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M.S. J-10
HED AZ07

February, 1984
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DPS-8 Low Profile Single System Module
Figure 1-1
16 megabytes

8-52/62
2 sys. console
4 meg words

8-70
4 CPU, IOU, MMU
4 meg words
8 FNP
4 system console

CENTRAL SYSTEM

DPU SUBSYSTEM

SYSTEM CONSOLE

MICROPROGRAMMED
PERIPHERAL
CONTROLLER

DISK DRIVE

HONEYWELL CONFIDENTIAL AND PROPRIETARY
System Components
Figure 1-2

TAPE DRIVE
CPU CABINET PANELS

In the single system module, the CPU cabinet is to the extreme right as illustrated here. The operator's Control Panel is mounted on the front of the right door.

Also illustrated on this page are the Zone location designators, Maintenance Panel connector, and CPU Configuration Panel. The CPU Configuration Panel is located on the inside of the left door. Refer to the Test and Repair Manual, 58009927, for more information.

The CPU cabinet Zone V contains the cabinet power panels.
MMU CABINET PANELS

In the single system module configuration, the MMU cabinet is the center cabinet. The Operator's Panel, Maintenance Panel connector plate, Syndrome Panel, SCU Configuration Panel, and SCU Maintenance Panel are illustrated on this page. The syndrome and SCU panels are located on the inside of the left door. Refer to the Test and Repair Manual, 58009927, for more information.

Cabinet Zone V contains the cabinet power panels.
IOM CABINET PANELS

The IOM Cabinet Panel locations illustrated here are those in the single system module. Also illustrated are the cabinet zone locations designators, Operator's Control Panel, Maintenance Panel Connector, and IOM Configuration and Bootload Panels located on the inside of the left door. Refer to the Test and Repair Manual, 56009927, for more information.

IOM Cabinet Zone V contains the power panels.

**Configuration Panel**

**IOM Configuration**

**Store Size**

**Base Address**

**Bootload**

**Operator's Control Panel (Q01)**

**IOM Cabinet**

LEFT DOOR OPEN, RIGHT DOOR REMOVED

**Maintenance Panel Connector**

**IOU Cabinet Panels**

Figure 1-5

7/8
<table>
<thead>
<tr>
<th>COMPONENT DESIGNATOR</th>
<th>ZONE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZMI/Z01</td>
<td>Bottom portion Zone V</td>
<td>Blower control assembly and blowers</td>
</tr>
<tr>
<td>ZN1</td>
<td>Left from lower position Zone V</td>
<td>Airflow sensor and switch assembly</td>
</tr>
<tr>
<td>S01</td>
<td>Lower portion of Plenum Zone B</td>
<td>Site power connector terminal board (S01 TB1)</td>
</tr>
<tr>
<td>S02</td>
<td>V</td>
<td>Circuit Breaker Module, contains circuit breaker (S02 CB1) that applies power to the cabinet</td>
</tr>
<tr>
<td>S03</td>
<td>V</td>
<td>Power Entry Module with circuit breakers (S03-CB2/CB3) for FAN and REG. power on/off control</td>
</tr>
<tr>
<td>VCl</td>
<td>V</td>
<td>Power Control Module with Power Control and Configuration switches and indicators</td>
</tr>
<tr>
<td>VD1</td>
<td>V</td>
<td>100 Watt Voltage Regulator</td>
</tr>
<tr>
<td>Plenum</td>
<td>B</td>
<td>Force air column to circulate air over and around power supplies and logic boards</td>
</tr>
<tr>
<td>Logic Buckets A0-A4</td>
<td>A</td>
<td>Logic card and backpanel area.</td>
</tr>
<tr>
<td>Depends on Type Cabinet and Options</td>
<td>W</td>
<td>Heat sensors area and special area depending on cabinet type CPU, MMU, or IOM requirements.</td>
</tr>
</tbody>
</table>

