for the starting MAP.
Follow the directions given in the MDI MAPs.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1063	A	1	001
1090	B	5	030

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
5	033	1090	A
5	038	1090	A
6	043	1090	A
6	046	1090	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (10X range) between the following points:
1. E-B1F2M12 (pos) and E-B1F2G02 (neg).
2. E-B1F2U07 (pos) and E-B1F2G02 (neg).
3. E-B1F2U08 (pos) and E-B1F2U04 (neg).
4. E-B1F2U08 (pos) and E-B1F2U02 (neg).

Are all the resistances in the range from 160 ohms to 260 ohms?
Y N

> **002**
> Bad card
> Actuator coil driver card on drive B (10-160).

003
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Measure for +5Vdc:
E-B1E2D02 (pos) to E-B1E2D08 (neg)
E-B1E2B03 (pos) to E-B1E2D08 (neg).
Are both voltages more than 3.0V?
Y N

MAP DESCRIPTION:
This MAP isolates data unsafe problems caused by sample servo failures.

START CONDITIONS:
This MAP is entered when an oscilloscope is needed for FRU isolation.

LOGIC CARDS TESTED:
E-B1D2, actuator driver card, E-B1B2, E-B1E2, and E-B1C2.

2 2
A B

004
Bad card
E-B1E2 (10-160).

005
If an oscilloscope is available, further FRU isolation is possible.
Is an oscilloscope available?
Y N

 006
 Bad card
 E-B1E2
 ---or---
 E-B1B2
 ---or---
 E-B1D2
 ---or---
 E-B1C2
 ---or---
 actuator coil driver card on drive B (10-160).
 ---or---
 E-B1F2
 ---or---
 Bad drive B disk enclosure (10-030).

007
Using the TU Select option, select Drive B and execute TA169.

Use 1X probes.
Place the oscilloscope channel 1 probe on E-B1D2J09 (+shift reg clock).
Place the oscilloscope channel 2 probe on E-B1D2J10 (+enable sample servo).
Place the oscilloscope Ext. Trig probe on E-B1D2S10 (-sector).
Set oscilloscope controls as shown in table.

(Step 007 continues)

(Step 007 continued)

```
.-----------------------------.
| Horiz Display  | A           |
| Mag            | Off         |
| A Sweep Length | Full        |
| A Time Base    | 5us/div     |
| Mode           | Alt         |
| Trigger Source | Ext         |
| Ch 1 Volts/div | 2v/div      |
| Ch 2 Volts/div | 2v/div      |
| A Sweep Mode   | Normal Trig |
| A Trig Slope   | -           |
| A Trig Coupling| AC          |
| Trig           | Normal      |
| A Trig Level   | 0           |
| A Trig HF Stab | 0           |
| Invert         | In          |
.-----------------------------.
```

Set the Input Chan 1 switch to the Gnd position and adjust the position of the trace to the center line of the screen.
Set the Input Chan 1 switch to the DC position.
Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.
Set the Input Chan 2 switch to the DC position.
Adjust the A triggering level to display trace.
Adjust the Horizontal position to start the trace at the left-hand line.
Is the display the same as in 10-400?
Y N

 008
 Bad card
 E-B1D2 (10-160).

05JAN80   PN 8265723

EC 835086   PEC 834926

3
C

MAP 1092-2

009

Move the Chan 2 probe to E-B1D2U13 (+enable mark detect).

Set the Mode switch to the Chan 2 position.

Is the display the same as in 10-410?

Y N

> **010**
> Bad card
> E-B1D2 (10-160).

011

Move the Chan 1 probe to E-B1E2B03 (buffered analog data A).

Set the Chan 1 V/Div to the 20mV position.

Set the Mode switch to the Chan 1 position.

Set the Input Chan 1 switch to the AC position.

Compare servo gain field in 10-430 with display.

Is the servo gain field correct?

Y N

> **012**
> Bad card
> E-B1B2 (10-160).
> ---or---
> Bad drive B disk enclosure (10-030).
> ---or---
> E-B1F2

013

Move the Chan 2 probe to E-B1E2D02 (buffered analog data B).

Set the Chan 2 V/Div to the 20mV position.

Set the Input Chan 2 switch to the Gnd position and adjust the position of the trace to the bottom line of the screen.

Set the Input Chan 2 switch to the AC position.

Set the Mode switch to the Chan 2 position.

Pull the Invert switch.

Compare servo gain field in 10-430 with display.

Is the servo gain field correct?

Y N

D E

014

Bad card
E-B1B2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

015

Move the Chan 1 probe to E-B1E2G03 (+servo inhibit VCO).

Set the Mode switch to the Chan 1 position.

Set the Chan 1 V/Div switch to 1V.

Is the display the same as in 10-420?

Y N

> **016**
> **Is the display the same as in 10-460?**
> Y N
>
> > **017**
> > Move the Chan 1 probe to E-B1E2J05 (-counter run).
> > **Is the display the same as in 10-470?**
> > Y N
> >
> > > **018**
> > > Bad card
> > > E-B1E2 (10-160).
> >
> > **019**
> > Bad card
> > E-B1B2 (10-160).

020

Bad card
E-B1E2 (10-160).

4
F

021
Move the Chan 1 probe to E-B1E2G08 (data servo 2F burst).
Set the Mode switch to the Chan 1 position.
Set the Input Chan 1 switch to the DC position.
Set the Chan 1 V/Div switch to 1V.
Is the display the same as in 10-440?
Y N

> **022**
> **Is display a valid MST1 level (-0.8V to -1.8V)?**
> Y N
>
> > **023**
> > Bad card
> > E-B1E2 (10-160).
>
> **024**
> Bad card
> E-B1B2 (10-160).

025
Move the Chan 1 probe to E-B1E2B13 (data PES).
Set A time base to 2ms.
Move the Ext Trig probe to E-B1D2S13 (-index).
Adjust the A triggering level to display trace.
Does the display compare with 10-450?
Y N

> **026**
> Bad card
> E-B1E2 (10-160).

027
Probe
E-B1E2J13 (+off data track).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

G H

028
Bad card
E-B1E2 (10-160).
---or---
actuator coil driver card on drive B (10-160).

029
Bad card
E-B1C2 (10-160).
---or---
actuator coil driver card on drive B (10-160).

K L

MAP 1092-5

030
(Entry Point B)

This MAP checks the disk speed by measuring the time between index pulses.
Index pulses should be 18.6 to 19.8 milliseconds apart.
Place the oscilloscope probe on E-B1D2S13 (-index).
Set oscilloscope controls as shown in table.

```
.---------------------------------.
| B Sweep Mode      | B starts after|
|                   |   time delay  |
| Horiz Display     | A             |
| Mag               | Off           |
| A Sweep Length    | Full          |
| A Time Base       | 2ms/div       |
| Mode              | Ch 1          |
| Trigger           | Ch 1 only     |
| Ch 1 Volts/div    | 2 (X1 probe)  |
| A Sweep Mode      | Auto Trig     |
| A Trig Slope      | -             |
| A Trig Coupling   | AC            |
| Trig Source       | Int           |
| A Trig Level      | 0             |
| A Trig HF Stab    | 0             |
 ----------------------------------
```

Set the Input Chan 1 switch to the Gnd position and adjust the position of the trace to the center line of the screen.
Set the Input Chan 1 switch to the DC position.
Adjust the Horiz position until the first pulse is on the left division.
Is the second pulse between 18.6ms and 19.8ms after first pulse?
Y N

> **031**
> **Has this machine just been installed?**
> Y N

6
J K L

032
Is the pulse early?
Y N

> **033**
> Disk speed too slow.
> **Go To Map 1090, Entry Point A.**

034
Bad card
E-B1D2 (10-160).

035
Check for correct motor rating (voltage and hertz) on drive B.
Are both correct?
Y N

> **036**
> Exchange the incorrect part and run the disk MAPs again to verify that the disk is working correctly.

037
Is the pulse early?
Y N

> **038**
> Disk speed too slow.
> **Go To Map 1090, Entry Point A.**

039
Bad card
E-B1D2 (10-160).

040
Switch the B time base to 0.2ms.
Switch the Horiz display to A Inten during B.
Adjust the Delay time multiplier until the right-hand division of the trace is intensified.
Switch the Horiz display to delayed sweep (B).
Is the pulse between 0.6ms and 1.8ms from start of trace?
Y N

    041
    Is the pulse after 1.8ms from start of trace?
    Y N

        042
        Bad card
        E-B1D2 (10-160).

    043
    Disk speed too slow.
    Go To Map 1090, Entry Point A.

044
Does the pulse timing change?
Y N

    045
    Bad card
    A-A2C2
    ---or---
    A-A2D2
    ---or---
    Bad top card connector

046
Disk speed is changing.
Go To Map 1090, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0519	B	3	008
1049	A	1	001
1052	A	1	001
1064	A	1	001
1090	A	1	001
1091	A	1	001
1096	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	0511	A

001
(Entry Point A)

Check the system power supply at PDTB1 for correct voltages. (5340 Vol. D FSL YA080).

Voltage	Range			Pin
+5Vdc	4.4V	to	5.6V	1
-4Vdc	3.5V	to	4.5V	7
+12Vdc	10.5V	to	13.5V	3
-12Vdc	10.5V	to	13.5V	4
+24Vdc	21.6V	to	26.4V	15

Are the supply voltages in tolerance?
Y N

> **002**
> System power supply failure.
> **Go To Map 0511, Entry Point A.**

MAP DESCRIPTION:
This MAP isolates disk power supply problems.

START CONDITIONS:
This MAP is entered from other disk FRU isolation MAPs when there is a power problem on the disk.

LOGIC CARDS TESTED:
E-B1B2, E-B1C2, E-B1D2, E-B1E2, E-B1F2, actuator driver card, board E-B1, and the disk DC power cable.

2
A

003
Measure the following voltages on the E-B1 board:

```
 +5Vdc  E-B1F2D03
 -4Vdc  E-B1F2B06
+12Vdc  E-B1F2B11
-12Vdc  E-B1F2D12
+24Vdc  E-B1F2G02
```

Are the voltage measurements correct?
Y N

004
Measure voltages at board E-B1 crossover cables
(10-190):

```
 +5Vdc  VC2-C  and  VC4-C
 -4Vdc  VC2-B  and  VC4-B
+12Vdc  VC1-C
-12Vdc  VC1-D
+24Vdc  VC5-C
```
Are the voltage measurements correct?
Y N

005
Repair or exchange the drive B DC power cable.

006
Bad board
E-B1 (10-170).
The netlist tables in MAP 1077 may be used to
correct the net on board E-B1.

007
Bad board
E-B1 (10-170).
The netlist tables in MAP 1077 may be used to correct
the net on board E-B1.

008
(Entry Point B)
Jumper the following lines:

E-B1D2G10 (brake coil drive) to E-B1D2J08.
E-B1D2G11 (+brake applied to system) to E-B1C2J08.

Pull out cards:

E-B1B2, E-B1C2, E-B1D2, E-B1E2, and E-B1F2.

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel) and
remember the lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 On?
Y N

> **009**
> Reinstall cards E-B1B2, E-B1C2, E-B1D2, E-B1E2,
> and E-B1F2 one at a time, set the power switch on,
> and press the Dply Pwr Chk switch (CE panel).
> If the display light bit 1 byte 0 (CE panel) is on, then
> the card that was just installed is bad. Repeat the
> procedure until the bad card is isolated (See Note).
>
> Remove all jumpers.

010
Disconnect the actuator driver card crossover cables
VC7, VC8, and VC10 (10-190).

-Set Power to 1 (operator panel).

Press the Dply Pwr Chk switch (CE panel), and note the
lights that are on in byte 0 (CE panel).
Is the Display light bit 1 byte 0 on?
Y N

> **011**
> Remove all jumpers.
> Bad card
> Actuator coil driver card on drive B (10-160).

Note: The display light bit 1 byte 0 (CE panel) is on if a
power supply over current check has occurred.

4
B

05JAN81   PN 8265724

EC 835086   PEC 834824

MAP 1094-3

B
3

012
Disconnect all remaining board E-B1 crossover cables
(10-190).
Check for short to ground at the following pins:

```
 +5Vdc  E-B1F2D03
 -4Vdc  E-B1F2B06
+12Vdc  E-B1F2B11
-12Vdc  E-B1F2D12
+24Vdc  E-B1F2G02
```

Do any pins have a short circuit to ground?
Y N

> **013**
> Remove all jumpers.
> Repair or exchange the drive B DC power cable.

014
Remove all jumpers.
Bad board
E-B1 (10-170).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	B	3	004
1045	B	3	004
1046	A	1	001
1046	B	3	004
1047	B	3	004
1048	B	3	004
1048	C	11	093
1050	B	3	004
1050	E	13	105
1052	B	3	004
1053	B	3	004
1053	D	12	096
1054	B	3	004
1055	B	3	004
1056	B	3	004
1070	B	3	004
1071	B	3	004
1071	C	11	093

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	008	1090	A

001
(Entry Point A)

-Set Power to 0 (operator panel).
Measure the resistance (1 ohm range)
E-B1F2S05 (CSR out) to E-B1F2U08.

Is the resistance less than 10 ohms?
Y N
```
| |
| |
| |
| |
2 2
A B
```

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MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-B1C2, E-B1D2, E-B1E2, E-B1F2, and the actuator driver card on board E-B1, and the disk enclosure for disk drive B.

Note: An open circuit on net F2-23 could cause you to enter this MAP. See netlist tables, MAP 1077.

002
Bad card
Actuator coil driver card on drive B (10-160).

003
Bad card
E-B1F2 (10-160).

004
(Entry Point B)

Is the Actuator Lock Knob on drive B unlocked?
Y N

> **005**
> Unlock the Actuator and run the disk MAPs again.

006
Observe the drive belt.

Note:
An open circuit on the following nets C2-09, C2-11,
D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18,
F2-21, F2-24, AND F2-28 could cause you to enter this
MAP. See netlist tables, MAP 1077.

Is the drive belt turning?
Y N

> **007**
> -Set Power to 0 (operator panel).
> -Set Power to 1 (operator panel).
> Wait 30 seconds, and then press Reset (CE panel).
> **Is the drive belt turning?**
> Y N
>
> > **008**
> > **Go To Map 1090, Entry Point A.**
>
> **009**
> Run the disk drive MAPs to drive B using MDI
> special (99-090):
> -Select drive B.
> -Enter 1040 001 for the starting MAP.
> Wait for the MDI MAPs to stop.
> **Go to Page 4, Step 010, Entry Point F.**

4
C

010
(Entry Point F)

Note: Damage to the actuator in the disk enclosure can cause you to enter this MAP.
Probe E-B1C2J05 (+out).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **011**
> Probe E-B1C2U06 (-abs track address 1).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**
>
> > **012**
> > Probe E-B1C2U06 (-abs track address 1).
> >
> > Up   Light: On or flashing
> > Down Light: On or flashing
> >
> > **Are the lights correct?**
> > **Y N**
> >
> > > **013**
> > > Probe E-B1D2G13 (+normal error).
> > >
> > > Up   Light: On or flashing
> > > Down Light: On or flashing
> > >
> > > **Are the lights correct?**
> > > **Y N**

```
6 6 5 5
D E F G H
```

014
Measure for +5Vdc (+Q/2 error):
E-B1D2J07 (pos)
E-B1D2J08 (neg).
Does the CE multimeter read -0.1V to +0.6V?
Y N

> **015**
> Bad card
> E-B1F2 (10-160).

016
Probe E-B1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **017**
> Probe E-B1D2M08 (-calibration address).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**
>
> > **018**
> > Bad card
> > E-B1D2
> > ---or---
> > E-B1F2 (10-160).

019
Jumper E-B1F2P11 (-in drive) to E-B1F2P08.
Measure for +24Vdc:
E-B1F2M04 (pos) to E-B1F2P08 (neg)
E-B1F2M05 (pos) to E-B1F2P08 (neg).
Are both the voltages greater than 20V?
Y N

```
5 5 5
J K L
```

G J K L
4 4 4 4

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

PAGE 5 OF 13

F
4

MAP 1095-5

020
Remove jumper.
Bad card
E-B1C2
---or---
E-B1F2 (10-160).

021
Remove jumper.
Bad card
Actuator coil driver card on drive B (10-160).

022
Probe E-B1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **023**
> Bad card
> E-B1C2
> ---or---
> E-B1D2 (10-160).

024
Bad card
E-B1D2
---or---
E-B1F2 (10-160).

025
Bad card
E-B1D2
---or---
E-B1C2 (10-160).

026
Probe E-B1D2M08 (-calibration address).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **027**
> Probe E-B1C2S05 (-count down 2 tracks).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **028**
> > Bad card
> > E-B1C2 (10-160).
>
> **029**
> Bad card
> E-B1F2 (10-160).

030
Probe E-B1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **031**
> Probe E-B1C2D13 (+behind home).
>
> Up   Light: Off
> Down Light: On
>
> **Are the lights correct?**
> Y N

6 6 6
M N P

```
E  M  N  P
4  5  5  5
```

032
Bad card
E-B1F2 (10-160).

033
Bad card
E-B1D2 (10-160).

034
Probe E-B1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    035
    Bad card
    E-B1D2
    ---or---
    E-B1C2 (10-160).

036
Bad card
E-B1C2 (10-160).

037
Probe E-B1D2G13 (+normal error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    038
    Bad card
    E-B1D2 (10-160).

