

**MER Shift Reports**

**STS-107**

**Day 12 Shift 1**

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 12 SHIFT 1**  
**GMT 027/17:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

**FC/PRSD** –The fuel cell 1 & 3 alternate water line temperatures continue to be erratic, indicating slight leakage of warm fuel cell water through the check valves.

The Cryo Heater Current Sensor Check that was performed on O2 TK7 at 024/20:46 GMT (08/05:07 MET). The test was done while the heater was turned on via auto mode control. The sensor check was nominal and completes the STS-107 file 9 requirements for O2 tank heater current sensor tests.

**OMS/RCS** – Now in straight feed, B regs, B heaters, A pod heaters. Interconnect usage is currently at 4.120 % out of the left side. Will remain straight feed until end of mission Usage out of the ROMS at 3.991%.

**EPDC** – The only problem being worked by EPDC is the intermittent “sluggish” AC2 phase B current response. The plots for the last 24 hours indicate that there were multiple, intermittent occurrences of sluggish response on AC2 by phase B.

All monitored voltage and current measurements were nominal. The 24 hour plots and the strip chart recorder data was reviewed with no unusual signatures noted.

Walter Scott  
ESD Team Lead

# ORBITER ECLSS

## STS-107 ECLSS SHIFT REPORT

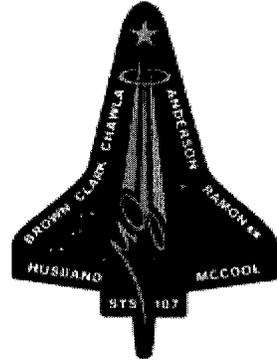
### FLIGHT DAY 13

### SHIFT 1

All ECLSS systems performing nominally.

|              |                  |           |
|--------------|------------------|-----------|
| Consumables: | Supply water     | 566.7 lb. |
|              | Waste water      | 79.1 lb.  |
|              | Orbiter Nitrogen | 168.6 lb. |

Shift Leader  
GMT 027/17:00



## DPS PASS FSW, MEDS & H/W MER Shift Report

**STS-107**

**Date: 1/27/2003**

**GMT: 027/17:00:00**

**Shift: 1st**

### SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

**DPS Team Lead: Jose Lozano**

**Signature:**

*Jose R. Lozano*

MER FLIGHT CREW EQUIPMENT- GFE/CFE  
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD12; 2nd SHIFT REPORT

GMT: 027:17:00

**EVENTS:**

Red team are working experiments.  
Troubleshooting MIST experiment/CM2 chamber pressure issue.

**FORWARD ACTIONS:**

Monitor CHITs for activity.

**CHITS (Monitoring / Working / Waiting for Closure):**

**STS0013 PGSC Power Supply Temperature Check CHIT (was TS0016)**

CLOSED - EGIL provided input on current draw and MMACS provided input status (Flight Note sent to crew but crew did not feel it was necessary to perform the procedure)

- *SSM will work on Monday with Mech., PGSC, and FCE consoles to get CHIT out with additional rationale for PGSC Power Supply Temp. Check..*

**STS0014 INFO ONLY – Spacehab WSA Cleanup IFM**

Submitted FCE concurrence with vacuum cleaner steps defined in CHIT STS0014.

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.



Maurice J. Lehmann  
Flight Crew Equipment- GFE/CFE

MER Shuttle Safety Console  
STS-107 FD 12 Shift 1  
GMT 027:17:00

The MER Safety Console is not working any safety of flight issues.

Jim Pendergast

# Orbiter Thermal

## STS-107 MER TCS Thermal 1st Shift Report

January 27, 2003 11:00AM, 027/17:00 GMT (11/01:21 MET)

All thermal systems are performing nominally and all subsystem temperatures are within acceptable limits. We are closely monitoring the MLG tire pressures and temperatures during the current attitude (-ZLV -XVV), so as to determine if the attitude needs to be changed earlier than planned. The attitude would be changed to a -ZLV +YVV.

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Shannon Belknap / Dave Norman

**MER Shift Reports**

**STS-107**

**Day 12 Shift 2**

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 12 SHIFT 2**  
**GMT 028/00:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

**OMS/RCS**

1. Left OMS GN2 Accumulator pressure is holding.
2. The Left and Right OMS Pod heaters were reconfigured from B to A strings at 027/13:51 GMT.
3. Left OMS interconnect was broken and RCS straight feed established at 027/16:00:53 GMT.
4. OMS and RCS system data has been reviewed up through 027/16:00 GMT. System performance continues as expected with no anomalies noted.
5. All vernier jet firing through 027/15:39:00.000 GMT have been reviewed. There have been no anomalous pulses.
6. 23 of 38 primary thrusters have been fired. No new primary thrusters have been fired since the previous report.

**EPDC** - The only problem being worked by EPDC is the intermittent "sluggish" AC2 phase B current response. The plots for the last 24 hours indicate that there was one additional occurrence of sluggish response on AC2 by phase B.

All monitored voltage and current measurements were nominal. The 24 hour plots and the strip chart recorder data was reviewed with no unusual signatures noted.