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Components Common to all Cabinets
Figure 1-7
<table>
<thead>
<tr>
<th>Port</th>
<th>Memory</th>
<th>Store Size</th>
<th>Addressed</th>
<th>Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 (32K)</td>
<td>0-32K</td>
<td>0-100K</td>
<td>0-100K</td>
</tr>
<tr>
<td></td>
<td>1 (64K)</td>
<td>0-64K</td>
<td>0-200K</td>
<td>0-200K</td>
</tr>
<tr>
<td></td>
<td>2 (128K)</td>
<td>0-128K</td>
<td>0-400K</td>
<td>0-400K</td>
</tr>
<tr>
<td></td>
<td>3 (256K)</td>
<td>0-256K</td>
<td>0-1K</td>
<td>0-100K</td>
</tr>
<tr>
<td></td>
<td>4 (512K)</td>
<td>0-512K</td>
<td>0-2K</td>
<td>0-200K</td>
</tr>
<tr>
<td></td>
<td>5 (1024K)</td>
<td>0-1024K</td>
<td>0-4K</td>
<td>0-400K</td>
</tr>
<tr>
<td></td>
<td>6 (2048K)</td>
<td>0-2048K</td>
<td>0-10K</td>
<td>0-100K</td>
</tr>
<tr>
<td></td>
<td>7 (4096K)</td>
<td>0-4096K</td>
<td>0-20K</td>
<td>0-200K</td>
</tr>
</tbody>
</table>

| 1    | 0 (32K)| 32-64K     | 100K-200K | 100K-200K |
|      | 1 (44K)| 44-128K    | 200K-400K | 200K-400K |
|      | 2 (128K)| 128-256K   | 400K-1K   | 400K-100K |
|      | 3 (256K)| 256-512K   | 1K-2K     | 1K-200K  |
|      | 4 (512K)| 512-1024K | 2K-4K    | 2K-400K |
|      | 5 (1024K)| 1024-2048K | 4K-10K   | 4K-100K |
|      | 6 (2048K)| 2048-4096K | 10K-20K  | 10K-200K |
|      | 7 (4096K)| 4096-8192K | 20K-40K  | 20K-400K |

| 2    | 0 (32K)| 96-128K   | 300K-400K | 300K-400K |
|      | 1 (44K)| 128-192K | 400K-100K | 400K-100K |
|      | 2 (128K)| 192-256K  | 1K-200K  | 1K-200K |
|      | 3 (256K)| 256-512K  | 1K-200K  | 1K-200K |
|      | 4 (512K)| 512-1024K | 2K-400K | 2K-400K |
|      | 5 (1024K)| 1024-2048K | 4K-100K | 4K-100K |
|      | 6 (2048K)| 2048-4096K | 10K-200K | 10K-200K |
|      | 7 (4096K)| 4096-8192K | 20K-400K | 20K-400K |

| 3    | 0 (32K)| 128-160K | 400K-500K | 400K-500K |
|      | 1 (44K)| 192-256K | 600K-1K  | 600K-100K |
|      | 2 (128K)| 256-320K | 1K-2K    | 1K-200K |
|      | 3 (256K)| 320-512K | 2K-4K    | 2K-400K |
|      | 4 (512K)| 512-1024K| 4K-10K   | 4K-100K |
|      | 5 (1024K)| 1024-2048K | 8K-20K  | 8K-200K |
|      | 6 (2048K)| 2048-4096K | 16K-40K | 16K-400K |
|      | 7 (4096K)| 4096-8192K | 32K-80K  | 32K-800K |

| 4    | 0 (32K)| 192-224K | 600K-700K | 600K-700K |
|      | 1 (64K)| 224-448K | 1K-1K    | 1K-100K |
|      | 2 (128K)| 384-768K | 2K-2K    | 2K-200K |
|      | 3 (256K)| 512-1024K| 4K-4K    | 4K-400K |
|      | 4 (512K)| 1024-2048K | 8K-8K  | 8K-800K |
|      | 5 (1024K)| 2048-4096K | 16K-16K | 16K-1600K |
|      | 6 (2048K)| 4096-8192K | 32K-32K | 32K-3200K |
|      | 7 (4096K)| 8192-16384K| 64K-64K | 64K-64000K |

| 5    | 0 (32K)| 128-192K | 500K-600K | 500K-600K |
|      | 1 (64K)| 256-384K | 1K-2K    | 1K-200K |
|      | 2 (128K)| 384-768K | 2K-4K    | 2K-400K |
|      | 3 (256K)| 768-1536K| 4K-8K    | 4K-800K |
|      | 4 (512K)| 1536-3072K| 8K-16K | 8K-16000K |
|      | 5 (1024K)| 3072-6144K | 16K-32K | 16K-32000K |
|      | 6 (2048K)| 6144-12288K | 32K-64K | 32K-64000K |
|      | 7 (4096K)| 12288-24576K | 64K-128K | 64K-128000K |