Q

```
D  Q
4
```

039
Probe E-B1D2D05 (-count up 2 tracks).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

    040
    Bad card
    E-B1F2 (10-160).

041
Bad card
E-B1D2 (10-160).

042
Probe E-B1C2U06 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    043
    Probe E-B1D2U11 (+behind home).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

        044
        Probe E-B1C2D13 (+behind home).

        Up   Light: Off
        Down Light: On

        Are the lights correct?
        Y N

```
8  7  7  7
R  S  T  U
```

045
Probe E-B1D2B05 (-abs track address 1).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

 046
 Measure for +5Vdc (coil current signal):
 E-B1D2B09 (pos)
 E-B1D2D08 (neg).
 Does the CE multimeter read +0.3V to -0.3V?
 Y N

  047
  Measure for -5Vdc (coil current signal):
  E-B1D2B09 (pos)
  E-B1D2D08 (neg).
  Does the CE multimeter read -0.3V to -4.5V?
  Y N

   048
   Bad card
   Actuator coil driver card on drive B (10-160).

  049
  Bad card
  E-B1F2 (10-160).

 050
 Measure for +24Vdc (base PNP in):
 E-B1F2U07 (pos)
 E-B1F2P08 (neg).
 Does the CE multimeter read more than 10V?
 Y N

  051
  Bad card
  Actuator coil driver card on drive B (10-160).

052
Bad card
E-B1C2
---or---
E-B1D2
---or---
E-B1F2 (10-160).

053
Bad card
E-B1D2 (10-160).

054
Bad card
E-B1F2 (10-160).

055
Probe E-B1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

 056
 Probe E-B1C2D13 (+behind home).

 Up   Light: Off
 Down Light: On

 Are the lights correct?
 Y N

  057
  Measure for +5Vdc (-N/2 error):
  E-B1F2M08 (pos)
  E-B1F2P08 (neg).
  Does the CE multimeter read -0.3 to +0.3V?
  Y N

   058
   Bad card
   E-B1F2 (10-160).

V W

8 8 8
X Y Z

Y Z
7 7

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

PAGE 8 OF 13

R X A A A
6 7 A B C

MAP 1095-8

059
Bad card
Actuator coil driver card on drive B (10-160).

060
Probe E-B1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   061
   Probe E-B1D2B05 (-abs track address 1)

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

      062
      Measure for +5Vdc (coil current signal):
      E-B1D2B09 (pos)
      E-B1D2D08 (neg).
      Does the CE multimeter read -0.3V to +0.3V?
      Y N

         063
         Bad card
         Actuator coil driver card on drive B (10-160).

      064
      Measure for +24Vdc (base PNP in):
      E-B1F2U07 (pos)
      E-B1F2P08 (neg).
      Does the CE multimeter read more than 10V?
      Y N

         065
         Bad card
         Actuator coil driver card on drive B (10-160).

066
Bad card
E-B1F2 (10-160).

067
Bad card
E-B1D2 (10-160).

068
Bad card
E-B1C2 (10-160).

069
Probe E-B1C2U06 (-abs track address 1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   070
   Bad card
   E-B1F2 (10-160).

071
Bad card
E-B1C2 (10-160).

072
Probe E-B1F2P11 (-in drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

A A A
A B C

9 9
A A
D E

FRU ISOLATION MAP 1

5340 SYSTEMS UNIT

MAP 1095-9

073
Probe E-B1D2G13 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **074**
> Probe E-B1F2P11 (-in drive).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> **Are the lights correct?**
> Y N
>
> > **075**
> > Probe E-B1D2U11 (+behind home).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct?**
> > Y N
> >
> > > **076**
> > > Bad card
> > > E-B1D2
> > > ---or---
> > > E-B1E2 (10-160).
> >
> > **077**
> > Bad card
> > E-B1F2 (10-160).
>
> **078**
> Measure for +5Vdc (coil current signal):
> E-B1D2B09 (pos)
> E-B1D2D08 (neg).
> **Does the CE multimeter read -0.3V to +0.3V?**
> Y N
>
> > | | | |
>
> A A A
> F G H

079
Bad card
E-B1F2 (10-160).

080
Bad card
E-B1D2
---or---
E-B1F2 (10-160).

081
Measure for -5Vdc (integrator output):
E-B1F2P04 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read +0.3V to -4.0V?
Y N

> **082**
> Bad card
> E-B1F2 (10-160).

083
Bad card
E-B1D2
---or---
E-B1F2 (10-160).

084
Probe E-B1C2D13 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

1   1
0   0
A   A
J   K

085
Probe E-B1D2U11 (+behind home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  086
  Bad card
  E-B1D2 (10-160).

087
Bad card
E-B1F2 (10-160).

088
Measure for +24Vdc (base PNP in):
E-B1F2U07 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

  089
  Bad card
  Actuator coil driver card on drive B (10-160).

090
Measure for +5Vdc (+Q/2 error):
E-B1D2J07 (pos)
E-B1D2J08 (neg).
Does the CE multimeter read 0V to 0.5V?
Y N

  091
  Bad card
  E-B1F2
  ---or---
  Actuator coil driver card on drive B (10-160).

092
Bad card
E-B1F2
---or---
E-B1D2 (10-160).

A
L

093
(Entry Point C)

Is the Actuator Lock Knob on drive B unlocked?
Y N

 │ **094**
 │ Unlock the Actuator and run the disk MAPs again.

095
Bad card
E-B1C2
---or---
E-B1D2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

096

(Entry Point D)

-Set Power to 0 (operator panel).
Measure the resistance from E-B1F2J08 to E-B1F2J05
(clock threshold).
Is the resistance greater than 200 ohms?
Y N

> **097**
> Disconnect VC3 on board E-B1.
> Measure the resistance of the disk enclosure
> resistors (1 ohm range) VC3-C to VC3-D (10-190).
> **Is the resistance greater than 150 ohms?**
> Y N
>
> > **098**
> > Reinstall connector VC3.
> > Bad drive B disk enclosure (10-030).
>
> **099**
> There is a short circuit to ground on pins C and D of
> VC3 connector (10-190).

100
Jumper E-B1D2P07 (+brake applied) to E-B1D2P08.
-Set Power to 1 (operator panel).
Probe E-B1F2B04 (+servo clock SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **101**
> Remove jumper.
> Bad card
> E-B1F2 (10-160).

Note: Discontinuity of net F2-02 could cause you to
enter this MAP. See netlist tables, MAP 1077.

1
3
A
M

05JAN81   PN 8265725

EC 835086   PEC 834824

MAP 1095-12

102
Probe E-B1D2G05 (+servo clock SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  103
  Bad board
  E-B1 (10-170).

104
Bad jumpers on card E-B1D2
---or---
Bad card
E-B1D2 (10-160).
Remove jumper.

105
(Entry Point E)

Is the Actuator Lock Knob on drive B unlocked?
Y N

  106
  Unlock the Actuator and run the disk MAPs again.

107
Bad card
E-B1D2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	E	9	051
1046	D	6	034
1046	E	9	051
1047	D	6	034
1049	A	1	001
1049	B	3	010
1051	A	1	001
1051	B	3	010
1052	A	1	001
1053	A	1	001
1053	B	3	010
1053	C	4	023

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	002	1090	A
4	027	1094	A

001
(Entry Point A)

-Set Power to 0 (operator panel).

Jumper E-B1D2G10 (brake coil drive) to E-B1D2D08.
Jumper E-B1D2G11 (+brake applied to system) to E-B1D2J08.

-Set Power to 1 (operator panel).

Wait for 2 to 3 minutes and then observe the drive motor (see note).
Is the disk B drive motor turning?
Y N

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on nets B2-18, D2-05, E2-06, and F2-20 could cause you to enter this MAP. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-B1B2, E-B1C2, E-B1D2, E-B1E2, E-B1BF2, cables E-B1A3 and E-B1A5, and the disk enclosure.

Note: Disk drive brake has been jumpered open, so if drive motor is powered off disk will coast to stop. This can take up to 3 minutes.

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2 2
A B

002

Remove all jumpers.
Go To Map 1090, Entry Point A.

003

Reseat cable E-B1A2.
-Set Power to 1 (operator panel).
Wait 30 seconds, and then press Reset (CE panel).
Switch probe to MST 1,
Probe E-B1E2G12 (2F write clock).

```
Up   Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?
Y N

  004

  Remove all jumpers.
  Bad card
  E-B1E2 (10-160).

005

Switch probe to Multi.

Probe E-B1D2J05 (1F write clock).

```
Up   Light: On or flashing
Down Light: On or flashing
```

Are the lights correct?
Y N

  006

  Remove all jumpers.
  Bad card
  E-B1B2 (10-160).

C

007

Perform the following in order:

1. -Set Power to 0 (operator panel).
2. Jumper E-B1F2P02 (-power on delay) to E-B1F2P08.
3. -Set Power to 1 (operator panel).
4. Remove jumper E-B1F2P02 to E-B1F2P08.
5. Run the disk drive MAPs to drive B using MDI special (99-090), and return to this step after the MAPs stop.
-Select drive B.
-Enter 1040 001 for the starting MDI ID and step number.

Did disk MAPs run without errors?
Y N

  008

  Remove all jumpers.
  Bad jumpers on card E-B1D2
  ---or---
  Bad card
  E-B1D2
  ---or---
  E-B1E2 (10-160).

009

Remove all jumpers.
Bad card
E-B1F2
---or---
E-B1D2 (10-160).

D   MAP 1096-3

010
(Entry Point B)

Measure for −8Vdc:
E−B1F2B10 (pos)
E−B1A2D08 (neg.
Note: An open circuit on nets A2-07, A2-08, and F2-22
could cause you to enter this MAP. See netlist tables,
MAP 1077.
Does the CE multimeter read -7V to -9V?
Y N

  011
  Check for continuity of E-B1A2B10 to E-B1A2B12 to
  E-B1A2D09 to E-B1A2D13 to E-B1F2S04.
  Is the continuity OK?
  Y N

    012
    Bad board
    E-B1 (10-170).

  013
  Remove E-B1E2.
  −Set Power to 1 (operator panel).
  Measure for −8 Vdc:
  E-B1F2B10 (pos)
  E-B1A2D08 (neg)
  Does the CE multimeter read -7V to -9V?
  Y N

    014
    Reinstall original E-B1E2.
    Bad card E-B1F2.

  015
  Bad card
  E-B1E2.

016
Probe E-B1D2J02 (−osc late) and E-B1D2B13 (−osc
early).

Up   Light: Off
Down Light: On

Are the lights correct for either line?
Y N

  017
  Probe E-B1D2J02 (−osc late) and E-B1D2B13 (−osc
  early).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    018
    Bad card
    E-B1F2 (10-160).
    ---or---
    Bad drive B disk enclosure (10-030).

  019
  Switch probe to MST 1,
  Probe E-B1E2G12 (2F write clock).

  Up   Light: On or flashing
  Down Light: On or flashing

  Are the lights correct?
  Y N

    020
    Bad card
    E-B1E2 (10-160).

D

4 4
E F

05JAN81   PN 8265726

EC 835086   PEC 835000

MAP 1096-3

021
Bad card
E-B1F2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

022
Bad card
E-B1F2
---or---
E-B1D2 (10-160).

023
(Entry Point C)

Measure for -7Vdc:
E-B1F2U10 (pos)
E-B1F2U08 (neg).
Does the CE multimeter read -6V to -8V?
Y N

| **024**
| Remove E-B1E2.
| -Set Power to 1 (operator panel).
| Measure for -7 Vdc:
| E-B1F2U10 (pos)
| E-B1F2U08 (neg)
| **Does the CE multimeter read -6V to -8V?**
| Y N
|
| | **025**
| | Reinstall original E-B1E2.
| | Measure for -12Vdc:
| | E-B1F2U12 (pos)
| | E-B1F2U08 (neg).
| | **Does the CE multimeter read -10.5V to -13.5V?**
| | Y N
| |
| | | **026**
| | | Measure for -12Vdc:
| | | VC1-D (pos) (10-090)
| | | E-B1F2U08 (neg)
| | | **Does the CE multimeter read -10.5V to -13.5V?**
| | | Y N
| | |
| | | | **027**
| | | | Go To Map 1094, Entry Point A.
| | |
| | | **028**
| | | Bad board
| | | E-B1 (10-170).
| |
| | **029**
| | Bad card
| | E-B1F2 (10-160).

05JAN81   PN 8265726

EC 835086   PEC 835000

```
G  H
4  4
|  |
|  |
|  |
```

030
Bad card
E-B1E2.

031
Check continuity from E-B1F2U10 to E-B1F2P10 to
E-B1F2J10 to E-B1F2D10 to E-B1E2D10.
Is the continuity OK?
Y N

    032
    Bad board
    E-B1 (10-170).

033
Bad card
E-B1F2
---or---
E-B1D2 (10-160).

034

(Entry Point D)

Jumper E-B1A5D04 (-data select) to E-B1B2U08.
Probe E-B1C2U12 (+write select).

Up   Light: On
Down Light: Off

Are the lights correct?

Y N

   035

   Jumper E-B1C2G12 (-write) to E-B1C2J08.
   Probe E-B1C2U12 (+write select).

   Up   Light: On
   Down Light: Off

   Are the lights correct?

   Y N

      036

      Remove all jumpers.
      Bad card
      E-B1C2 (10-160).

   037

   Probe E-B1E2B13 (data PES).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?

   Y N

      038

      Remove all jumpers.
      Check for an open or a short to ground on drive B
      dedicated cable nets (-write), (-write data), (+write
      gate return) and (-reset error). See MAP 1077,
      Dedicated Cable Wiring Checks
      Was an open or a short found?

      Y N

Note: An open circuit on nets A5-04, A5-09, A5-11,
C2-32, and E2-02 could cause you to enter this MAP.
See netlist tables, MAP 1077.

8 8 7 7
J K L M

039
-Set Power to 1 (operator panel).
Probe A-A2B6C02 (-reset error).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **040**
> Probe A-A2C602 (-write) and A-A2C6B04 (-write data).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct for either line?**
> Y N
>
> > **041**
> > Probe A-A2C602 (-write) and A-A2C6B04 (-write data).
> >
> > Up   Light: Off
> > Down Light: On
> >
> > **Are the lights correct for either line?**
> > Y N
> >
> > > **042**
> > > Using the TU Select option (99-065), select drive B and loop on TA170.
> > > Probe A-A2C6C02 (-write) and A-A2C6B04 (-write data)
> > >
> > > Up   Light: Ignore
> > > Down Light: On or flashing
> > >
> > > **Are the lights correct?**
> > > Y N

N P Q R S

043
Bad card
A-A2C2.
---or---
Bad top card connector.

044
Bad card
E-B1B2
---or---
E-B1E2
(10-160)
---or---
A-A2C2.

045
Bad card
A-A2C2.

046
Bad card
E-B1B2 (10-160).

047
Bad card
A-A2D2.

048
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

049
Remove all jumpers.
Bad card
E-B1E2 (10-160).

050
Remove jumper.
Bad card
E-B1C2 (10-160).

051
(Entry Point E)
Probe E-B1D2P10 (+home).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

    052
    Check continuity from E-A1A4D04 to E-B1A3D04
    (-control bus bit 0).
    Is the continuity OK?
    Y N

        053
        Bad cable.
        E-B1A3 (10-150).

    054
    Bad card
    E-B1C2 (10-160).

055
Bad card
E-B1C2
---or---
E-B1D2 (10-160).

Note: An open circuit on net D2-37 could cause you to enter this MAP. See netlist tables, MAP 1077.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1045	A	1	001
1046	A	1	001
1046	C	5	037
1046	D	7	046
1047	A	1	001
1048	A	1	001
1049	A	1	001
1050	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1063	B	5	034

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

Note: An open circuit on the following nets could cause you to enter this MAP: A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, and VC-07. See netlist tables, MAP 1077.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-B1F2, E-B1C2, E-B1D2, E-B1B2, E-B1E2, board E-B1, cables E-B1A3 and E-B1A5, and the disk enclosure.

Is the Actuator Lock Knob on drive B unlocked?
Y N

  002
  Unlock the Actuator and run the disk MAPs again.

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2
A

003
Probe E-B1C2B13 (-shift).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

> **004**
> Probe E-B1C2B13 (-shift).
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
>> **005**
>> Jumper E-B1A5D04 (-data select) to E-B1A5D08.
>> Probe E-B1B2U11 (write clock).
>>
>> Up   Light: On or flashing
>> Down Light: On or flashing
>>
>> **Are the lights correct?**
>> Y N
>>
>>> **006**
>>> Probe E-B1B2P12 (+data select gated).
>>>
>>> Up   Light: On
>>> Down Light: Off
>>>
>>> **Are the lights correct?**
>>> Y N

4 4 3 3
B C D E F

007
Check for continuity (1 ohm range):
E-B1A2D02 to E-B1A2B13 (+data select gated).
Is the continuity OK?
Y N

> **008**
> Remove jumper
>
> Reseat cable E-B1A2.
> ---or---
> Bad drive B disk enclosure (10-030).
> Note: A temporary repair is to add a jumper from
> E-B1B2P12 to E-B1C2S12.

009
Check continuity from E-B1C2S12 to E-B1B2P12 (+data
select gated).
Is the continuity OK?
Y N

> **010**
> Remove jumper.
> Bad board
> E-B1 (10-170).

011
Check for continuity of drive B (-data select). See MAP
1077, Dedicated Cable Wiring Checks
Is the continuity OK?
Y N

> **012**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

013
Remove jumper.
Bad card
E-B1C2
---or---
E-B1B2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

014
Check for an open or a short to ground on drive B
(write clock) and (-sector).   See MAP 1077,
Dedicated Cable Wiring Checks
Was an open or a short found?
Y N

> **015**
> Remove jumper.
> Bad card
> E-B1B2 (10-160)
> ---or---
> Open or short to ground on +read data, -write
> data, +write gate return, -fast sync, read clock or
> write clock.   See MAP 1077, Dedicated Cable
> Wiring Checks.

016
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

017
Remove jumper.

Switch probe to MST 1,
Probe E-B1B2S11 (-increase) and E-B1B2S12
(-decrease).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **018**
> Bad card
> E-B1B2 (10-160).

019
Switch probe to Multi.

Probe E-B1C2B13 (-shift).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **020**
> Measure for +5Vdc (compensation coil):
> E-B1D2D04 (pos)
> E-B1D2D08 (neg).
> **Does the CE multimeter read 1.0V to 1.6V?**
> Y N
>
> > **021**
> > Remove card E-B1D2.
> >
> > Measure the resistance (10X range):
> > E-B1D2D04 (pos)
> > E-B1D2D08 (neg).
> > **Is the resistance more than 200 ohms?**
> > Y N
> >
> > > **022**
> > > Bad drive B disk enclosure (10-030).
> >
> > **023**
> > Bad card
> > E-B1D2 (10-160).
>
> **024**
> Bad card
> E-B1F2
> ---or---
> E-B1E2
> ---or---
> E-B1D2 (10-160).

G

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2 2 3

FRU ISOLATION MAP 3

5340 SYSTEMS UNIT

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J   MAP 1097-4

025

Check for an open or a short to ground on drive B
(-sector), (-write), and (-fast sync).   See MAP
1077, Dedicated Cable Wiring Checks
Was an open or a short found?
Y N

┊ **026**
┊ Bad jumpers on card E-B1D2
┊ ---or---
┊ Bad card
┊ E-B1D2
┊ ---or---
┊ E-B1F2
┊ ---or---
┊ E-B1C2 (10-160).

027
Exchange the bad card, cable, or board found in
the preceding step (10-150, 10-160, 10-170).

028
Bad card
E-B1C2 (10-160).

029
Switch probe to MST 1,
Probe E-B1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

┊ **030**
┊ Bad card
┊ E-B1B2 (10-160).

031
Verify probe at MST 1.
Probe E-B1B2S11 (-increase) and E-B1B2S12
(-decrease).

Up   Light: Off
Down Light: Off

Are the lights correct for either of the lines?
Y N

┊ **032**
┊ Bad card
┊ E-B1F2
┊ ---or---
┊ E-B1E2
┊ ---or---
┊ E-B1D2 (10-160).

033
Bad card
E-B1B2 (10-160).

J

034
(Entry Point B)

Check for continuity E-B1B2D08 to E-B1C2D08.
Is the continuity OK?
Y N

> **035**
> Bad board
> E-B1 (10-170).

036
Bad card
E-B1B2 (10-160).

037
(Entry Point C)

Measure for +12Vdc (profile gain voltage):
E-B1C2B02 (pos)
E-B1C2D08 (neg).

Note: An open circuit on nets C2-02 and D2-03 could cause you to enter this MAP. See netlist tables, MAP 1077.
Does the CE multimeter read more than 1.5V?
Y N

> **038**
> Measure the resistance from VC9-D to VC9-C on drive B (10-190).
> **Is the resistance in range from 300 ohms to 400 ohms?**
> Y N
>
> > **039**
> > Bad drive B disk enclosure (10-030).
>
> **040**
> Bad card
> E-B1D2 (10-160).

041
Disconnect the voltage connector VC-9 on drive B (10-190).
Measure for +5Vdc (desired velocity):
E-B1C2D02 (pos)
E-B1C2D08 (neg).
Does the CE multimeter read less than 0.3V?
Y N

> **042**
> **Does the CE multimeter read more than 5V?**
> Y N
>
> > **043**
> > Reinstall connector VC9.
> > Bad card
> > E-B1D2 (10-160).

6 6
K L

044
Reinstall connector VC9.
Bad card
E-B1C2 (10-160).

045
Reinstall connector VC9.
Bad card
E-B1C2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

046
(Entry Point D)

Measure for -12Vdc (write current defining resistor):
E-B1B2D04 (pos)
E-B1B2D08 (neg).
Does the CE multimeter read between -10.5V and -13.5V?
Y N

> **047**
> Bad card
> E-B1B2 (10-160).

048
Measure for -5Vdc (write current):
E-B1B2D08 (pos)
E-B1B2D07 (neg).
Does the CE multimeter read between -3.5V to -4.5V?
Y N

> **049**
> Bad card
> E-B1B2 (10-160).
> ---or---
> Bad drive B disk enclosure (10-030).

050
Is cable E-B1A2 seated correctly (10-190)?
Y N

> **051**
> Reseat the cable and run the disk MAPs again.

Note: An open cirucit on the following nets A2-02, B2-04, B2-08, B2-10, B2-13, C2-10, and V-04 could cause you to enter this MAP. See netlist tables, MAP 1077.

052

Probe the pins shown in Table 4.