Tom Davies  
ESD Team Lead

# STS-107

## OMS/RCS Day 12 Shift 2 Report

**INITIATOR:** Fitzgerald, Arrieta  
**DATE:** January 27, 2003

**MET:** 11/07:31  
**GMT:** 027/23:10  
**CENTRAL TIME:** 5:10 PM CST

|                           | Left     |      | Right    |      | Forward  |      |
|---------------------------|----------|------|----------|------|----------|------|
|                           | Oxidizer | Fuel | Oxidizer | Fuel | Oxidizer | Fuel |
| <b>PFS %</b>              | 71.3     | 71.3 | 69.7     | 68.8 | 48.8     | 46.0 |
| <b>Interconnect Usage</b> | 4.120    |      | 3.991    |      |          |      |

### ORBIT

1. **Left OMS GN2 Accumulator pressure is holding.**
2. **The Left and Right OMS Pod heaters were reconfigured from B to A strings at 027/13:51 GMT.**
3. **Left OMS interconnect was broken and RCS straight feed established at 027/16:00:53 GMT.**

### Data Review

1. OMS and RCS system data has been reviewed up through 027/16:00 GMT. System performance continues as expected with no anomalies noted.
2. All vernier jet firing through 027/15:39:00.000 GMT have been reviewed. There have been no anomalous pulses.

**RCS PRESSURIZATION LEG    FRCS: B            LRCS: B            RRCS: B**

**AFT RCS INTERCONNECT CONFIGURATION:** RCS Straight Feed.

23 of 38 primary thrusters have been fired. No new primary thrusters have been fired since the previous report:

|     |   |     |   |     |   |
|-----|---|-----|---|-----|---|
| F1F |   | L1A | X | R1A | X |
| F2F |   | L3A | X | R3A | X |
| F3F |   | L1L |   | R1R |   |
| F1L |   | L2L |   | R2R |   |
| F3L | X | L3L | X | R3R | X |
| F2R |   | L4L |   | R4R |   |
| F4R | X | L1U | X | R1U | X |
| F1D | X | L2U |   | R2U |   |
| F2D | X | L4U |   | R4U |   |
| F3D | X | L2D | X | R2D | X |
| F4D | X | L3D | X | R3D | X |
| F1U | X | L4D | X | R4D | X |
| F2U | X |     |   |     |   |
| F3U | X |     |   |     |   |

STS-107 (OV-102, FLT 28)  
1/27/03  
3:30 PM  
On-Orbit Shift Report

The HYD/WSB Systems are operating normally and all parameters are within their expected ranges. There have been no additional circulation pump runs for thermal conditioning or bootstrap re-pressurization. The HYD/WSB group is not working any issues at this time.

**Total Circ Pump Runs**

| <b>Thermal</b>           | <b>Accumulator Recharges</b> |
|--------------------------|------------------------------|
| Sys 1: 1 for elevon park | 0                            |
| Sys 2: 0 runs            | 0                            |
| Sys 3: 0 runs            | 0                            |

Charles A. Ritrivi

HYD/WSB SSE

# ORBITER ECLSS

## STS-107 ECLSS SHIFT REPORT

### FLIGHT DAY 12

### SHIFT 2

All ECLSS systems performing nominally.

|              |                  |           |
|--------------|------------------|-----------|
| Consumables: | Supply water     | 587.0 lb. |
|              | Waste water      | 91.5 lb.  |
|              | Orbiter Nitrogen | 167.1 lb. |

Shift Leader  
GMT 028/00:51

# Orbiter Thermal

## **STS-107 MER Thermal 2<sup>nd</sup> Shift Report**

**028/01:00 GMT, 19:00 CST 01/27/2003**

All thermal systems are performing nominally and all temperatures are within acceptable limits.

The shuttle is currently in a top to earth, tail on the velocity vector attitude. We are monitoring the pressure inferred MLG tire temperatures to determine how well our model predicts the cooldown. In a few hours, we will recommend whether to change a similar "tail on VV" attitude scheduled tomorrow to a "starboard wing on VV" based upon our model performance.

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Bill Andrews/John Tran

MER FLIGHT CREW EQUIPMENT- GFE/CFE  
STS-107 SHIFT REPORT

TO: MER MANAGER

SUBJECT: FD12; 3rd SHIFT REPORT

GMT: 028:1:00

**EVENTS:**

Continued work with Dave Stephenson about opening a new CHIT for the PGSC Temperature checkout.

**FORWARD ACTIONS:**

Monitor CHITs for activity.

**CHITS (Monitoring / Working / Waiting for Closure):**

**STS0013 PGSC Power Supply Temperature Check CHIT (was TS0016)**

**CLOSED - EGIL provided input on current draw and MMACS provided input status (Flight Note sent to crew but crew did not feel it was necessary to perform the procedure)**

- *SSM will work on Monday with Mech., PGSC, and FCE consoles to get CHIT out with additional rationale for PGSC Power Supply Temp. Check..*

**STS0014 INFO ONLY – Spacehab WSA Cleanup IFM**

Submitted FCE concurrence with vacuum cleaner steps defined in CHIT STS0014.