| 6    | 0 (32K)| 224-256K | 700K-800K | 700K-800K |
|      | 1 (64K)| 448-512K | 1K-1K    | 1K-100K |
|      | 2 (128K)| 896-1024K| 2K-2K    | 2K-200K |
|      | 3 (256K)| 1792-2048K| 4K-4K  | 4K-4000K |
|      | 4 (512K)| 3584-4096K| 8K-8K  | 8K-8000K |
|      | 5 (1024K)| 7168-8192K | 16K-16K | 16K-16000K |
|      | 6 (2048K)| 14336-16384K| 32K-32K | 32K-32000K |
|      | 7 (4096K)| 28672-32768K | 64K-64K | 64K-64000K |

Memory Port Mapping
Figure 1-8

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Site C Layout
Figure 1-9
NOTE: THERE ARE NO REFERENCE MANUAL FIGURES FOR LESSON 2.
CPU E: SMTCS A.3 or higher
ETEMP Firmware D or higher

DISKETTES
SMTCS
SYSTEM MAINTENANCE
AND TEST CONTROL
SOFTWARE DPU operation

CPUAX
AUTO EXEC AND INDEX
Test set & every inst

LIBRARY
CPU SUBSET = 8
DISKETTES 256 test

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Field Auto and CPU Subset
Figure 3-1
AUTO FEATURES
(Preliminary Release A.3)

• **Execute Sequence**
  - One test
  - Test Series (individually specified)
  - Test range (first through last specified)
  - Combo of above

• **Execute Options**

  REPEAT LAST TEST SEQUENCE 1 TIME
  TERMINATE AUTO
  SAVE DMP STATE AND TERMINATE AUTO
  ERROR DISPLAY SUPPRESS
  STATUS OF MODES (OPTIONS)
  DISPLAY TEST INDEX
  RE-INITIALIZE DMP
  SUPPRESS ALL DISPLAY

  SINGLE STEP (NOT IMPLEMENTED)

  CONTINUOUS SEQUENCE REPEAT - BYPASS INPUTS

• **Error Display**

  - Failing command pair
  - Line Number (Listing Ref)

  - Was Data
    Should Be Data
    Compare Mask

Figure 3-2
(All operator inputs are underlined in the following dialogues).

****** DIAGNOSTIC PROCESSOR UNIT REV A.3 (DL6.07) ******

RMI ACTIVE

CT? AUT CPU00
WORKING...
MOUNT DISKETTE ACPAUX drive1
CARRIAGE RETURN WHEN READY OR Q TO QUIT
(CARRIAGE RETURN)
ENTER TEST SEQUENCE

? THE TEST SEQUENCE INPUT MAY BE FOR A SINGLE TEST:
A200
FOR SEVERAL TESTS:
A200,A205,A210,A210,A209
FOR A GROUP OF TESTS:
A200-A210
OR FOR A COMBINATION OF THE ABOVE REQUESTS:
A200-A205,A209,A211-A215

THE ABBREVIATION FOR ANY ONE OF THE FOLLOWING OPTIONS
MAY BE ENTERED INSTEAD OF A TEST SEQUENCE.

REPEAT (R) REPEAT LAST TEST SEQUENCE 1 TIME
QUIT (Q) TERMINATE AUT
SUSPEND (S) SAVE DMP STATE AND TERMINATE AUT
(BREAK) TERMINATE AUT
ERR SUPP (.E) ERROR DISPLAY SUPPRESS (TOGGLE)
MODE STAT (.M) STATUS OF MODE FLAGS
LIST INDEX (.X) DISPLAY TEST INDEX
INIT DMP (.I) RE-INITIALIZE DMP
PRT OFF (.P) SUPPRESS ALL DISPLAY
CONTINUE Y OR N - Y
STEP (.S) SINGLE STEP (NOT IMPLEMENTED)
LOOP (.L) CONTINUOUS SEQUENCE REPEAT - BYPASS INPUTS

LOOP OPTIONS: (MUTUALLY EXCLUSIVE)