```
.-----------Table 4 -------------.
| Note: All probing on board E-B1 |
|                                 |
| Probe MST 1 |    Probe Multi    |
|A2B03  A2B04 |A2B06 A2B05  A2B02 |
|  D      D   |  U     U      D   |
 ---------------------------------
```

Are the lights correct?

Y N

053

Probe the pins shown in Table 1 and check the results of the probing against the entries in the table. If the results match, that head is selected (see Note 1).

```
.----------- Table 1 -------------.
| Note: All probing on board E-B1 |
|                                 |
|     | Probe MST1|  Probe Multi   |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0     U     U     D     U     U |
| 1     D     U     D     U     U |
| 2     U     D     D     U     U |
| 3     D     D     D     U     U |
| 4     U     U     U     D     U |
| 5     D     U     U     D     U |
| 6     U     D     U     D     U |
| 7     D     D     U     D     U |
| 8     U     U     U     U     D |
| 9     D     U     U     U     D |
|10     U     D     U     U     D |
|11     D     D     U     U     D |
 ---------------------------------
```

Was a valid head selected?

Y N

9 9 9
N P Q

Note 1:

U Means- Up   Light: On
         Down Light: Off
D Means- Up   Light: Off
         Down Light: On

054
Probe the pins in Table 2 to determine which head is
selected (see Note 1).

```
.----------- Table 2 ------------.
| Note: All probing on board E-B1|
|                                |
|              Probe Multi       |
| Head|B2P07 B2P05|B2P10 B2P06   |
|  0     U     U     U     U     |
|  1     D     U     U     U     |
|  2     U     D     U     U     |
|  3     D     D     U     U     |
|  4     U     U     D     U     |
|  5     D     U     D     U     |
|  6     U     D     D     U     |
|  7     D     D     D     U     |
|  8     U     U     U     D     |
|  9     D     U     U     D     |
| 10     U     D     U     D     |
| 11     D     D     U     D     |
 -------------------------------
```

Was a valid head selected?
Y N

> **055**
> Bad card
> E-B1C2 (10-160).

056
Go to Step 060, Entry Point E.

057
Bad card
E-B1B2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

058
Probe E-B1C2G12 (-write).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **059**
> Bad card
> A-A2C2
> ---or---
> Short on -write net. See dedicated cable wiring
> checks.

060
(Entry Point E)

-Set Power to 0 (operator panel).
Measure the resistance (10 ohm range) from
E-B1A2D04 (actuator I/O line B) to E-B1A2D05
(actuator I/O line A).
Is the resistance less than 300 ohms?
Y N

> **061**
> Bad drive B disk enclosure (10-030).

062
-Set Power to 1 (operator panel).

Add a jumper from E-B1C2G11 (+write block) to
E-B1C2J08.
Using the TU Select option (99-065), select drive B and
loop on TA169.
Probe E-B1C2M11 (+data unsafe).

Up   Light: On
Down Light: Off

(Step 062 continues)

(Step 062 continued)
Are the lights correct?
Y N

   063
   Remove jumper.
   Bad card
   E-B1C2 (10-160).

064
Remove jumper.
Bad card
E-B1B2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1046	A	1	001
1050	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1083	A
2	010	1083	A
2	012	1083	A

001
(Entry Point A)
Probe A-A2A4D04 (-data select).

Up   Light: On
Down Light: Off

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED:
E-B1B2, E-B1C2, E-B1F2, E-B1E2, and E-B1D2, cables
E-B1A3 and E-B1A5, and the drive B disk enclosure.

Note:
An open circuit on nets A5-10, B2-07, B2-11, C2-12
C2-13, C2-25, C2-26, D2-07, D2-42, E2-04, and V-04
could cause you to enter this MAP. See netlist tables,
MAP 1077.

Are the lights correct?
Y N

│ **002**
│ Bad card
│ A-A2C2
│ ---or---
│ A-A2D2
│ ---or---
│ Bad top card connector
│ ---or---
│ Short to Ground on drive A (-data select). See MAP
│ 1077, Dedicated Cable Wiring Checks.

2
A

A
1
|

B
|

MAP 1098-2

003
Probe A-A2B4D04 (-data select).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    004
    Bad card
    A-A2C2
    ---or---
    A-A2D2
    ---or---
    Bad top card connector
    ---or---
    Short to Ground on drive C (-data select). See MAP
    1077, Dedicated Cable Wiring Checks.

005
Probe A-A2B5D04 (-data select).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    006
    Bad card
    A-A2C2
    ---or---
    A-A2D2
    ---or---
    Bad top card connector
    ---or---
    Short to Ground on drive D (-data select). See MAP
    1077, Dedicated Cable Wiring Checks.

B

007
Probe A-A2A4B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    008
    Go To Map 1083, Entry Point A.

009
Probe A-A2B4B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    010
    Go To Map 1083, Entry Point A.

011
Probe A-A2B5B04 (-interrupt).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    012
    Go To Map 1083, Entry Point A.

3
C

013
Jumper E-B1A5D04 (-data select) to E-B1B2U08.
Probe E-B1A5B05 (-sector).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    014
    Check for an open or a short to ground on drive B
    (-sector). See MAP 1077, Dedicated Cable Wiring
    Checks.
    Was an open or a short found?
    Y N

        015
        Remove cable E-B1A5.
        -Set Power to 1 (operator panel).
        Probe A-A2B6B04 (-sector) (see FSL AB300).

        Up   Light: On
        Down Light: Off

        Are the lights correct?
        Y N

            016
            Reinstall all cables.
            Bad card
            A-A2C2.

        017
        Reinstall all cables.
        Bad card
        E-B1D2 (10-160).

    018
    Exchange the bad card, cable, or board found in the
    preceding step (10-150, 10-160, 10-170).

Note: Remove this jumper when leaving this MAP.
Failure to do so will result in a WRAP error on each of
the remaining disk drives.

4
D

019
Probe E-B1A5D12 (write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   020
   Probe E-B1C2S12 (+data select gated).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      021
      Disconnect cable E-B1A2.
      -Set Power to 1 (operator panel).
      Wait 30 seconds, and then press Reset (CE panel).
      Probe E-B1C2S12 (+data select gated).

      Up   Light: On
      Down Light: Off

      Are the lights correct?
      Y N

         022
         Reinstall all cables.
         Bad card
         E-B1C2 (10-160).

      023
      Bad card
      E-B1B2 (10-160).
      ---or---
      Bad drive B disk enclosure (10-030).

024
Probe E-B1B2P12 (+data select gated).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   025
   Check for continuity
   E-B1C2S12 to E-B1B2P12 (+data select gated).
   Is the continuity OK?
   Y N

      026
      Bad drive B disk enclosure (10-030).
      Note:
      A temporary repair is to add a jumper from E-B1C2S12 to E-B1B2P12.

   027
   Bad card
   E-B1B2 (10-160).

028
Check for an open or a short to ground on drive B (write clock). See MAP 1077, Dedicated Cable Wiring Checks
.

Was an open or a short found?
Y N

   029
   Bad card
   E-B1B2 (10-160).
   ---or---
   A-A2C2.

030
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

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031
Probe E-B1B2P09 (-chip select 1).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   032
   Probe E-B1B2P06 (-head select 8) and E-B1B2P10
   (-head select 4).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      033
      Bad card
      E-B1C2 (10-160).

   034
   Probe E-B1B2M05 (-FH select).

   Up   Light: Off
   Down Light: On

   Are the lights correct?
   Y N

      035
      Bad card
      E-B1B2 (10-160).

   036
   Bad card
   E-B1C2 (10-160).

G

037
Probe E-B1C2B06 (-go home or POFL).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   038
   Bad card
   E-B1D2
   ---or---
   E-B1C2 (10-160).

039
Switch probe to MST 1,
Probe E-B1B2P04 (-head select B).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   040
   Probe the pins shown in the following table and
   determine which head is selected by matching the
   probe results against the entries in the table. If the
   results match, that head is selected.

(Step 040 continues)

(Step 040 continued)

```
.------------ Table 1 -------------.
| Note: All probing on board E-B1  |
|                                  |
|     | Probe MST1|  Probe Multi    |
|Head|A2B03 A2B04|A2B06 A2B05 A2B02|
| 0    U     U     D     U     U   |
| 1    D     U     D     U     U   |
| 2    U     D     D     U     U   |
| 3    D     D     D     U     U   |
| 4    U     U     U     D     U   |
| 5    D     U     U     D     U   |
| 6    U     D     U     D     U   |
| 7    D     D     U     D     U   |
| 8    U     U     U     U     D   |
| 9    D     U     U     U     D   |
|10    U     D     U     U     D   |
|11    D     D     U     U     D   |
----------------------------------
```

Was a valid head selected?
Y N

  041
  Bad card
  E-B1B2 (10-160).

042
Note head selected from Table 1.

Probe the pins in the following table to determine which
head is selected (see Note 1).

Note 1:
U Means- Up   Light: On
         Down Light: Off
D Means- Up   Light: Off
         Down Light: On

(Step 042 continues)

(Step 042 continued)