**STS0013 PGSC Power Supply Temperature Check CHIT (was TS0016)**

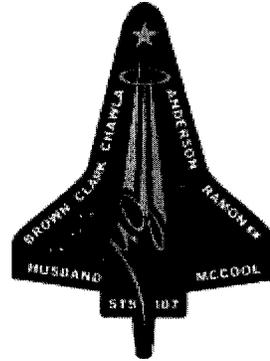
**Action-** A request was submitted by Dave Stephenson to create another CHIT with better rationale to cover the PGSC Power Supply Temperature Check. This new rationale did not support the opening of a new CHIT and the MER manager instructed Dave Stephenson that he must have CB (Crew office) support before another CHIT, to conduct this activity could be submitted. We are currently waiting Dave reply.

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.

Derek J. Neumeyer  
Flight Crew Equipment GFE/CFE





## DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107

Date: 1/27/2003

GMT: 028/01:00:00

Shift: 2nd

### SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Christian Garcia

Signature: 

MER Shuttle Safety Console  
STS-107 FD 12 Shift 2  
GMT 028:01:47

The MER Safety Console is not working any safety of flight issues.

Brandon Dick

**MER Shift Reports**

**STS-107**

**Day 12 Shift 3**

**STS-107 ESD SYSTEMS SHIFT REPORT**  
**DAY 12 SHIFT 3**  
**GMT 028/09:00**

Energy Division Subsystems (MPS, RCS, OMS, FC/PRSD, APU, and Hydraulics) continue to function satisfactorily with the following notes or exceptions:

Chuck Beatty  
ESD Team Lead

MER FLIGHT CREW EQUIPMENT- GFE/CFE  
STS-107 SHIFT REPORT

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TO: MER MANAGER

SUBJECT: FD13; 1st SHIFT REPORT

GMT: 008:09:00

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**EVENTS:**

Crewmember was able to trouble shoot vacuum leak in experiment when he found the O-Ring had been sucked into the hardware. The O-Ring appears to be in good condition and will be reused.

**FORWARD ACTIONS:**

Monitor CHITs for activity.

**CHITS (Monitoring / Working / Waiting for Closure):**

**STS0014 INFO ONLY – Spacehab WSA Cleanup IFM - CLOSED**

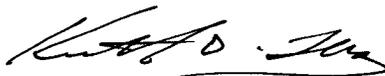
Submitted FCE concurrence with vacuum cleaner steps defined in CHIT STS0014.

**STS0013 PGSC Power Supply Temperature Check CHIT (was TS0016)**

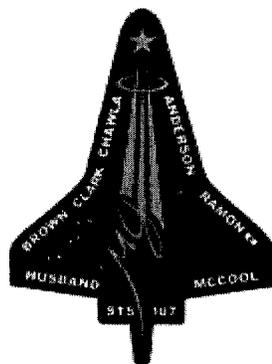
A request was submitted by Dave Stephenson to create another CHIT with better rational to cover the PGSC Power Supply Temperature Check. This new rational did not support the opening of a new CHIT and the MER manager instructed Dave Stephenson that he must have CB (Crew office) support before another CHIT, to conduct this activity could be submitted. We are currently waiting Dave reply.

**HARDWARE STATUS:**

There have been no FCE anomalies recorded this reporting period. It is assumed all FCE is performing nominally.



Keith D. Illg  
Flight Crew Equipment- GFE/CFE



## DPS PASS FSW, MEDS & H/W MER Shift Report

STS-107

Date: 1/28/2003

GMT: 028/09:00:00

Shift: 3rd

### SYSTEM STATUS / ISSUES BEING WORKED

- All DPS systems performing nominally.

DPS Team Lead: Trevor Tidwell

Signature: \_\_\_\_\_

*Trevor Tidwell*

# ORBITER ECLSS

## STS-107 ECLSS SHIFT REPORT

FLIGHT DAY 13

SHIFT 3

All ECLSS systems performing nominally.

### Events:

MET 11/15:15 SIMO DUMP INITIATED  
MET 11/16:21 SIMO DUMP COMPLETED

Consumables:      Supply water      500.3 lb.  
                         Waste water          14.3 lb.  
                         Orbiter Nitrogen    164.3 lb.

Shift Leader  
GMT 028/08:47



## Thermal 3<sup>rd</sup> Shift Report

STS-107, January 28, 2003  
3 AM, MET 011/17:21 (27/09:00 GMT)

All temperatures are within acceptable limits and all thermal systems are operating nominally.

During the top to earth tail on V attitude that ended at 11/15 MET, the main landing gear tire temperatures cooled faster than predicted (similar to a STS-97 experience for the same attitude). Based on this response, TCS recommended an attitude change at 12/02 MET from the planned tail on V to a starboard wing on V attitude.

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Diana Coronado

MER Shuttle Safety Console  
STS-107 FD 12 Shift 3  
GMT 028:08:40

The MER Safety Console is not working any safety of flight issues.

Michael Etchells