RESTART (.R) RESTART SEQUENCE AT BEGINNING (DEFAULT)
CONTINUE (.C) CONTINUE TEST SEQUENCE WITH SAME TEST
NEXT TEST (.N) CONTINUE TEST SEQUENCE WITH NEXT TEST
(BREAK) TERMINATE LOOP OPTION
ENTER TEST SEQUENCE
****
* A104 REV. A CPU 01/30/81

* A104 REV. C2 CPU 12/10/80 *** HONEYWELL PROPRIETARY ***
* CHECK DIS
* CHECK CU CYCLE

*****************************************************************************

0002  DCL %STRRD,DI
0003  DCL %STRSH,DF
0004  WRTBUF,"$100"D;
0005  CONTROL INCL;
0006  CONTROL RESET;
0007  CONTROL STCL;
0008  WRITE ADSTOP,0;
0009  CONTROL STCU;  STEP CYCLE=CU
0010  WRITE DATA,777777777277;  DATA SHS=7777777777
0011  CONTROL EXSWCO;
0012  CONTROL ++AIT,11;
0013  READ IARY,%STRRD1;  ADDRESS, CU  777777
0014  COMPARE %STRRD,777777777777000000000000,"E0";
0015  READ STAT,%STRRD1;  DIS  OFF
0016  COMPARE %STRRD,000400000000000000000000,"E0";
0017  037600000000000000000000, "E0";
0018  *  CU STEP ON
0019  CONTROL INCL;
0020  CONTROL ++AIT,11;
0021  READ STAT,%STRRD1;  DIS  ON
0022  COMPARE %STRRD,010000000000000000000000,"E0";

*****************************************************************************

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Sample Test Listing
Figure 3-4
ENTER TEST SEQUENCE
A100
TEST NOT IN DIRECTORY
ENTER TEST SEQUENCE

A100 not ind

ENTER TEST SEQUENCE
A104
A104 A Test ID & Rev.
^CA104*A104 Diskette Vol. & Test File
MOUNT DISKETTE ^CA104
CARRIAGE RETURN WHEN READY OR I TO IGNORE
I (or 3 unsuccessful retries)
TEST NOT FOUND ^CA104*A104
ENTER TEST SEQUENCE

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Test Sequence Execution
Figure 3-5
Sheet 1 of 2
ENTER TEST SEQUENCE
A104
A104 A
^CA104>A104
MOUNT DISKETTE ^CA104
CARRIAGE RETURN WHEN READY OR I TO IGNORE
(carriage return)
* A104 REV. A CPU 12/11/80 ID, Rev, date of Test
TEST ERROR
^CA104>A104 Path name
READ IWRY,%STRRD;
COMPARE %STRRD,$7777777727700000000000,"EO";
LINE NO IS 0014
WAS DATA IS 00000000000000000000000000000000
SHOULD BE DATA IS 77777777777777777777777777777777
MASK DATA IS 77777777777777777777777777777777
CONTINUE Y OR N
Y
TEST ERROR
^CA104>A104
READ STAT
READ STAT,%STRRD;
COMPARE %STRRD,01000000000000000000000000000000,"EO";
LINE NO IS 0021
WAS DATA IS 00000000000000000000000000000000
SHOULD BE DATA IS 01000000000000000000000000000000
MASK DATA IS 77777777777777777777777777777777
CONTINUE Y OR N
N
ENTER TEST SEQUENCE

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Test Sequence Execution
Figure 3-5
Sheet 2 of 2
THE ABBREVIATION FOR ANY ONE OF THE FOLLOWING OPTIONS MAY BE ENTERED INSTEAD OF A TEST SEQUENCE.

REPEAT (R) REPEAT LAST TEST SEQUENCE 1 TIME
QUIT (Q) TERMINATE AUT
SUSPEND (S) SAVE DMP STATE AND TERMINATE AUT
(BREAK) TERMINATE AUT
ERR SUPP (.E) ERROR DISPLAY SUPPRESS (TOGGLE) NOTE (A)
MODE STAT (.M) STATUS OF MODE FLAGS
LIST INDX (.X) DISPLAY TEST INDEX
INIT DMP (.I) RE-INITIALIZE DMP Hung up
PRT OFF (.P) SUPPRESS ALL DISPLAY
CONTINUE Y OR N - Y
STEP (.S) SINGLE STEP (NOT IMPLEMENTED)
LOOP (.L) CONTINUOUS SEQUENCE REPEAT - BYPASS INPUTS

LOOP OPTIONS: (MUTUALLY EXCLUSIVE)

RESTART (.R) RESTART SEQUENCE AT BEGINNING (DEFAULT)
CONTINUE (.C) CONTINUE TEST SEQUENCE WITH SAME TEST
NEXT TEST (.N) CONTINUE TEST SEQUENCE WITH NEXT TEST
(BREAK) TERMINATE LOOP OPTION
ENTER TEST SEQUENCE

NOTE (A): EACH USE OF .E WILL ALTERNATELY TURN THE OPTION ON AND OFF.