```
.----------- Table 2 -----------.
| Note: All probing on board E-B1|
|                                |
|         Probe Multi            |
| Head|B2P07 B2P05|B2P10 B2P06   |
|  0    U     U     U     U      |
|  1    D     U     U     U      |
|  2    U     D     U     U      |
|  3    D     D     U     U      |
|  4    U     U     D     U      |
|  5    D     U     D     U      |
|  6    U     D     D     U      |
|  7    D     D     D     U      |
|  8    U     U     U     D      |
|  9    D     U     U     D      |
| 10    U     D     U     D      |
| 11    D     D     U     D      |
 --------------------------------
```

Was the same head selected both times?
Y N

   043
   Bad card
   E-B1B2 (10-160).

044
Was head three selected?
Y N

   045
   Bad card
   E-B1C2 (10-160).
   ---or---
   Bad drive B disk enclosure (10-030).

046
Bad card
E-B1B2
---or---
E-B1C2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

047
Measure for +5Vdc (VCO error signal):
E-B1B2U13 (pos)
E-B1B2P08 (neg).
Does the CE multimeter read between 0V to 0.5V?
Y N

   048
   Verify probe at MST 1.
   Probe E-B1B2U06 (+servo inhibit VCO).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      049
      Bad card
      E-B1E2 (10-160).

   050
   Bad card
   E-B1B2 (10-160).

051
Switch probe to Multi.

With the power on remove cable E-B1A5.
Probe E-B1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   052
   Reinstall the cable.
   Bad card
   E-B1C2 (10-160).

8
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MAP 1098-8

053

Reinstall the cable with the power switch on.
Probe E-B1C2G06 (-FH not selected).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

> **054**
> Bad card
> E-B1C2 (10-160).

055

Switch probe to MST 1,
Probe E-B1B2P13 (standarized data) and E-B1B2S09
(1F read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **056**
> Check for an open or a short to ground on drive B
> (-read). See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N
>
> > **057**
> > Bad card
> > E-B1B2
> > ---or---
> > E-B1D2 (10-160).
>
> **058**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

K

059

Switch probe to Multi.

Probe A-A2C2P06 (+read data).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **060**
> Check for an open or a short to ground on drive B
> (+read data). See MAP 1077, Dedicated Cable
> Wiring Checks.
> **Was an open or a short found?**
> Y N
>
> > **061**
> > Bad card
> > E-B1B2
> > ---or---
> > A-A2C2.
>
> **062**
> Exchange the bad card, cable, or board found in the
> preceding step (10-150, 10-160, 10-170).

063

Probe A-A2B6D02 (-index) (see FSL AB300).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **064**
> Check for an open or a short to ground on drive B
> (-index). See MAP 1077, Dedicated Cable Wiring
> Checks.
> **Was an open or a short found?**
> Y N

9 9 9
L M N

065
Remove cable E-B1A5.
-Set Power to 1 (operator panel).
Probe A-A2B6D02 (-index).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  066
  Reinstall the cable.
  Bad card
  A-A2C2.

067
Reinstall the cable.
Bad card
E-B1D2 (10-160).

068
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

069
Measure the following for +5Vdc (AGC reference and
control voltages):

E-B1B2G02 (pos) to E-B1B2J08 (neg)
E-B1B2J02 (pos) to E-B1B2J08 (neg).

Does the CE multimeter read 1.2 to 1.9V?
Y N

  070
  Bad card
  E-B1B2 (10-160).

P

071
Switch probe to MST 1,
Probe E-B1E2B13 (data PES).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

  072
  Measure for +12Vdc:
  E-B1B2S10 (pos)
  E-B1B2U08 (neg).
  Does the CE multimeter read 1.5V to 2.5V?
  Y N

    073
    Bad card
    E-B1B2 (10-160).

  074
  Bad card
  E-B1E2
  ---or---
  E-B1B2
  (10-160).

075
Switch probe to Multi.

Probe E-B1B2U07 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

076
Check for an open or a short to ground on drive B
(read clock).   See MAP 1077, Dedicated Cable
Wiring Checks.
Was a short found?
Y N

   077
   Bad card
   E-B1B2 (10-160).
   ---or---
   A-A2C2.

078
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

079
Using the TU Select option (99-065), select drive B and
loop on TA170.
Probe E-B1B2S02 (-fast sync).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   080
   Probe E-B1A5B03 (-control sample).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      081
      Bad card
      E-B1C2
      ---or---
      E-B1D2
      ---or---
      E-B1F2 (10-160).

1
1
S T

082
Probe E-B1D2D06 (+out direction).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   083
   Switch probe to MST 1,
   Probe E-B1B2U06 (+servo inhibit VCO).

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

      084
      Switch probe to Multi.
      Probe E-B1A5B09 (-missing sector pulse).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         085
         Check for an open or a short to ground on
         drive B (-fast sync), (read clock), (write clock),
         (-index), and (-sector).   See MAP 1077,
         Dedicated Cable Wiring Checks.
         Was an open or a short found?
         Y N

            086
            Bad card
            E-B1B2 (10-160).
            ---or---
            A-A2C2.

1 1 1 1
1 1 1 1
U V W X

087
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

088
Bad card
E-B1D2 (10-160).
---or---
Short to ground on drive B (-missing sector pulse). See MAP 1077, Dedicated Cable Wiring Checks.

089
Bad card
E-B1B2 (10-160).

090
Bad card
E-B1D2 (10-160).

091
Probe E-B1C2J11 (-read).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  092
  Check for an open or a short to ground on drive B (-read). See MAP 1077, Dedicated Cable Wiring Checks.
  Was an open or a short found?
  Y N

           A
  Y Z   A

093
Remove cable E-B1A5.
-Set Power to 1 (operator panel).
Probe E-B1A5D09 (-read).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

  094
  Bad card
  E-B1C2 (10-160).

095
Bad card
A-A2D2
---or---
A-A2C2
---or---
Bad top card connector

096
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

097
Probe E-B1B2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

1 1
2 2
A A
B C

098
Probe E-B1C2J12 (+read select).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

   099
   Bad card
   E-B1C2
   ---or---
   E-B1B2 (10-160).

100
Bad board
E-B1 (10-170).

101
Probe E-B1C2B05 (-tag 010 CS).

Up   Light: On or flashing
Down Light: On or flashing

NOTE:
Observe for one minute.
Are the lights correct?
Y N

   102
   Bad card
   E-B1C2 (10-160).

103
Probe A-A2C2J13 (read clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

ADI AEI

104
Check for an open or a short to ground on drive B (read clock). See MAP 1077, Dedicated Cable Wiring Checks.
Was an open or a short found?
Y N

   105
   Bad card
   E-B1B2 (10-160).
   ---or---
   A-A2C2.

106
Exchange the bad card, cable, or board found in the preceding step (10-150, 10-160, 10-170).

107
Switch probe to MST 1,
Probe E-B1A2B03 (-head select A) and E-B1A2B04 (-head select B).

Up   Light: On or flashing
Down Light: On or flashing

Observe for one minute.
Are the lights correct?
Y N

   108
   Switch probe to Multi.

   Probe E-B1B2P05 (-head select 2) and E-B1B2P07 (-head select 1).

   Up   Light: On or flashing
   Down Light: On or flashing

   Are the lights correct?
   Y N

      109
      Bad card
      E-B1C2 (10-160).

ADI AEI

13AF 13AG

110
Bad card
E-B1B2 (10-160).
---or---
Bad drive B disk enclosure (10-030).

111
Remove jumper.
Switch probe to Multi.
Probe E-B1A5D04 (-data select).

Up   Light: Ignore
Down Light: On or flashing

Are the lights correct?
Y N

  112
  Bad card
  A-A2C2.
  ---or---
  Open on drive B (-data select). See MAP 1077,
  Dedicated Cable Wiring Checks.

113
Check for continuity on drive B (-data select)
(-fast sync), (-index), (-sector), (-read),
(read clock) and (+read data). See MAP 1077,
Dedicated Cable Wiring Checks.
Was an open found?
Y N

  114
  Bad card
  A-A2C2
  ---or---
  E-B1B2
  ---or---
  E-B1C2
  ---or---
  E-B1F2 (10-160)
  ---or---
  Bad drive B disk enclosure (10-030).

115
Exchange the bad card, cable, or board found in the
preceding step (10-150, 10-160, 10-170).

A
H

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1044	A	1	001
1045	A	1	001
1047	A	1	001
1049	A	1	001
1050	A	1	001
1051	A	1	001
1054	A	1	001
1055	A	1	001
1056	A	1	001
1057	A	1	001
1071	A	1	001

001
(Entry Point A)

MAP DESCRIPTION:
This MAP is a FRU isolation MAP.

START CONDITIONS:
This MAP may only be entered from other disk MAPs.

LOGIC CARDS TESTED: E-B1F2, Actuator driver card,
E-B1D2, E-B1E2, and E-B1C2.

Note:
An open cirucit on nets D2-15,D2-16,D2-43
F2-19,F2-24,F2-25,F2-27, and V-05 could cause you to
enter this MAP. See netlist tables, MAP 1077.

Is the Actuator Lock Knob on drive B unlocked?
Y N

  002
  Unlock the Actuator and run the disk MAPs again.

2
A

A
1

003
Measure for +5Vdc (-reset bucket):
E-B1E2B07 (neg)
E-B1E2D08 (pos).
Does the CE multimeter read more than 1.8V?
Y N

   004
   Bad jumpers on card E-B1E2
   ---or---
   Bad card
   E-B1E2 (10-160).

005
Probe E-B1D2U07 (-out drive).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   006
   Probe E-B1D2G08 (-missing sector pulse).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      007
      Probe E-B1D2G04 (-select demod N1).

      Up   Light: On or flashing
      Down Light: On or flashing

      Are the lights correct?
      Y N

6 4 4
B C D E

E

MAP 1099-2

008
Probe E-B1F2P05 (+select integrator).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   009
   Probe E-B1D2S07 (-in drive).

   Up   Light: On
   Down Light: Off

   Are the lights correct?
   Y N

      010
      Jumper E-B1D2M11 (+recalibrate timeout SS) to
      E-B1D2PO8.
      Probe E-B1D2S07 (-in drive) and E-B1D2U07
      (-out drive).

      Up   Light: Off
      Down Light: On

      Are the lights correct?
      Y N

         011
         Probe E-B1D2S07 (-in drive) and E-B1D2U07
         (-out drive).

         Up   Light: On or flashing
         Down Light: On or flashing

         Are the lights correct for only one of the two lines?
         Y N

4 3 3 3 3
F G H J K

012
Perform the following in order:

1. Remove jumper E-B1D2M11
(+recalibrate timeout SS) to E-B1D2P08.
2. Jumper E-B1F2P02 (-power on delay) to E-B1F2P08.
3. Jumper E-B1D2S06 (kick SS) to E-B1D2U08.
4. Remove jumper E-B1F2P02 to E-B1F2P08.
5. Remove jumper E-B1D2S06 to E-B1D2U08.
6. Run the disk drive MAPs to drive B using MDI
   special (99-090):
-Select drive B.
-Enter 1040 001 for the starting MAP.
Did disk MAPs run without errors?
Y N

> **013**
> Pull out card E-B1F2.
> Measure the resistance (1 ohm range)
> from E-B1F2M04 (VCM start) to E-B1F2M05 (VCM
> finish).
> **Is the resistance less than 30 ohms?**
> Y N
>
> > **014**
> > Reinstall card.
> > Bad drive B disk enclosure (10-030).
>
> **015**
> Reinstall card.
> Check for continuity (1 ohm range)
> VC-5D (10-190) to E-B1F2S09.
> **Is the continuity OK?**
> Y N
>
> > **016**
> > Bad board
> > E-B1 (10-170).

L M

017
Check for continuity VC5-D (10-190) to
ground on PDTB1
(5340 Vol. D FSL YA080).
Is the continuity OK?
Y N

> **018**
> Open on drive B DC power cable.

019
Bad card
Actuator coil driver card on drive B
---or---
E-B1F2 (10-160).

020
Remove jumper.
Bad card
E-B1D2 (10-160).

021
Remove jumper.
Bad card
E-B1D2 (10-160).

022
Bad card
E-B1D2 (10-160).

023
Measure for +5Vdc (VCM finish):
E-B1F2M05 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read 1V to 2V?
Y N

> **024**
> Measure for +5Vdc (base NPN out):
> E-B1F2U02 (pos)
> E-B1F2P08 (neg).
> **Does the CE multimeter read less than 0.7 volts?**
> Y N

4 4 4
N P Q

P Q
3 3

FRU ISOLATION MAP 5

5340 SYSTEMS UNIT

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C . N
2 2 ∠ 3

MAP 1099-4

025
Pull out card E-B1F2.
Measure the resistance (1 ohm range) between
E-B1F2M04 (VCM start) and E-B1F2M05 (VCM
finish).
Is the resistance less than 30 ohms?
Y N

> **026**
> Bad drive B disk enclosure (10-030).

027
Reinstall card E-B1F2.
Bad card
Actuator coil driver card on drive B (10-160).

028
Measure for +24Vdc (base PNP out):
E-B1F2M12 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read less than 18V?
Y N

> **029**
> Bad card
> E-B1F2 (10-160).

030
Pull out card E-B1F2.
Measure the resistance (1 ohm range) between
E-B1F2M04 (VCM start) and E-B1F2M05 (VCM finish).
Is the resistance less than 30 ohms?
Y N

> **031**
> Reinstall card E-B1F2.
> Bad drive B disk enclosure (10-030).

032
Reinstall card E-B1F2.
Bad card
Actuator coil driver card on drive B (10-160).

033
Bad card
E-B1F2 (10-160).

034
Bad drive B disk enclosure (10-030).

035
Measure for +5Vdc (VCM finish):
E-B1F2M05 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read greater than 3V?
Y N

> **036**
> Bad card
> E-B1E2 (10-160).

037
Bad card
E-B1F2 (10-160).

038
Probe E-B1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **039**
> Probe E-B1F2B12 (+normal error).
>
> Up   Light: On
> Down Light: Off
>
> **Are the lights correct?**
> Y N

5 5 5
R S T

040
Probe E-B1F2G03 (+coil current low).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  041
  Probe E-B1D2S07 (-in drive).

  Up   Light: On
  Down Light: Off

  Are the lights correct?
  Y N

    042
    Probe E-B1F2G12 (+on track).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

      043
      Bad card
      Actuator coil driver card on drive B (10-160).

    044
    Bad card
    E-B1F2 (10-160).

  045
  Measure for +12Vdc (hybrid velocity):
  E-B1D2D02 (neg)
  E-B1D2D08 (pos).
  Does the CE multimeter read more than 6.0V?
  Y N

U V W

046
Bad card
E-B1F2 (10-160).

047
Bad card
E-B1D2 (10-160).

048
Bad card
E-B1D2 (10-160).

049
Bad card
E-B1D2
---or---
E-B1F2 (10-160).

050
Measure for +24Vdc (VCM finish):
E-B1F2M05 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

  051
  Measure for +5Vdc (VCM start):
  E-B1F2M04 (pos).
  E-B1F2P08 (neg).
  Does the CE multimeter read more than 2V?
  Y N

    052
    Bad card
    E-B1D2 (10-160).

  053
  Bad card
  E-B1F2 (10-160).

6
X

054
Measure for +5Vdc (VCM start):
E-B1F2M04 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read more than 5V?
Y N

    055
    Probe E-B1D2B03 (+lin reg N of even track).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        056
        Measure for +5Vdc (hybrid velocity):
        E-B1D2D02 (neg)
        E-B1D2D08 (pos).
        Does the CE multimeter read more than 2V?
        Y N

            057
            Bad card
            Actuator coil driver card on drive B (10-160).

        058
        Bad card
        E-B1D2 (10-160).

    059
    Bad card
    E-B1F2 (10-160).

060
Bad card
E-B1D2 (10-160).

061
Probe E-B1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    062
    Probe E-B1F2B03 (+even).

    Up   Light: Off
    Down Light: On

    Are the lights correct?
    Y N

        063
        Bad card
        E-B1F2 (10-160).

064
Probe E-B1F2J04 (-bad AGC level).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

    065
    Bad card
    E-B1F2 (10-160).

9 7
Y Z

066
Switch probe to MST 1,
Probe E-B1E2B09 (-counter G).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **067**
> Verify probe at MST 1.
> Probe E-B1E2B09 (-counter G).
>
> Up   Light: On or flashing
> Down Light: On or flashing
>
> Observe for one minute.
> **Are the lights correct?**
> Y N
>
>> **068**
>> Switch probe to Multi.
>>
>> Probe E-B1F2G03 (+coil current low).
>>
>> Up   Light: Off
>> Down Light: On
>>
>> **Are the lights correct?**
>> Y N
>>
>>> **069**
>>> Probe E-B1D2U04 (-select integrator).
>>>
>>> Up   Light: On
>>> Down Light: Off
>>>
>>> **Are the lights correct?**
>>> Y N

070
Bad jumpers on card E-B1D2
---or---
Bad card
E-B1D2 (10-160).

071
Probe E-B1D2U06 (+servo protect).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **072**
> Measure for +24Vdc (base PNP in):
> E-B1F2U07 (pos)
> E-B1F2U08 (neg).
> **Does the CE multimeter read more than 10.0V?**
> Y N
>
>> **073**
>> Bad card
>> Actuator coil driver card on drive B (10-160).
>
> **074**
> Measure for +5Vdc (handover velocity):
> E-B1D2S03 (pos)
> E-B1D2U08 (neg).
> **Does the CE multimeter read less than 0.8V?**
> Y N
>
>> **075**
>> Bad card
>> Actuator coil driver card on drive B
>> ---or---
>> E-B1F2 (10-160).

9   8   8
A   A   A   A   A
A   B   C   D   E

8   8
A   A
F   G

05JAN81   PN 8265729

EC 835086   PEC 834824

MAP 1099-7

076
Bad card
Actuator coil driver card on drive B
---or---
E-B1D2
(10-160).

077
Switch probe to MST 1,
Probe E-B1E2J12 (2F write clock).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  078
  Bad jumpers on card E-B1E2
  ---or---
  Bad card
  E-B1E2 (10-160).

079
Switch probe to Multi.

Probe E-B1D2B03 (+lin reg N of even track).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

  080
  Bad card
  E-B1E2 (10-160).

081
Bad jumpers on card E-B1D2
---or---
Bad card
E-B1D2 (10-160).

082
Measure for +5Vdc (data PES):
E-B1E2B13 (neg)
E-B1E2B08 (pos).
Does the CE multimeter read more than 4.0V?
Y N

  083
  Bad card
  Actuator coil driver card on drive B
  ---or---
  E-B1F2 (10-160).

  084
  Bad card
  E-B1E2 (10-160).

085
Switch probe to Multi.

Probe E-B1F2G03 (+coil current low).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  086
  Probe E-B1F2S12 (+NSW).

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

    087
    Bad card
    E-B1D2
    ---or---
    E-B1E2
    ---or---
    E-B1F2 (10-160).

A A A
A H J
7 8 8

FRU ISOLATION MAP 5

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Y
6

MAP 1099-9

088
Switch probe to MST 1,
Probe E-B1E2B09 (-counter G).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    089
    Bad card
    E-B1E2 (10-160).

090
Bad card
E-B1F2
---or---
E-B1E2 (10-160).

091
Probe E-B1F2B12 (+normal error).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    092
    Bad card
    E-B1F2 (10-160).

093
Bad card
E-B1E2 (10-160).

094
Bad card
E-B1E2 (10-160).

095
Probe E-B1D2G04 (-select demod N1).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

    096
    Probe E-B1D2S10 (-sector).

    Up   Light: On or flashing
    Down Light: On or flashing

    Are the lights correct?
    Y N

        097
        Bad card
        E-B1D2
        ---or---
        E-B1C2 (10-160).

    098
    Probe E-B1F2G12 (+on track).

    Up   Light: On
    Down Light: Off

    Are the lights correct?
    Y N

        099
        Bad card
        E-B1D2 (10-160).

1 1
1 0
A A
K L

FRU ISOLATION MAP 5

5340 SYSTEMS UNIT

MAP 1099-10

100
Probe E-B1D2U04 (-select integrator).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   101
   Bad card
   E-B1D2 (10-160).

102
Probe E-B1F2S12 (+NSW).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

   103
   Measure for +5Vdc (handover velocity):
   E-B1D2S03 (pos)
   E-B1D2U08 (neg).
   Does the CE multimeter read more than 1.1V?
   Y N

      104
      Measure for +5Vdc (CSR in):
      E-B1F2U05 (pos)
      E-B1F2U08 (neg).
      Does the CE multimeter read more than 1.0V?
      Y N

         105
         Bad card
         E-B1D2 (10-160).

      106
      Bad card
      Actuator coil driver card on drive B (10-160).

107
Probe E-B1D2G08 (-missing sector pulse).

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

   108
   Bad card
   E-B1F2 (10-160).

109
Jumper E-B1F2P11 (-in drive) to E-B1F2P08.
Measure for +24Vdc (VCM finish):
E-B1F2M05 (pos)
E-B1F2P08 (neg).
Does the CE multimeter read more than 10V?
Y N

   110
   Bad card
   E-B1E2
   ---or---
   E-B1D2 (10-160).

111
Bad card
Actuator coil driver card on drive B (10-160).

112
Measure the resistance (10 ohm range) of the following:
E-B1F2U05 to E-B1F2U08 (CSR in)
E-B1F2S05 to E-B1F2U08 (CSR out).
Are both the resistances less than 10 ohms?
Y N

   113
   Bad card
   Actuator coil driver card on drive B (10-160).

```
A A
K P
9 1
  0
```

114
Bad card
E-B1F2 (10-160).

115
Probe E-B1F2B03 (+even).

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

> **116**
> Bad card
> E-B1E2 (10-160).

117
Switch probe to MST 1,
Probe E-B1B2U10 (data SS).

Up   Light: On or flashing
Down Light: On or flashing

Are the lights correct?
Y N

> **118**
> Bad card
> E-B1B2 (10-160).

119
Measure for +5Vdc:
E-B1B2S11(neg) to E-B1B2U08(pos)
E-B1B2S12(neg) to E-B1B2U08(pos).
Are both voltages greater than 0.5V?
Y N

> **120**
> Bad card
> E-B1B2 (10-160).

```
A
Q
```

121
Switch probe to Multi.
Probe E-B1D2D06 (+out direction).

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

> **122**
> Bad card
> Actuator coil driver card on drive B
> ---or---
> E-B1F2 (10-160).

123
Bad card
E-B1D2 (10-160).

```
A
Q
```

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1193	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	022	1103	A
1	003	1121	A
2	015	1125	A
3	017	1127	A
3	019	1129	A
3	023	1198	A

001
(Entry Point A)
Read before continuing.....................

The method you have chosen to run the work station attachment MAPs is not permitted.

For instructions on how to run the MAPs from the CE panel, see the Diagnostic Service Guide 99-062.

@
Y N

    002

    Run TC001 Adapter Reset.
    This test issues an adapter reset to the work station
    adapter and tests the results.
    Did the test complete without error?
    Y N

        003
        @
        Go To Map 1121, Entry Point A.

MAP DESCRIPTION:
This is a hard copy of an MDI MAP to be referenced from the CE panel when using the special tuselect described in the Diagnostic Service Guide 99-064.

START CONDITIONS:
Entry is through MAP 1198.

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment)

3 2
A B

07JUL80   PN 4237537

EC 835000   PEC 832999

MAP 1101-1

004

Run TC002 Diangostic Mode Enable/Disable.
This test sets and resets the diagnostic mode latch on
the work station attachment card and senses the
results.
Did the test complete without error?
Y N

005
The test of the diagnostic mode latch has failed.
Bad card
A-A2M2 card (work station attachment)

006

Run TC003 Diag Set CS Xfer Error.
This test sets and resets the cycle steal transfer check
latch via a diagnostic path and senses the results.
Did the test complete without error?
Y N

007
The test of the cycle steal transfer check latch has
failed.
Bad card
A-A2M2 card (work station attachment)

008

Run TC004 U-Interrupt Request Enable.
This test sets and resets the enable system micro
interrupt latch and senses the results.
Did the test complete without error?
Y N

009
The test of the enable system micro interrupt latch
has failed.
Bad card
A-A2M2 card (work station attachment)

C

010

Run TC005 Set Service Request.
This test sets and resets the service required latch
(used by the control processor in communicating with
the work station attachment).
Did the test complete without error?
Y N

011
The test of the service required latch has failed.
GO TO MAP 1101, ENTRY POINT B.
Go to Page 4, Step 024, Entry Point B.

012

Run TC006 Set Command Pending.
This test sets and resets the command pending latch
(used by the control processor in communicating with
the work station attachment.)
Did the test complete without error?
Y N

013
The test of the command pending latch has failed.
Bad card
A-A2M2 card (work station attachment)

014

Run TC007 Controller Load Set/Reset.
This test sets and resets the controller load latch.
Did the test complete without error?
Y N

015
@
Go To Map 1125, Entry Point A.

016

Run TC008 Single Cycle Set/Reset.
This test sets and resets the controller single cycle latch.
Did the test complete without error?
Y N

  017
  @
  Go To Map 1127, Entry Point A.

018

Run TC009 Controller Reset Set/Reset.
This test sets and resets the controller reset latch and tests the results.
Did the test complete without error?
Y N

  019
  @
  Go To Map 1129, Entry Point A.

020

Run TC00A JIO Functions.
This test tests the various JIO functions implemented in this attachment.
Did the test complete without error?
Y N

  021
  The test of the JIO functions has failed.
  Bad card
  A-A2M2 card (work station attachment)

022
@
Go To Map 1103, Entry Point A.

023
The work station controller MAPs are run only from the CE panel. The instructions for this procedure are in the Diagnostic Service Guide, Section 99-062.
Go To Map 1198, Entry Point A.

024
(Entry Point B)

Loop on TC005 Set Service Request.
Probe A-A2M2W03 (+Controller ring 1)

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  025
  Bad card
  A-A2N2 card (work station controller)

026
Bad card
A-A2M2 card (work station attachment)

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1101	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	023	1105	A
2	004	1130	A
1	002	1143	A
2	006	1145	A
2	008	1147	A
2	010	1149	A

001
(Entry Point A)

RUN TC00C , 'U-INTERRUPT REQUEST SET'.
THIS TEST SETS AND RESETS THE SYSTEM MICRO
INTERRUPT LATCH AND SENSES THE RESULTS.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF AN MDI MAP TO BE
RELEASED FOR THE CE PANEL WHEN USING THE
SPECIAL   TUSELECT   DESCRIBED   IN   THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)
A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2P4 CARD (BASE STORAGE)
A-A2Q4 CARD (EXPANDED STORAGE)
A-A2R4 CARD (FEATURE STORAGE CARD IF
INSTALLED)

Did the test run OK?
Y N

  002
  @
  Go To Map 1143, Entry Point A.

2
A

15DEC78   PN 4237538

EC 834777   PEC 832999

MAP 1103-1

A
1
003

009

RUN TC00B , 'CONTROLLER DBO/DBI WRAP'.
THIS TU WRAP DATA THROUGH THE
CONTROLLERS DBI AND DBO.
Did the test run OK?
Y N

   004
   @
   Go To Map 1130, Entry Point A.

005

RUN TC00D , 'X-SAR BIT 2, CONTROLLER LOAD'.
THIS TU TESTS THE CONTROLLER'S ABILITY TO BE
LOADED BY INCREMENTING THE INSTRUCTION
ADDRESS REGISTER THROUGH ALL USEABLE
LOCATION OF STORAGE.
Did the test run OK?
Y N

   006
   @
   Go To Map 1145, Entry Point A.

007

RUN TC00E , 'CONTROLLER BUSY'.
THIS TU SETS AND RESETS CONTROLLER BUSY.
THESE COMMANDS ARE SPECIALLY DESIGNED SO
THAT THEY WILL COMPLETELY TEST THE IO
ADDRESS BUS (THIS IS THE FIRST
MICRO-PROGRAM RUN BY THE CONTROLLER.).
Did the test run OK?
Y N

   008
   @
   Go To Map 1147, Entry Point A.

B

RUN TC020 , 'CONTROLLER 4-BIT BUS'.
THIS TU TESTS THE 4 BIT DATA PATHS IN THE
CONTROLLER FOR SHORTS AND OPENS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

   010
   @
   Go To Map 1149, Entry Point A.

011

RUN TC00F , 'CONTROLLER TO CHANNEL'.
THIS TU SETS AND RESETS SYSTEM MICRO
INTERRUPT THROUGH A PROGRAM IN THE
CONTROLLER.
Did the test run OK?
Y N

   012
   THE CONTROLLER FAILED TO SET OR RESET THE
   MICRO INTERRUPT REQUEST LATCH. THIS
   LATCH HAS BEEN TESTED EARLIER AND FOUND
   OK. THEREFORE, THE MOST LIKELY ERROR IS
   THE DECODE OF THE IO INSTRUCTION.
   Bad card
   A-A2M2 CARD (WORK STATION ATTACHMENT)

013

RUN TC010 ,, 'CONTROLLER OP CHECK LATCH'.
THIS TU SETS AND RESETS OP CHECK, A
MICROCODE SET CHECK LATCH.
Did the test run OK?
Y N

014

THE TEST OF OPCHK HAS FAILED.

Bad card

A-A2M2 CARD (WORK STATION ATTACHMENT)

015

RUN TC011 , 'CONT DBO/DBI PARITY LATCH '.

THIS TU SETS AND RESETS AND CONTROLLER DBO/DBI PARITY CHECK LATCH AND CHECK THE RESULTS.

Did the test run OK?

Y N

016

THE TEST OF CONTROLLER DB PCK HAS FAILED.

Bad card

A-A2M2 CARD (WORK STATION ATTACHMENT)

017

RUN TC012 , 'COMMAND PENDING SENSE TEST'.

THIS TU SETS AND RESETS THE COMMAND PENDING LATCH AND VERIFIES THAT THE CONTROLLER CAN SENSE IT.

Did the test run OK?

Y N

018

THE TEST OF COMMAND PENDING HAS FAILED.

Bad card

A-A2N2 CARD (WORK STATION CONTROLLER)

---or---

A-A2M2 CARD (WORK STATION ATTACHMENT)

E

019

RUN TC013 , 'SERVICE REQUIRED'.

THIS TU SETS AND RESETS THE 'SERVICE REQUIRED' LATCH AND VERIFIES THAT THE CONTROLLER CAN SENSE IT.

Did the test run OK?

Y N

020

THE TEST OF 'SERVICE REQUIRED' HAS FAILED.

Bad card

A-A2M2 CARD (WORK STATION ATTACHMENT)

021

RUN TC014 , 'CYCLE STEAL TRANSFER'.

THIS TU SETS AND RESETS THE CYCLE STEAL TRANSFER CHECK LATCH AND SENSES THE RESULT.

THIS IS THE LAST OF THE ADAPTER/CHANNEL INTERFACE TESTS.

Did the test run OK?

Y N

022

THE TEST OF THE CONTROLLER'S ABILITY TO SET AND RESET CS TRANSFER CK HAS FAILED.

Bad card

A-A2M2 CARD (WORK STATION ATTACHMENT)

023

@

Go To Map 1105, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	027	1107	A

001
(Entry Point A)

RUN TC031 CONTROLLER DAR SELECT.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

002
THE TEST OF THE DATA ADDRESS REGISTER STACK ADDRESSING CAPABILITY HAS FAILED.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

003

RUN TC032 CONTROLLER DAR DATA (5).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

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2 2
A B

004
THE TEST OF THE DATA ADDRESS REGISTER
STORAGE CAPABILITY HAS FAILED.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

005

RUN TC033 CONTROLLER DAR DATA (A).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    006
    THE TEST OF THE DATA ADDRESS REGISTER
    STORAGE CAPABILITY HAS FAILED.
    Bad card
    A-A2N2 CARD (WORK STATION CONTROLLER)

007

RUN TC034 CONTROLLER REG/AUX REGS SELECT.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    008
    Bad card
    A-A2M2 CARD (WORK STATION ATTACHMENT)
    ---or---
    A-A2N2 CARD (WORK STATION CONTROLLER)

009

RUN TC035 CONTROLLER REG SELECTION.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    010
    THE TEST OF THE INTERNAL REGISTER STACK
    ADDRESSING CAPABILITY HAS FAILED.
    Bad card
    A-A2N2 CARD (WORK STATION CONTROLLER)

C

011

RUN TC036 CONTROLLER REG DATA (5).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    012
    THE TEST OF THE INTERNAL REGISTER STACK
    STORAGE CAPABILITY HAS FAILED.
    Bad card
    A-A2N2 CARD (WORK STATION CONTROLLER)

013

RUN TC037 CONTROLLER REG DATA (A).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    014
    THE TEST OF THE INTERNAL REGISTER STACK
    STORAGE CAPABILITY HAS FAILED.
    Bad card
    A-A2N2 CARD (WORK STATION CONTROLLER)

015

RUN TC038 CONTROLLER AUX REG SELECTION.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    016
    THE TEST OF THE INTERNAL AUXILIARY
    REGISTER ADDRESSING CAPABILITY HAS
    FAILED.
    Bad card
    A-A2N2 CARD (WORK STATION CONTROLLER)

017

RUN TC039 CONTROLLER AUX REG DATA (5).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **018**
> A TEST OF THE STORAGE CAPABILITY OF THE INTERNAL AUXILIARY REGISTER STACK HAS FAILED.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

019

RUN TC03A CONTROLLER AUX REG DATA.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **020**
> THE TEST OF THE INTERNAL AUXILIARY REGISTER STACK STORAGE CAPABILITY HAS FAILED.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

021

RUN TC03B CONRTROLLER ALU.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **022**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)
> ---or---
> A-A2N2 CARD (WORK STATION CONTROLLER)

E

023

RUN TC03C CONTROLLER ALU.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **024**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)
> ---or---
> A-A2N2 CARD (WORK STATION CONTROLLER)

025

RUN TC03D CONTROLLER ALU.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **026**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)
> ---or---
> A-A2N2 CARD (WORK STATION CONTROLLER)

027
@
Go To Map 1107, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1105	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	019	1109	A

001
(Entry Point A)

RUN TC03E CONTROLLER ALU.
THIS TU TESTS THE CONTROLLER'S PROCESS CONDITION REGISTER FOR THE CAPABILITY TO FIND A CARRY AND ¬ZERO.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

002
THE PROCESS CONDITION REGISTER HAS FAILED TO SET CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)
A-A2M2 CARD (WORK STATION ATTACHMENT)

2
A

003

RUN TC03F CONTROLLER ALU.
THIS TEST TESTS THE CONTROLLER'S PROCESS
CONDITION REGISTER FOR THE CAPABILITY TO
FIND A ZERO AND ¬ZERO WHILE IN SUMMARY
MODE.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> 004
> THE PROCESS CONDITION REGISTER HAS
> FAILED TO SET CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)
> A-A2M2 CARD (WORK STATION ATTACHMENT)

005

RUN TC040 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S PROCESS
CONDITION REGISTER FOR THE CAPABILITY TO
FIND A ZERO, ¬ZERO, AND CARRY WHILE IN
SUMMARY MODE.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> 006
> THE PROCESS CONDITION REGISTER HAS
> FAILED TO SET CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)
> ---or---
> A-A2M2 CARD (WORK STATION ATTACHMENT)

B

007

RUN TC041 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
BRANCH ON A CONDITION CONTAINED IN THE
PROCESS CONDITION REGISTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> 008
> THE CONTROLLER HAS FAILED TO BRANCH ON A
> CONDITION OF THE PROCESS CONDITION
> REGISTER THAT WAS TESTED EARLIER.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

009

RUN TC042 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
BRANCH ON A CONDITION THAT IS CONTAINED IN
THE PROCESS CONDITION REGISTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> 010
> THE CONTROLLER HAS FAILED TO BRANCH ON A
> CONDITION OF THE PROCESS CONDITION
> REGISTER THAT WAS TESTED EARLIER.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

011

RUN TC043 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
BRANCH ON A CONDITION THAT IS CONTAINED IN
THE PROCESS CONDITION REGISTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

3 3
C D

012
THE CONTROLLER HAS FAILED TO BRANCH ON A CONDITION OF THE PROCESS CONDITION REGISTER THAT WAS TESTED EARLIER.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

013

RUN TC044 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO BRANCH ON A CONDITION THAT IS CONTAINED IN THE PROCESS CONDITION REGISTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

   014
   THE CONTROLLER HAS FAILED TO BRANCH ON A CONDITION OF THE PROCESS CONDITION REGISTER THAT WAS TESTED EARLIER.
   Bad card
   A-A2N2 CARD (WORK STATION CONTROLLER)

015

RUN TC045 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S PROCESS CONDITION REGISTER FOR THE CAPABILITY TO BRANCH ON A CONDITION.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

   016
   THE CONTROLLER HAS FAILED TO BRANCH ON A CONDITION OF THE PROCESS CONDITION REGISTER THAT WAS TESTED EARLIER.
   Bad card
   A-A2N2 CARD (WORK STATION CONTROLLER)

E

017

RUN TC046 CONTROLLER ALU TEST.
THIS TEST TESTS THE CONTROLLER'S PROCESS CONDITION REGISTER FOR THE CAPABILITY TO BRANCH ON A CONDITION.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

   018
   THE CONTROLLER HAS FAILED TO BRANCH ON A CONDITION OF THE PROCESS CONDITION REGISTER THAT WAS TESTED EARLIER.
   Bad card
   A-A2N2 CARD (WORK STATION CONTROLLER)

019
@
Go To Map 1109, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1107	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1111	A

001
(Entry Point A)

Run TC047 Controller Memory Addressing.
This test tests controller storage to verify that no address lines are stuck either active or inactive.

START CONDITIONS:

Entry is through MAP 1198

MAP DESCRIPTION:

This is a hard copy of a MDI MAP to be referenced from the CE panel when using the special tuselect described in the Diagnostic Service Guide 99-064

LOGIC CARDS TESTED:

A-A2N2 card (work station controller)
A-A2P4 card (base storage)
A-A2Q4 card (expanded storage)
A-A2R4 card (feature storage card if installed)

Did the test complete without error?
Y N

   002
   GO TO MAP 1109, ENTRY POINT B.
   Go to Page 2, Step 008, Entry Point B.

003