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Test Sequence Options
Figure 3-6
POWER AND CONFIGURATION

Input/Output Multiplexer

1. Set the Input/Output Multiplexer cabinet AC circuit breaker ① to the ON position.
2. Verify that the AC PRESENT and POWER OFF indicators ② are illuminated.
3. Ensure that the Master Power Regulator (VFL) OFF-REMOTE switch ③ is in the REMOTE position.

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Power On Sequence
Figure 4-2
Sheet 1 of 3
4. Ensure that the Margins and Power Control LOCAL-REMOTE switches are in the REMOTE position.

5. Set the FAN and REGULATORS circuit breakers (CB3, CB2) to the ON position.

6. Ensure that the CABINET SHUTDOWN switch is in the OUT position.

   NOTE: PRESS AND RELEASE THE CABINET SHUTDOWN SWITCH TO FULFILL THE REQUIREMENT.

7. Press and release the POWER ON switch

8. Verify that the POWER ON and the DC CONF., DC ON indicators are illuminated.
9. Verify that the POWER OFF indicator is extinguished.

10. Verify that the TROUBLE indicator extinguishes and the READY indicator becomes illuminated after approximately three seconds.

**NOTE:** FAILURE OF ANY PROCEDURAL STEP REQUIRES CAREFUL NOTING OF THE FAULT SYMPTOM AND, AT THE DISCRETION OF THE SUPERVISOR, CONTACTING TAC FOR TECHNICAL ASSISTANCE. (SEE PARAGRAPH 4.1, PRIOR TO CALLING THE RESPONSE CENTER)

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Power On Sequence
Figure 4-2
Sheet 3 of 3
HONEYWELL CONFIDENTIAL AND PROPRIETARY

Power System Overview
Figure 4-3
TYPICAL CENTRAL PROCESSOR UNIT (CPU)
FRONT VIEW (DOORS REMOVED)

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CPU Power Modules
Figure 4-5
TYPICAL MAIN MEMORY UNIT (MMU)
FRONT VIEW (DOORS REMOVED)

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MMU Power Modules
Figure 4-6
"CAPACITORS CHARGED" LIGHT

CAPACITOR BANK

HIGH VOLTAGE BUSS

RIGHT REAR VIEW

High Voltage Buss
Figure 4-7
CONDITIONS: Logic area in the CPU is getting too warm. System is still operable. The audio alarm just turned on.

CONTROL REGULATOR CONFIDENCE INDICATOR (NOT LABELED)

LIGHT ON

PCM

CONDITIONS: The +5V Master Regulator is getting too warm. System is still operational. The audio alarm just turned on.

CONTROL REGULATOR CONFIDENCE INDICATOR (NOT LABELED)

LIGHT ON

PCM

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Examples of Overtemperature Alarm Indications
Figure 4-11
Sheet 1 of 2
CONDITIONS: Audio alarm sounds. D.C. power has just dropped. 
45V Master regulator is extremely hot.

NOTE: THE OVERTEMPERATURE SOURCE AND ALARM INDICATORS ARE NOT LATCHED AND WILL TURN OFF WHEN THE UNIT COOLS OFF.

HONEYWELL CONFIDENTIAL AND PROPRIETARY
Examples of Overtemperature Shutdown Indicators
Figure 4-11
Sheet 2 of 2
HONEYWELL CONFIDENTIAL AND PROPRIETARY

Power Faults/DC Confidence
Figure 4-12
4.0 MAINTENANCE AIDS

4.1 INTRODUCTION

These maintenance aids are part of the product maintenance documentation (PMD) for the DPS 8/52, DPS 8/62 and DPS 8/70 power and cooling systems in accordance with PMD Specification 58061028.

**WARNING**

HIGH CURRENT AND HIGH VOLTAGE SHOCK HAZARDS ARE PRESENT IN THE POWER SYSTEM.