Run TC048 Controller Memory Test.
This test tests the capability of controller storage from address 100 to the maximum storing X'55', X'AA', and X'FE'.
Did the test complete without error?
Y N

2 2
A B

004
Bad card
A-A2N2 card (work station controller)
---or---
A-A2P4 card (base storage)
---or---
A-A2Q4 card (expanded storage)
---or---
A-A2R4 card (feature storage card if installed)

005

Run TC04B Memory Test (00-255).
This test tests the controller storage from address 0 to address 100 storing X'55',X'AA',X'FE'.
Did the test complete without error?
Y N

006
Tests of the storage on the controller card have failed.
Bad card
A-A2N2 card (work station controller)

007
@
Go To Map 1111, Entry Point A.

008
(Entry Point B)
Probe:
A-A2M2U06 (-DRAR bit 4)
A-A2M2U07 (-DRAR bit 5)
A-A2M2S07 (-DRAR bit 6)
A-A2M2S08 (-DRAR bit 7)

Up   Light: On
Down Light: Off

Are the lights correct?
Y N

009
Bad card
A-A2M2 card (work station attachment)

010
Bad card
A-A2N2 card (work station controller)
---or---
A-A2P4 card (base storage)
---or---
A-A2Q4 card (expanded storage)
---or---
A-A2R4 card (feature storage card if installed)

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1109	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	015	1113	A

001
(Entry Point A)

RUN TC051 CONTROLLER BRANCH AND LINK TEST. THIS TEST TESTS THE CONTROLLER BRANCH AND LINK INSTRUCTION.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)
A-A2M2 CARD (WORK STATION ATTACHMENT)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

002
THE BRANCH AND LINK INSTRUCTION IN THE CONTROLLER HAS FAILED.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

05JUN78   PN 4237542

EC 832999   PEC 832850

MAP 1111-1

2
A

003

RUN TC052 CONTROLLER BRANCH AND LINK TEST
THIS TEST TESTS THAT THE CONTROLLER IS
CAPABLE OF EXECUTING TWO LEVELS OF A
BRANCH AND LINK OPERATION.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **004**
> THE SECOND LEVEL OF THE CONTROLLER
> BRANCH AND LINK OPERATION HAS FAILED.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

005

RUN TC053 CONTROLLER BRANCH AND LINK TEST.
THIS TEST CHECKS THE CONTROLLER MICRO
INTERRUPT. IT WAITS 21 MILLISECONDS BEFORE
THE INTERRUPT IS EXPECTED.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **006**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)
> ---or---
> A-A2N2 CARD (WORK STATION CONTROLLER)

007

RUN TC054 CONTROLLER BRANCH AND LINK TEST.
THIS TEST TESTS THE CONTROLLER MICRO
INTERRUPT. IT WAITS 10 MILLISECONDS BEFORE
THE INTERRUPT IS EXPECTED.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

B C

008
Bad card
A-A2M2 CARD (WORK STATION ATTACHMENT)

009

RUN TC055 CONTROLLER LONG TIME-OUT TEST.
THIS TEST TESTS THE LONG TIME-OUT FACILITY
OF THE ATTACHMENT.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **010**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)

011

RUN TC056 CONTROLLER LONG TIME-OUT TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
DISABLE THE LONG TIMEOUT COUNTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **012**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)

013

RUN TC057 CONTROLLER LONG TIME-OUT TEST.
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
RESET THE LONG TIMEOUT COUNTER.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **014**
> Bad card
> A-A2M2 CARD (WORK STATION ATTACHMENT)

3
D

MAP 1111-2

015
@
Go To Map 1113, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1111	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	023	1115	A

001
(Entry Point A)

RUN TC058 CONTROLLER BRANCH VIA DAR TEST
THIS TEST TESTS THE CONTROLLER'S ABILITY TO
EXECUTE THE BRANCH THROUGH DATA ADDRESS
REGISTER (DAR) INSTRUCTION.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE
REFERENCED FROM THE CE PANEL WHEN USING
THE SPECIAL TUSELECT DESCRIBED IN THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

002
THE BRANCH THROUGH DAR INSTRUCTION OF
THE CONTROLLER HAS FAILED.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

003

RUN TC059 CONTROLLER, AI, AND ACYR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

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2 2
A B

004

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

005

RUN TC05A CONTROLLER, SR, AND SCYR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

006

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

007

RUN TC05B CONTROLLER SRS, AND SIS TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

008

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

C

009

RUN TC05C CONTROLLER AND CR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

010

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

011

RUN TC05D CONTROLLER NR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

012

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

013

RUN TC05E CONTROLLER NI TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

014

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

015

RUN TC05F CONTROLLER AND NRH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **016**
> THE CONTROLLER HAS FAILED TO EXECUTE ONE
> OF ITS INSTRUCTIONS CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

017

RUN TC060 CONTROLLER NIH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **018**
> THE CONTROLLER HAS FAILED TO EXECUTE ONE
> OF ITS INSTRUCTIONS CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

019

RUN TC061 CONTROLLER, CR, AND NRS TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **020**
> THE CONTROLLER HAS FAILED TO EXECUTE ONE
> OF ITS INSTRUCTIONS CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

E

021

RUN TC062 CONTROLLER, CR, AND NRS TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **022**
> THE CONTROLLER HAS FAILED TO EXECUTE ONE
> OF ITS INSTRUCTIONS CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

023
@
Go To Map 1115, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1113	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	021	1116	A

001
(Entry Point A)

RUN TC063 CONTROLLER, CR, AND NRHS TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE
REFERENCED FROM THE CE PANEL WHEN USING
THE SPECIAL TUSELECT DESCRIBED IN THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

> **002**
> THE CONTROLLER HAS FAILED TO EXECUTE ONE
> OF ITS INSTRUCTIONS CORRECTLY.
> Bad card
> A-A2N2 CARD (WORK STATION CONTROLLER)

003

RUN TC064 CONTROLLER, CR, AND NIHS TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

2 2
A B

004

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

005

RUN TC065 CONTROLLER OR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

006

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

007

RUN TC066 CONTROLLER OI TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

008

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

C

009

RUN TC067 CONTROLLER ORH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

010

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

011

RUN TC068 CONTROLLER OIH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

012

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

013

RUN TC069 CONTROLLER XR TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

014

THE CONTROLLER HAS FAILED TO EXECUTE ONE
OF ITS INSTRUCTIONS CORRECTLY.
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

3
D

D
2

015

021
@
Go To Map 1116, Entry Point A.

RUN TC06A CONTROLLER XI TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

  016
  THE CONTROLLER HAS FAILED TO EXECUTE ONE
  OF ITS INSTRUCTIONS CORRECTLY.
  Bad card
  A-A2N2 CARD (WORK STATION CONTROLLER)

017

RUN TC06B CONTROLLER XRH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

  018
  THE CONTROLLER HAS FAILED TO EXECUTE ONE
  OF ITS INSTRUCTIONS CORRECTLY.
  Bad card
  A-A2N2 CARD (WORK STATION CONTROLLER)

019

RUN TC06C CONTROLLER XIH TEST.
THIS TEST TESTS MISCELLANEOUS INSTRUCTIONS
NOT USED IN THE PRECEDING TESTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

  020
  THE CONTROLLER HAS FAILED TO EXECUTE ONE
  OF ITS INSTRUCTIONS CORRECTLY.
  Bad card
  A-A2N2 CARD (WORK STATION CONTROLLER)

E

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1115	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	019	1117	A

001
```
*<-------------------------->*
*Level 1 A-A1 board does not *
*have a card in the B2 posi- *
*tion.                       *
*Level 2 A-A1 board has a    *
*card in the B2 position.    *
*<-------------------------->*
```

(Entry Point A)

RUN TC06D CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

    002
    THE CONTROLLER HAS FAILED TO CYCLE-STEAL
    DATA CORRECTLY.
    Bad card
    A-A2M2 card (work station attachment)
    ---or---
    A-A1L2 card (multiplex port 0 card) Level 1 board
    ---or---
    A-A1H2 CARD (MULTIPLEX PORT 0 CARD) Level
    2 board

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE
REFERENCED FROM THE CE PANEL WHEN USING
THE SPECIAL TUSELECT DESCRIBED IN THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2M2 card (work station attachment)

2
A

003

RUN TC06E CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

> **004**
> THE CONTROLLER HAS FAILED TO CYCLE-STEAL
> DATA CORRECTLY.
> Bad card
> A-A2M2 card (work station attachment)
> ---or---
> A-A1L2 CARD (CHANNEL CARD) Level 1 board
> ---or---
> A-A1H2 CARD (CHANNEL CARD) Level 2 board

005

RUN TC06F CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

> **006**
> THE CONTROLLER HAS FAILED TO CYCLE-STEAL
> DATA CORRECTLY.
> Bad card
> A-A2M2 card (work station attachment)

B

007

RUN TC070 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

> **008**
> THE CONTROLLER HAS FAILED TO CYCLE-STEAL
> DATA CORRECTLY.
> Bad card
> A-A2M2 card (work station attachment)

009

RUN TC071 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

> **010**
> THE CONTROLLER HAS FAILED TO CYCLE-STEAL
> DATA CORRECTLY.
> Bad card
> A-A2M2 card (work station attachment)

011

RUN TC072 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF WORK STATION
CONTROLLER TO CYCLE-STEAL DATA TO (OR
FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

3 3
C D

012

THE CONTROLLER HAS FAILED TO CYCLE-STEAL
DATA CORRECTLY.
Bad card
A-A2M2 card (work station attachment)

013

RUN TC073 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

014

THE CONTROLLER HAS FAILED TO CYCLE-STEAL
DATA CORRECTLY.
Bad card
A-A2M2 card (work station attachment)

015

RUN TC074 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

016

THE CONTROLLER HAS FAILED TO CYCLE-STEAL
DATA CORRECTLY.
Bad card
A-A2M2 card (work station attachment)

E

017

RUN TC075 CONTROLLER CYCLE STEAL TEST.
THIS TEST TESTS THE ABILITY OF THE WORK
STATION CONTROLLER TO CYCLE-STEAL DATA TO
(OR FROM) MAIN (OR CONTROL) STORAGE.
Did the test complete without error?
Y N

018

THE CONTROLLER HAS FAILED TO CYCLE-STEAL
DATA CORRECTLY.
Bad card
A-A2M2 card (work station attachment)

019
@
Go To Map 1117, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1116	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	008	1160	A
2	010	1199	A
2	011	1199	A

001
(Entry Point A)

RUN TC0A1 CONTROLLER P-CHK U-INT.
THIS TEST TESTS THE SERDES LOAD CAPABILITY.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2R2 CARD (DRIVER RECEIVER CARD)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

| **002**
| THE SERDES LOAD TEST HAS FAILED.
| Bad card
| A-A2M2 CARD (WORK STATION ATTACHMENT)

2
A

003

008
@
Go To Map 1160, Entry Point A.

009

RUN TC0A2 SERDES SHIFT TEST.
THIS TEST TESTS THAT THE SERDES SHIFTS
CORRECTLY.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    004
    THE SERDES SHIFT TEST HAS FAILED.
    Bad card
    A-A2M2 CARD (WORK STATION ATTACHMENT)

005

RUN TC0A5 W/S MDI VALID STOP DISPLAY.
THIS TEST PROVIDES A DISPLAY ON THE SYSTEM
CONSOLE TO INFORM THE CE THAT HE HAS
REACHED THE NTF POINT.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    010

    Go To Map 1199, Entry Point A.

011

RUN TC0A3 DRIVER/RECEIVER ACTIVITY CHECK.
THIS TEST TESTS THE ADDRESSING OF DRIVERS
AND RECEIVERS AND THE DRIVER-RECEIVER
ACTIVITY REGISTER (DRAR).
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    006
    THE TEST OF THE DRIVER RECIEVER ACTIVITY
    REGISTER HAS FAILED.
    Bad card

    A-A2R2 CARD (DRIVER RECEIVER CARD)
    ---or---
    A-A2M2 CARD (WORK STATION ATTACHMENT)

007

Go To Map 1199, Entry Point A.

RUN TC0A4 W/S CONSOLE POLL.
THIS TEST POLLS THE SYSTEM CONSOLE AND
DETERMINES IF THE CONSOLE RESPONDS
CORRECTLY.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

B C

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1101	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1122	A
1	002	1125	A
2	004	1127	A
2	006	1129	A

001
(Entry Point A)

RUN TC007 CONTROLLER LOAD SET/RESET.
THIS TEST SETS AND RESETS THE CONTROLLER
LOAD LATCH.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE
REFERENCED FROM THE CE PANEL WHEN USING
THE SPECIAL TUSELECT DESCRIBED IN THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2N2 CARD (WORK STATION CONTROLLER)

DID THE TEST COMPLETE WITHOUT ERROR?
Y N

  002
  @
  Go To Map 1125, Entry Point A.

2
A

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EC 832999   PEC 832850

MAP 1121-1

003

RUN TC008 SINGLE CYCLE SET/RESET.
THIS TEST SETS AND RESETS THE CONTROLLER
CONSOLE CHECK LATCH.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    004
    @
    Go To Map 1127, Entry Point A.

005

RUN TC009 CONTROLLER RESET SET/RESET.
THIS TEST SETS AND RESETS THE CONTROLLER
RESET LATCH AND TESTS THE RESULTS.
DID THE TEST COMPLETE WITHOUT ERROR?
Y N

    006
    @
    Go To Map 1129, Entry Point A.

007
@
Go To Map 1122, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1121	A	1	001

001
(Entry Point A)

PROBE
CONTROLLER ERROR A-A2M2W08

UP LIGHT: OFF
DOWN LIGHT: ON

MAP DESCRIPTION:

THIS MAP ISOLATES THE FAILURE OF THE ADAPTER RESET FUNCTION TO EITHER THE CONTROLLER CARD OR THE ATTACHMENT CARD. ALL LINES EXCEPT ONE, THE CONTROLLER ERROR, HAVE ALREADY BEEN ELIMINATED.

START CONDITIONS:

FAILURE OF GOOD MACHINE PATH (ENTRY IS MAP 1198)

LOGIC CARDS TESTED:
A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2N2 CARD (WORK STATION CONTROLLER)

ARE THE LIGHTS CORRECT?
Y N

 002
 REMOVE
 TOP CARD CONNTECTOR 'W' ON CARD A-A2N2
 PROBE
 CONTROLLER ERROR A-A2M2W08

 UP LIGHT: OFF
 DOWN LIGHT: ON

 ARE THE LIGHTS CORRECT?
 Y N

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2 2 2
A B C

003

BAD CARD

A-A2N2 CARD (WORK STATION CONTROLLER)

004

BAD CARD

A-A2M2 CARD (WORK STATION ATTACHMENT)

005

BAD CARD

A-A2M2 CARD (WORK STATION ATTACHMENT)

MAP 1125-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1101	A	1	001
1121	A	1	001

001
(Entry Point A)

Remove the
Top card connector 'W' on card A-A2N2.
-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C007'.

Probe
Controller load A-A2M2W28.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  002
  Bad card
  A-A2M2 card (work station attachment).

003
Bad card
A-A2N2 card (work station controller).

MAP DESCRIPTION:

This MAP isolates the failure of the controller load latch
to either the
A-A2M2 card (work station attachment).
or the
A-A2N2 card (work station controller).

START CONDITIONS:

Good machine path has failed (entry is MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1101	A	1	001
1121	A	1	001

001
(Entry Point A)

Remove the
Top card connector 'W' on card A-A2N2.
-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C008'.

Probe
Single cycle A-A2M2W30.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  002
  Bad card
  A-A2M2 card (work station attachment).

003
Bad card
A-A2N2 card (work station controller).

MAP DESCRIPTION:

This MAP isolates the failure of the single cycle latch to either the
A-A2M2 card (work station attachment).
or the
A-A2N2 card (work station controller).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1101	A	1	001
1121	A	1	001

001
(Entry Point A)

Remove the
Top card connector 'W' on card A-A2N2.
-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
loop test X'C009'.

Probe
Controller reset A-A2M2W29.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **002**
> Bad card
> A-A2M2 card (work station attachment).

003
Bad card
A-A2N2 card (work station controller).

MAP DESCRIPTION:

This MAP isolates the failure of the controller reset latch to either the
A-A2M2 card (work station attachment).
or the
A-A2N2 card (work station controller).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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EC 832999   PEC 832850
MAP 1129-1

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	005	1131	A
3	017	1132	A
2	014	1133	A
2	011	1134	A
2	008	1135	A
3	016	1141	A
2	013	1141	A
2	010	1141	A
2	007	1141	A

001
(Entry Point A)

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS
AND TESTS
BIT 0.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE
REFERENCED FROM THE CE PANEL WHEN USING
THE SPECIAL TUSELECT DESCRIBED IN THE
DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2N2 CARD (WORK STATION CONTROLLER)

IS BIT 0 FAILING?
Y N

3 2
A B

05JUN78   PN 4237552

EC 832999   PEC 832850

MAP 1130-1

002

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS
AND TESTS
BIT 1.
IS BIT 1 FAILING?
Y N

 003

 RUN TC00B CONTROLLER DBO/DBI WRAP.
 THIS TEST WRAPS THE CONTROLLER'S DATA
 BUS AND TESTS
 BIT 2.
 IS BIT 2 FAILING?
 Y N

  004

  RUN TC00B CONTROLLER DBO/DBI WRAP.
  THIS TEST WRAPS THE CONTROLLER'S DATA
  BUS AND TESTS
  BIT 3.
  IS BIT 3 FAILING?
  Y N

   005
   @
   Go To Map 1131, Entry Point A.

  006

  RUN TC00B CONTROLLER DBO/DBI WRAP.
  THIS TEST WRAPS THE CONTROLLER'S DATA
  BUS AND TESTS
  THAT NO OTHER BITS ARE FAILING.
  IS ONLY BIT 3 FAILING?
  Y N

C D E F

007
@
Go To Map 1141, Entry Point A.

008
@
Go To Map 1135, Entry Point A.

009

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA
BUS AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 2 FAILING?
Y N

 010
 @
 Go To Map 1141, Entry Point A.

011
@
Go To Map 1134, Entry Point A.

012

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS
AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 1 FAILING?
Y N

 013
 @
 Go To Map 1141, Entry Point A.

014
@
Go To Map 1133, Entry Point A.

MAP 1130-3

DATA BUS TEST 1

5340 SYSTEMS UNIT

PAGE 3 OF 3

A
1

015

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS
AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 0 FAILING?
Y N

  016
  @
  Go To Map 1141, Entry Point A.

017
@
Go To Map 1132, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	017	1136	A
2	014	1137	A
2	011	1138	A
2	008	1139	A
2	005	1140	A
3	016	1141	A
2	013	1141	A
2	010	1141	A
2	007	1141	A

001
(Entry Point A)

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
BIT 4.

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2M2 CARD (WORK STATION ATTACHMENT)
A-A2N2 CARD (WORK STATION CONTROLLER)

IS BIT 4 FAILING?
Y N

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3 2
A B

MAP 1131-1

002

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
BIT 5.
IS BIT 5 FAILING?
Y N

  003

  RUN TC00B CONTROLLER DBO/DBI WRAP.
  THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
  BIT 6.
  IS BIT 6 FAILING?
  Y N

    004

    RUN TC00B CONTROLLER DBO/DBI WRAP.
    THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
    BIT 7.
    IS BIT 7 FAILING?
    Y N

      005
      @
      Go To Map 1140, Entry Point A.

    006

    RUN TC00B CONTROLLER DBO/DBI WRAP.
    THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
    THAT NO OTHER BITS ARE FAILING.
    IS ONLY BIT 7 FAILING?
    Y N

C D E F

007
@
Go To Map 1141, Entry Point A.

008
@
Go To Map 1139, Entry Point A.

009

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 6 FAILING?
Y N

  010
  @
  Go To Map 1141, Entry Point A.

011
@
Go To Map 1138, Entry Point A.

012

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 5 FAILING?
Y N

  013
  @
  Go To Map 1141, Entry Point A.

014
@
Go To Map 1137, Entry Point A.

A
1
|
015

RUN TC00B CONTROLLER DBO/DBI WRAP.
THIS TEST WRAPS THE CONTROLLER'S DATA BUS
AND TESTS
THAT NO OTHER BITS ARE FAILING.
IS ONLY BIT 4 FAILING?
Y N
|
| **016**
| @
| Go To Map 1141, Entry Point A.

017
@
Go To Map 1136, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 0, A-A2N2X11.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

    002
    TC00B is still looping.

    Probe
    Controller databus out bit 0, A-A2N2X11.

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 0).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

2 2 2
A B C

003

TC00B is still looping.

Probe
Controller databus in bit 0, A-A2N2X26.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

   004

   TC00B is still looping.

   Probe
   Controller databus in bit 0, A-A2N2X26.

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

      005

      Bad card
      A-A2N2 card (work station controller).
      ---or---
      A-A2M2 card (work station attachment).

   006

   Bad card
   A-A2M2 card (work station attachment).

007

The failure is a stuck bit on the controller's data
bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

008

Bad card
A-A2N2 card (work station controller).

009

One or more signals appear to be shorted into this data
bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 1, A-A2N2X29.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

   002
   TC00B is still looping.

   Probe
   Controller databus out bit 1, A-A2N2X29.

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

MAP DESCRIPTION:

A single bit failure has been discovered in the work station controller's data bus (bit 1).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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2 2 2
A B C

003
TC00B is still looping.

Probe
Controller databus in bit 1, A-A2N2X04.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

    004
    TC00B is still looping.

    Probe
    Controller databus in bit 1, A-A2N2X04.

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

        005
        Bad card
        A-A2N2 card (work station controller).
        ---or---
        A-A2M2 card (work station attachment).

    006
    Bad card
    A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 2, A-A2N2X10.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **002**
> TC00B is still looping.
>
> Probe
> Controller databus out bit 2, A-A2N2X10.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 2).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

2 2 2
A B C

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003
TC00B is still looping.

Probe
Controller databus in bit 2, A-A2N2X25.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

    004
    TC00B is still looping.

    Probe
    Controller databus in bit 2, A-A2N2X25.

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

        005
        Bad card
        A-A2N2 card (work station controller).
        ---or---
        A-A2M2 card (work station attachment).

    006
    Bad card
    A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data
bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data
bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 3, A-A2N2X32.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 3).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

> **002**
> TC00B is still looping.
>
> Probe
> Controller databus out bit 3, A-A2N2X32.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N

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2 2 2
A B C

C
1

DATA BUS WRAP BIT 3

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A B D
1 1 1

MAP 1135-2

003
TC00B is still looping.

Probe
Controller databus in bit 3, A-A2N2X03.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

   004
   TC00B is still looping.

   Probe
   Controller databus in bit 3, A-A2N2X03.

   Up   Light: Off
   Down Light: Off

   Are the lights correct?
   Y N

      005
      Bad card
      A-A2N2 card (work station controller).
      ---or---
      A-A2M2 card (work station attachment).

   006
   Bad card
   A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data
bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data
bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1131	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 4, A-A2N2X12.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **002**
> TC00B is still looping.
>
> Probe
> Controller databus out bit 4, A-A2N2X12.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 4).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

2 2 2
A B C

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003
TC00B is still looping.

Probe
Controller databus in bit 4, A-A2N2X22.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **004**
> TC00B is still looping.
>
> Probe
> Controller databus in bit 4, A-A2N2X22.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Bad card
> > A-A2N2 card (work station controller).
> > ---or---
> > A-A2M2 card (work station attachment).
>
> **006**
> Bad card
> A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1131	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 5, A-A2N2X31.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

002
TC00B is still looping.

Probe
Controller databus out bit 5, A-A2N2X31.

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 5).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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2 2 2
A B C

003
TC00B is still looping.

Probe
Controller databus in bit 5, A-A2N2X06.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **004**
> TC00B is still looping.
>
> Probe
> Controller databus in bit 5, A-A2N2X06.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**
>
> > **005**
> > Bad card
> > A-A2N2 card (work station controller).
> > ---or---
> > A-A2M2 card (work station attachment).
>
> **006**
> Bad card
> A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1131	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 6, A-A2N2X33.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **002**
> TC00B is still looping.
>
> Probe
> Controller databus out bit 6, A-A2N2X33.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> **Y N**

MAP DESCRIPTION:

A single bit failure has been found in the work station
controller's data bus, (bit 6).

START CONDITIONS:
The good machine path has failed (Entry is through
MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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2 2 2
A B C

003
TC00B is still looping.

Probe
Controller databus in bit 6, A-A2N2X24.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **004**
> TC00B is still looping.
>
> Probe
> Controller databus in bit 6, A-A2N2X24.
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Bad card
> > A-A2N2 card (work station controller).
> > ---or---
> > A-A2M2 card (work station attachment).
>
> **006**
> Bad card
> A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1131	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit 7, A-A2N2X13.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

    002
    TC00B is still looping.

    Probe
    Controller databus out bit 7, A-A2N2X13.

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit 7).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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2 2 2
A B C

003
TC00B is still looping.

Probe
Controller databus in bit 7, A-A2N2X05.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

    004
    TC00B is still looping.

    Probe
    Controller databus in bit 7, A-A2N2X05.

    Up   Light: Off
    Down Light: Off

    Are the lights correct?
    Y N

        005
        Bad card
        A-A2N2 card (work station controller).
        ---or---
        A-A2M2 card (work station attachment).

    006
    Bad card
    A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to consider these cards.
Go To Map 1141, Entry Point A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1131	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	007	1141	A
2	009	1141	A

001
(Entry Point A)

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00B'.

Probe
Controller databus out bit P, A-A2N2X30.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

002
TC00B is still looping.

Probe
Controller databus out bit P, A-A2N2X30.

Up   Light: Off
Down Light: Off

Are the lights correct?
Y N

MAP DESCRIPTION:

A single bit failure has been found in the work station controller's data bus (bit P).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
A-A2N2 card (work station controller).

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MAP 1140-1

2 2 2
A B C

C
1

DATA BUS WRAP BIT P

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A B D
1 1 1

MAP 1140-2

003
TC00B is still looping.

Probe
Controller databus in bit P, A-A2N2X23.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **004**
> TC00B is still looping.
>
> Probe
> Controller databus in bit P, A-A2N2X23.
>
>
> Up   Light: Off
> Down Light: Off
>
> **Are the lights correct?**
> Y N
>
> > **005**
> > Bad card
> > A-A2N2 card (work station controller).
> > ---or---
> > A-A2M2 card (work station attachment).
>
> **006**
> Bad card
> A-A2M2 card (work station attachment).

007
The failure is a stuck bit on the controller's data
bus in.
This could be caused by the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

008
Bad card
A-A2N2 card (work station controller).

009
One or more signals appear to be shorted into this data
bus bit. The cards that could cause this are
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
The next MAP expands the scope of the test to
consider these cards.
Go To Map 1141, Entry Point A.

D

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1130	A	1	001
1131	A	1	001
1132	A	1	001
1133	A	1	001
1134	A	1	001
1135	A	1	001
1136	A	1	001
1137	A	1	001
1138	A	1	001
1139	A	1	001
1140	A	1	001

001
(Entry Point A)

Remove
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.
-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00B'.

(Step 001 continues)

MAP DESCRIPTION:
The data bus wrap has failed with more than one bit stuck on or off.

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

(Step 001 continued)

The test is complete when all lights on the CE panel are Off except P1.

To obtain the results of the test see the Diagnostic Service Guide 99-064.

Is the result of the test equal to X'0000XXXX'.

Y N

> **002**
> Bad card
> A-A2N2 card (work station controller).
> ---or---
> A-A2M2 card (work station attachment).

003
Remove
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).
Install
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.
-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00B'.
The test is complete when all lights on the CE panel are Off except P1.

To obtain the results of the test see the Diagnostic Service Guide 99-064.

Is the result of the test equal to X'0000XXXX'.

Y N

> **004**
> Bad card
> A-A2P4 card (base storage).

A

005
Is A-A2R4 card (feature storage) installed?

Y N

> **006**
> Bad card
> A-A2Q4 card (expanded storage).

007
Remove
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.

Install
A-A2Q4 card (expanded storage).
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.
-Set Power to 1 (operator panel).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00B'.
The test is complete when all lights on the CE panel are Off except P1.

To obtain the results of the test see the Diagnostic Service Guide 99-064.