1. NEVER CONNECT OR DISCONNECT POWER CABLES OR WIRING WHILE POWER IS ON.

2. WAIT AT LEAST FIVE MINUTES AFTER POWER IS OFF FOR THE CAPACITOR RIDE-THRU MODULE TO DISCHARGE BEFORE WORKING ON THE POWER SYSTEM.

3. OBSERVE AND OBEY ALL CAUTION AND WARNING SIGNS AND LABELS.

The maintenance aids are divided into two parts: The Power System and Cooling System. The power system maintenance aids include power regulator adjustment procedures and a power and cooling troubleshooting guide. Also included are checks for proper blower and air flow sensor switch operation.

The level of the maintenance aids is to the optimum replaceable unit (ORU), which is a module and/or a PWB, including fuses and other replaceable parts.
4.3 POWER/Cooling Troubleshooting Guide

The Troubleshooting Guide flowchart on this page can be used as an aid in locating a problem that is suspected of being in the power or cooling system. See Figure 4-13 Sheet 3 for power control module (PCM) controls and indicators.

Remarks/Notes

Warning

High current and high voltage shock hazards are present in the power system.

1. Never connect or disconnect power cables or wiring while power is on.

2. Wait at least five minutes after power is off for the capacitor ride-thru module to discharge before working on the power system.

3. Observe and obey all caution and warning signs and labels.

Suspected Power/Cooling System Problem

Is audio alarm on? NO → A → Go to Point A. Figure 4-13 Sheet 4.

Yes → Press alarm reset on operator panel

Is PCM DC on indicator lit? NO

FALSE ALARM

- Check for secure cables at PCM and operator panel.
- Change PCM.
- Change operator panel PWB.

IS PCM OT ALARM INDICATOR LIT? YES → IS PCM COOLING ALARM INDICATOR LIT? YES → Check PEM fans circuit breaker. Check air filters. Check that fans are running up to speed. Check hoses and wire connections at air pressure sensors. Check for secure cables at PCM. False alarm. Change PCM.

No

IS PCM OVER-TEMP SHUTDOWN INDICATOR LIT? NO

- Check for secure cables at PCM.
- Change PCM.

Yes

IS PCM OT ALARM INDICATOR LIT? YES

- Unit has cooled off. Try again.
- Could be failed PCM or temperature sensor. The O.T. ALARM is expected at this point.

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Figure 4-13
Sheet 2

Rev. 1
POWER AND COOLING UNIT MANUAL EXTRACT

POWER/COOLING TROUBLESHOOTING GUIDE - CONT’D.

4.3.1 REMARKS/NOTES

- GENERAL:

Package and return failed ORU to your Logistics Cluster with a completed repair form.

- Check for proper room temperature.
- Check for dirty air filters.
- Check for blocked air intake at front and rear of cabinet.
- Check for blocked air escape at top of cabinet.
- Check for overheated +5V power regulator. Replace if room temperature and air flow is normal.
4.3.1 REMARKS/NOTES (CONT'D.)

POWER AND COOLING TROUBLESHOOTING GUIDE - CONT'D.

CONTROL REGULATOR CONFIDENCE INDICATOR (NOT Labeled)

PCM Control Panel
Figure 4-1A

A

YES

IS AC PRESENT INDICATOR ON OPERATOR PANEL LIT?

NO

PRESS PCM RESET PUSHBUTTON

SET PCM POWER CONTROL SWITCH TO LOCAL

PRESS PCM POWER CONTROL ON SWITCH AND LISTEN FOR RELAY CLICK AT PEM

IS PCM DC ON INDICATOR LIT?

NO

YES

IS PCM CONTROL REGULATOR CONFIDENCE IND. LIT?

NO

YES

CHANGE PCM

IS PCM DC CONF. INDICATOR LIT?

NO

YES

ENSURE THAT OPERATOR PANEL CABINET SHUTDOWN SWITCH IS NOT LATCHED IN

B

GO TO POINT B, FIGURE 4-13 SHEET 6.

IS CABINET MAIN CIRCUIT BREAKER ON?

NO (Turn on)

YES

IS AC POWER PRESENT AT S01 TBI?

NO

YES

ARE FUSES ON PEM BLOWN?