Is the result of the test equal to X'0000XXXX'?

Y N

> **008**
> Bad card
> A-A2Q4 card (expanded storage).

009
Bad card
A-A2R4 card (feature storage card).

A

MAP 1141-2

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

001
```
*<------------------------->*
*Level 1 A-A1 board does not *
*have a card in the B2 posi- *
*tion.                       *
*Level 2 A-A1 board has a    *
*card in the B2 position.    *
*<------------------------->*
```

(Entry Point A)

MAP DESCRIPTION:
The interrupt level 4 micro interrupt request has failed.
The general procedure is to isolate the failure to one of
the cards that use it.
The cards are:
A-A2M2 card (work station attachment).
Card A-A1L2 (command processor multiplex Port 0).
Level 1 board
---or---
Card A-A1H2 (command processor multiplex port0
Level 2 board)
Card A-A2S2 (5211 or 3262 Line Printer attachment).

START CONDITIONS:
The good machine path has failed (Entry is through
MAP 1198).

LOGIC CARDS TESTED:
A-A2M2 card (work station attachment).
Card A-A1L2 (command processor multiplex Port 0).
Level 1 board
---or---
Card A-A1H2 (command processor multiplex port0
Level 2 board)
Card A-A2S2 (5211 or 3262 Line Printer attachment).

Is a 5211 or 3262 Line Printer installed with this system?
Y N
| |
| |
| |
| |
2 2
A B

B
1
|

002

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00C'.

Probe
Interrupt level 4 request A-A2N2M09.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

   003
   Remove
   A-A2M2 card (work station attachment).
   -Set Power to 1 (operator panel).
   Probe
   Interrupt level 4 request A-A2N2M09.

   Up   Light: Off
   Down Light: Off

   |
   Are the lights correct?
   Y N

      004
      Bad card
      A-A1L2 card (multiplex port 0 card).   Level 1
      board
      ---or---
      A-A1H2 card (multiplex port 0 card) Level 2
      board

   005
   Bad card
   A-A2M2 card (work station attachment).

C

A C
1

MAP 1143-2

006
Wring out
Interrupt level 4 request A-A2N2M09.
to the
A-A1L2 card (multiplex port 0 card). Level 1 board
---or---
A-A1H2 card (multiplex port 0 card) Level 2 board
Is the line continuous?
Y N

   007
   Repair or install a new land or crossover cable.

008
Bad card
Card A-A1L2 (command processor multiplex Port
0). Level 1 board
---or---
A-A1H2 card (multiplex port 0 card) Level 2 board

009
Using the TU select program
reference Diagnostic Service Guide 99-064.
Run 5211 Line Printer system Micro interrupt test
X'E004' or 3262 Line Printer system Micro interrupt
test X'E205'.
**The test is complete when all lights on the CE
panel are Off except P1.**

**To obtain the results of the test see the Diagnostic
Service Guide 99-064.**

**Is the result of the test equal to
X'0000XXXX'.**
Y N

3 3
D E

010
Remove Card A-A2S2 (5211 or 3262 Line Printer attachment).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00C'.
The test is complete when all lights on the CE panel are Off except P1.

To obtain the results of the test see the Diagnostic Service Guide 99-064.

Is the result of the test equal to X'0000XXXX'.
Y N

> **011**
> Install Card A-A2S2 (5211 or 3262 Line Printer attachment).
> Remove the
> A-A2M2 card (work station attachment).
> -Set Power to 1 (operator panel).
>
> Using the TU select program
> reference Diagnostic Service Guide 99-064.
> Run test X'E004'.
> **The test is complete when all lights on the CE panel are Off except P1.**
>
> **To obtain the results of the test see the Diagnostic Service Guide 99-064.**
>
> **Is the result of the test equal to X'0000XXXX'?**
> Y N
>
> > **012**
> > Bad card
> > Card A-A1L2 (command processor multiplex Port 0). Level 1 board
> > ---or---
> > A-A1H2 card (multiplex port 0 card) Level 2 board

013
Bad card
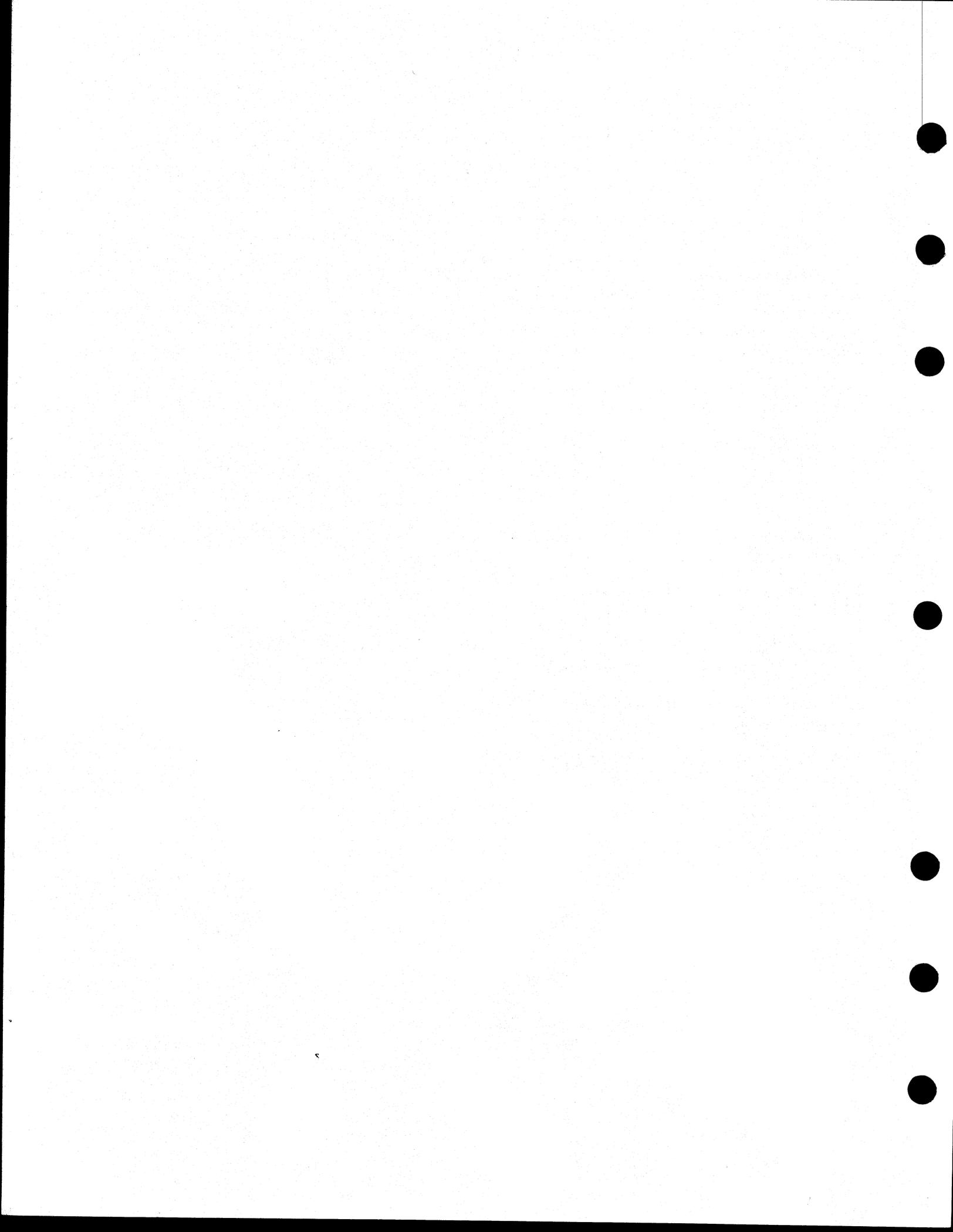A-A2M2 card (work station attachment).

014
Bad card
Card A-A2S2 (5211 or 3262 Line Printer attachment).

015
Bad card
A-A2M2 card (work station attachment).

F G

MAP 1145-1

CONTROLLER SAR,IAR

5340 SYSTEMS UNIT

PAGE 1 OF 6

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

001
(Entry Point A)

Probe
16MHZ oscillator A-A2N2J02.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

002
Remove the
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).

You do not have to reinstall the top card connectors
on.
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

-Set Power to 1 (operator panel).

Probe
16MHZ oscillator A-A2N2J02.
(Step 002 continues)

2
A

MAP DESCRIPTION:

A wrap of the work station controller's storage address
register has failed.

START CONDITIONS:
The good machine path has failed (Entry is through
MAP 1198).

LOGIC CARDS TESTED:
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

MAP 1145-1

(Step 002 continued)

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **003**
> Bad card
> A-A2R2 card (driver receiver card)

004
Install
A-A2N2 card (work station controller).
-Set Power to 1 (operator panel).

Probe
16MHZ oscillator A-A2N2J02.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **005**
> Bad card
> A-A2N2 card (work station controller).

006
Bad card
A-A2M2 card (work station attachment).

A
1

007
Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00D'.
Probe
Start controller A-A2M2W27.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

> **008**
> Leave the power on the system and remove
> Top card connector 'W' on card A-A2N2.
>
> Probe
> Start controller A-A2M2W27.
>
>
> Up   Light: On
> Down Light: On
>
> **Are the lights correct?**
> **Y N**
>
> > **009**
> > Bad card
> > A-A2M2 card (work station attachment).
>
> **010**
> Bad card
> A-A2N2 card (work station controller).

3
B

B
2

011
Probe
Expanded SAR bit 2, A-A2N2P02.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  012
  Probe
  Expanded SAR bit 2, A-A2N2P02.

  Up   Light: Off
  Down Light: Off

  Are the lights correct?
  Y N

    013
    Remove
    Top card connector 'Y' on card A-A2N2.
    Top card connector 'Z' on card A-A2N2.
    -Set Power to 1 (operator panel).

    Using the TU select program
    reference Diagnostic Service Guide 99-064.
    loop test X'C00D'

    Probe
    Expanded SAR bit 2, A-A2N2P02.

    Up   Light: On
    Down Light: On

    Are the lights correct?
    Y N

4 4
C D E F

E F

014
Bad card
A-A2N2 card (work station controller).
---or---
A-A2M2 card (work station attachment).

015
Remove
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

Install
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.
-Set Power to 1 (operator panel).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00D'.

Probe
Expanded SAR bit 2, A-A2N2P02.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  016
  Bad card
  A-A2P4 card (base storage).

017
Is a A-A2R4 card (feature storage) installed?
Y N

  018
  Bad card
  A-A2Q4 card (expanded storage).

4
G

019
Remove
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.

Install
A-A2Q4 card (expanded storage).
Top card connector 'Y' on card A-A2N2.
Top card connector 'Z' on card A-A2N2.
-Set Power to 1 (operator panel).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00D'

Probe
Expanded SAR bit 2, A-A2N2P02.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

| **020**
| Bad card
| A-A2Q4 card (expanded storage).

021
Bad card
A-A2R4 card (feature storage card).

022
Bad card
A-A2N2 card (work station controller).

023
Probe
Start controller A-A2M2W27.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

| **024**
| Probe
| Start controller A-A2M2W27.
|
| Up   Light: Off
| Down Light: Off
|
| **Are the lights correct?**
| Y N
|
| | **025**
| | Remove
| | A-A2N2 card (work station controller).
| | -Set Power to 1 (operator panel).
| |
| | Using the TU select program
| | reference Diagnostic Service Guide 99-064.
| | Loop test X'C00D'.
| |
| | Probe
| | Start controller A-A2M2W27.
| |
| | Up   Light: On
| | Down Light: On
| |
| | **Are the lights correct?**
| | Y N
| |
| | | **026**
| | | Bad card
| | | A-A2M2 card (work station attachment).

5 5 5
H J K

15DEC78   PN 4237565

EC 834777   PEC 832999

MAP 1145-4

H J K
4 4 4

027
Bad card
A-A2N2 card (work station controller).

028
Bad card
A-A2M2 card (work station attachment).

029
Probe
Controller reset A-A2M2W29.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  030
  Probe
  Controller reset A-A2M2W29.

  Up   Light: Off
  Down Light: Off

  Are the lights correct?
  Y N

    031
    Remove
    A-A2N2 card (work station controller).

    -Set Power to 1 (operator panel).

    Using the TU select program
    reference Diagnostic Service Guide 99-064.
    Loop test X'C00D'.

    Probe
    Controller reset A-A2M2W29.

    Up   Light: On
    Down Light: On
    (Step 031 continues)

L M

L M

(Step 031 continued)

Are the lights correct?
Y N

  032
  Bad card
  A-A2M2 card (work station attachment).

  033
  Bad card
  A-A2N2 card (work station controller).

034
Bad card
A-A2M2 card (work station attachment).

035
Probe
Controller load A-A2M2W28.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  036
  Probe
  Controller load A-A2M2W28.

  Up   Light: Off
  Down Light: Off

  Are the lights correct?
  Y N

6 6 6
N P Q

N P Q
5 5 5

CONTROLLER SAR,IAR

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MAP 1145-6

PAGE 6 OF 6

037
Remove
A-A2N2 card (work station controller).

-Set Power to 1 (operator panel).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Loop test X'C00D'.

Probe
Controller load A-A2M2W28.

Up   Light: On
Down Light: On

Are the lights correct?
Y N

  038
  Bad card
  A-A2M2 card (work station attachment).

039
Bad card
A-A2N2 card (work station controller).

040
Bad card
A-A2M2 card (work station attachment).

041
Bad card
A-A2N2 card (work station controller).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

001
(Entry Point A)

This MAP uses swapping between card locations as a diagnostic tool.   Reinstall all cards to their original locations when done with this MAP.

Remove
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

Reinstall the top card connectors.

-Set Power to 1 (operator panel).

Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00E'.

The test is complete when all lights on the CE panel are Off except P1.

To obtain the results of the test see the Diagnostic Service Guide 99-064.

Is the result of the test equal to
X'0000XXXX'?
Y N
```
| |
| |
| |
| |
| |
| |
2 2
A B
```

MAP DESCRIPTION:

The controller is failing to run a microprogram loaded into it. The probable failure is the
A-A2N2 card (work station controller).
But other possibilities are
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

START CONDITIONS:
The good machine path has failed (Entry is through MAP 1198).

LOGIC CARDS TESTED:
A-A2N2 card (work station controller).
A-A2M2 card (work station attachment).
A-A2P4 card (base storage).
A-A2Q4 card (expanded storage).
A-A2R4 card (feature storage card if installed).

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B
1

|

002

-Set Power to 0 (operator panel).

Exchange the card you have already removed with
A-A2P4 card (base storage).
Reinstall the top card connectors.

-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X'C00E'.
**The test is complete when all lights on the CE
panel are Off except P1.**

**To obtain the results of the test see the Diagnostic
Service Guide 99-064.**

**Is the result of the test equal to
X'0000XXXX'?**
Y N

  003
  The
  A-A2P4 card (base storage).
  A-A2Q4 card (expanded storage).
  A-A2R4 card (feature storage card if installed).
  are now eliminated from consideration. Remaining
  are the
  A-A2N2 card (work station controller).
  and
  A-A2M2 card (work station attachment).

  Probe
  Controller interrupt timeout A-A2N2X02.

  Up   Light: Off
  Down Light: On

  Are the lights correct?
  Y N

C D E

A C D E
1

004
-Set Power to 0 (operator panel).
Remove
A-A2N2 card (work station controller).
Power up
Probe
Controller interrupt timeout A-A2N2X02.

Up   Light: Off
Down Light: On

Are the lights correct?
Y N

  005
  Bad card
  A-A2M2 card (work station attachment).

006
Bad card
A-A2N2 card (work station controller).

007
Bad card
A-A2N2 card (work station controller).
---or---
A-A2M2 card (work station attachment).

008
Bad card
A-A2P4 card (base storage).

009
Is A-A2R4 card (feature storage) installed?
Y N

010
Bad card
A-A2Q4 card (expanded storage).

011
Install
A-A2Q4 card (expanded storage).

Reinstall the top card connectors.

-Set Power to 1 (operator panel).
Using the TU select program
reference Diagnostic Service Guide 99-064.
Run test X 'C00E'.
**The test is complete when all lights on the CE
panel are Off except P1.**

**To obtain the results of the test see the Diagnostic
Service Guide 99-064.**

**Is the result of the test equal to
X'0000XXXX'?**
Y N

  012
  Bad card
  A-A2Q4 card (expanded storage).
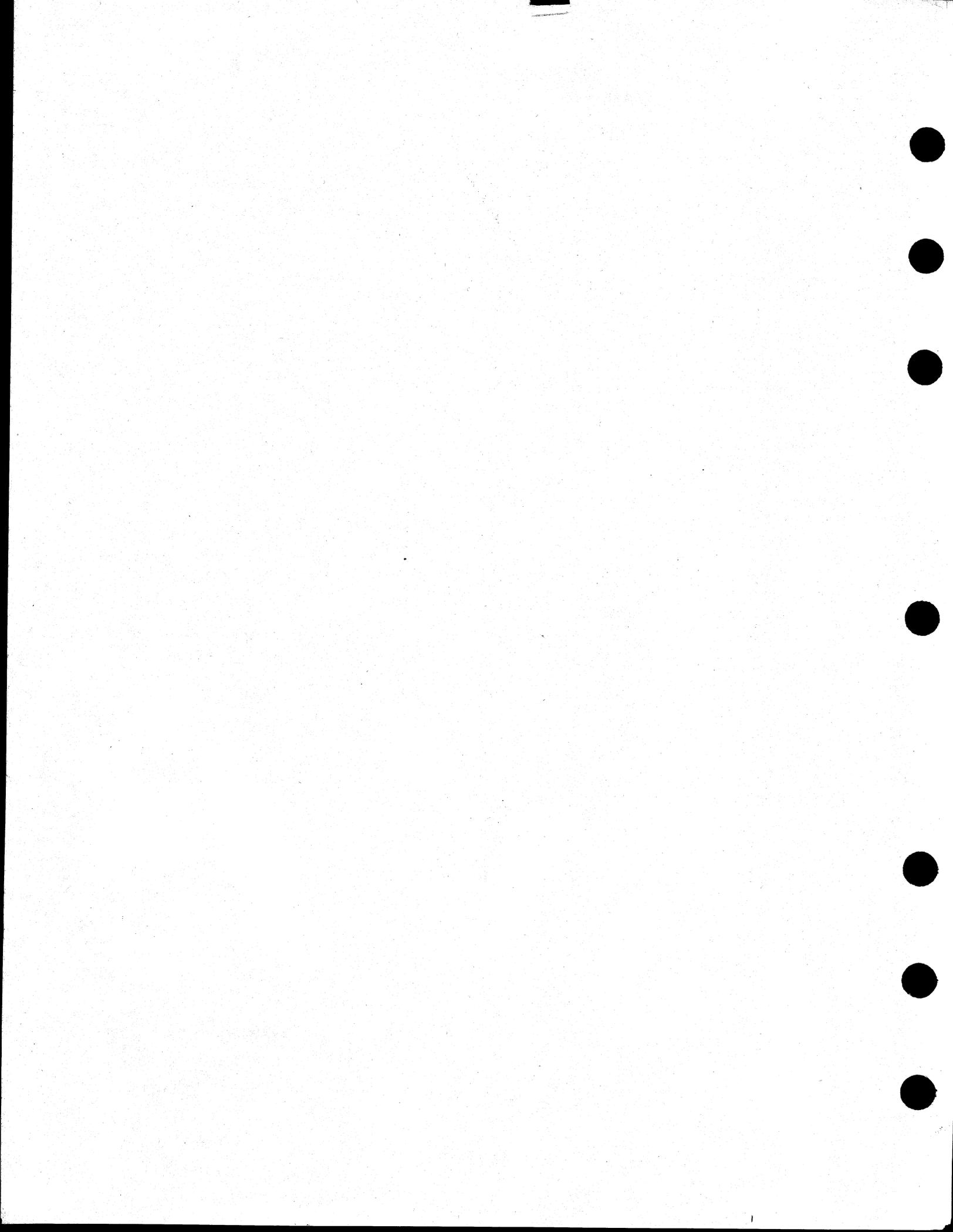
013
Bad card
A-A2R4 card (feature storage card).

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
1103	A	1	001

001
(Entry Point A)

RUN TC020 CONTROLLER 4-BIT BUS.
TEST THE 4 BIT DATA PATHS
STACK DATA BUS BIT 3 GROUNDED
ALU DATA BUS BIT 3 OPEN
ASSEMBLY DATA BUS BIT 3 OPEN

START CONDITIONS:

ENTRY IS THROUGH MAP 1198

MAP DESCRIPTION:

THIS IS A HARD COPY OF A MDI MAP TO BE REFERENCED FROM THE CE PANEL WHEN USING THE SPECIAL TUSELECT DESCRIBED IN THE DIAGNOSTIC SERVICE GUIDE 99-064

LOGIC CARDS TESTED:

A-A2N2 CARD (WORK STATION CONTROLLER)
A-A2M2 CARD (WORK STATION ATTACHMENT)

IS BIT 3 FAILING?
Y N

  002

  RUN TC020 CONTROLLER 4=BIT BUS.
  TEST THE 4 BIT DATA PATHS
  STACK DATA BUS BIT 2 GROUNDED
  ALU DATA BUS BIT 2 OPEN
  ASSEMBLY DATA BUS BIT 2 OPEN
  IS BIT 2 FAILING?
  Y N

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3 3 2
A B C

003

RUN TC020 CONTROLLER 4-BIT BUS.
TEST THE 4 BIT DATA PATHS
STACK DATA BUS BIT 1 GROUNDED
ALU DATA BUS BIT 1 OPEN
ASSEMBLY DATA BUS BIT 1 OPEN
IS BIT 1 FAILING?
Y N

  004

  RUN TC020 CONTROLLER 4-BIT BUS.
  TEST THE 4 BIT DATA PATHS
  STACK DATA BUS BIT 0 GROUNDED
  ALU DATA BUS BIT 0 OPEN
  ASSEMBLY DATA BUS BIT 0 OPEN
  IS BIT 0 FAILING?
  Y N

    005

    RUN TC020 CONTROLLER 4=BIT BUS.
    TEST THE 4 BIT DATA PATHS
    STACK DATA BUS BIT 3 OPEN

    ALU DATA BUS BIT 3 GROUNDED
    ASSEMBLY DATA BUS BIT 3 GROUNDED
    IS BIT 3 FAILING?
    Y N

3 3 3
D E F G

006

RUN TC020 CONTROLLER 4-BIT BUS.
TEST THE 4 BIT DATA PATHS
STACK DATA BUS BIT 2 OPEN

ALU DATA BUS BIT 2 GROUNDED
ASSEMBLY DATA BUS BIT 2 GROUNDED
IS BIT 2 FAILING?
Y N

  007

  RUN TC020 CONTROLLER 4=BIT BUS.
  TEST THE 4 BIT DATA PATHS
  STACK DATA BUS BIT 1 OPEN

  ALU DATA BUS BIT 1 GROUNDED
  ASSEMBLY DATA BUS BIT 1 GROUNDED
  IS BIT 1 FAILING?
  Y N

    008

    RUN TC020 CONTROLLER 4-BIT BUS.
    TEST THE 4 BIT DATA PATHS
    STACK DATA BUS BIT 0 OPEN

    ALU DATA BUS BIT 0 GROUNDED
    ASSEMBLY DATA BUS BIT 0 GROUNDED
    IS BIT 0 FAILING?
    Y N

      009
      Bad card
      A-A2N2 CARD (WORK STATION CONTROLLER)
      ---or---
      A-A2M2 CARD (WORK STATION ATTACHMENT)

3 3 3
H J K

MAP 1149-2

MAP 1149-3

```
D  E  F  H  J  K       DATAPATH FAILURE TST          A  B
2  2  2  2  2  2                                      1  1
                       5340 SYSTEMS UNIT

                       PAGE  3 OF  3
```

010
Bad card
A-A2N2   CARD   (WORK   STATION
CONTROLLER)

011
Bad card
A-A2N2   CARD   (WORK   STATION
CONTROLLER)

012
Bad card
A-A2N2   CARD   (WORK   STATION
CONTROLLER)

013
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

014
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

015
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

016
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)

017
Bad card
A-A2N2 CARD (WORK STATION CONTROLLER)