NO

YES

- Check MG set if supplied.
- Check wall circuit breaker
- Contact customer

- Change fuses
- If fuses blow again:
  - Change PEM
  - Change PCM

- Check for secure PEM and PCM cables
- Replace PCM
- Replace PEM

GO TO NEXT PAGE POINT C

GO TO NEXT PAGE POINT D
4.3.1 REMARKS/NOTES (CONT'D.)

Before replacing any power regulator for a fault condition, proceed as follows:

1. Turn overcurrent adjust potentiometer one or two turns CW and try to turn power on.
2. Turn output voltage adjust potentiometer one or two turns CCW and try to turn power on.
3. If either of the above corrects the fault, adjust regulator for proper operation.

   SEE NOTES
   - Replace power regulator with FAULT indicator lit

   FROM PRECEDING PAGE

   C FROM PRECEDING PAGE

   IS ANY POWER REGULATOR FAULT INDICATOR LIT?

   NO

   - Check each power regulator output
   - Replace power regulator with no output if only one regulator is bad (SEE NOTES)
   - Replace PCM if more than one regulator has no output

   FROM PRECEDING PAGE

   D FROM PRECEDING PAGE

   ARE CAPACITOR MODULE INDICATORS LIT?

   NO

   - Check for secure cabling of capacitor module V11 to high voltage bus.
   - Check for blown capacitor module fuse.
   - Replace capacitor module.

   YES

   - Check and adjust all power regulators to installation specifications
4.3.1 REMARKS/NOTES (CONT'D.)

CAUTION

BEFORE CHANGING SSM THE FOLLOWING STEPS MUST BE PERFORMED. OTHERWISE, THE NEW SSM WILL FAIL IMMEDIATELY WHEN POWER IS REAPPLIED.

1. Remove PEM
   A. Disconnect one side of VR1 from L2 and check VR1 for short. Replace PEM if shorted.
   B. Repeat above for VR2 and L3.
   C. Check CR6 for short and replace PEM if shorted.

2. Reinstall PEM.
3. Remove capacitor module.

CAUTION

THE CAPACITOR MODULE WEIGHTS ABOUT 66 POUNDS. CARE SHOULD BE TAKEN NOT TO DROP IT.

Check CR1 for short and replace capacitor module if shorted.

4. Reinstall capacitor module.
5. Change failed SSM.

FROM FIGURE 4-13 SHEET 4.

CONTROL REGULATOR CONFIDENCE INDICATOR (NOT LABELED)

B IS PCM CONTROL REGULATOR CONFIDENCE INDICATOR LIT?

SEE NOTES, FIGURE 4-1A.

YES Change PCM

NO

WAS RELAY CLICK HEARD AT PEM WHEN PCM POWER CONTROL ON SWITCH WAS PRESSED?

YES

ARE COOLING FAN MOTORS ROTATING?

YES

ARE CAPACITOR MODULE INDICATORS LIT?

NO

- Check that PEM REGULATOR circuit breaker is on.
- Check for secure cables at SSM and PEM.
- Check SSM internal fuse.
- Change PEM.
- Change SSM.

YES

SEE NOTES 2 & 3

+24V FAULT INDICATOR LIT?

FIGURE 4-13 SHEET 5.

- Change +24V reg.

YES

- Check +24V regulator output.
- Change +24V reg.
  if no output.
- Change PCM.
4.3.2 COOLING SYSTEM MAINTENANCE AIDS

4.3.2.1 AIR FLOW SENSOR SWITCH OPERATION

NOTE: THE AIR FLOW SENSOR SWITCH IS NORMALLY CLOSED. THE SWITCH OPENS WHEN THE BLOWER REACHES ITS NORMAL OPERATING SPEED ABOUT 4-8 SECONDS AFTER INITIAL STARTUP.

To check the operation of this switch proceed as follows:

NOTE: THE AIR FLOW SENSOR SWITCHES ARE LOCATED AT GXR1 and XNI1 ABOVE THE COOLING BLOWERS AT THE FRONT OF THE CABINET.

1. Remove switch cover.
2. Remove COMMON (top) wire.
3. Loosen NORMALLY OPEN (middle) screw.
4. Set WOM to scale RX1 and clip VOM to top and middle screws.
5. Turn blower on and allow a few seconds for blower to reach normal speed. If VOM reads a short, the switch is good; if VOM reads open, the switch is defective.