

STS-109 Run1

*2914007

* 2-11-2 VSN 500 04

PROCESSING OPERATIONS CONTROL OMI PLANNING SHEET



Wad Number V6028.001-A04-R01	SITE SLF	Elem CD V	End Item 102 FLT: 027	DATE: 01/30/2002 TIME: 13:27:35
---------------------------------	-------------	--------------	--------------------------	------------------------------------

Title: POST FLT ORB REUSABLE SURFACE INSULATION RUNWAY ENGINEERING WALKDOWN	Sub Element/Zone 30
--	------------------------

Project Work Order No.	Hazard: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	SFOC Safety N/A	<input checked="" type="checkbox"/> Local Copy
			<input type="checkbox"/> Firing Room Copy

Authorizing Document ORB227-341(ADD)	Material & Equipment: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	MICR Req'd <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	OMRS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---	--	---	--

PERFORM THE FOLLOWING:

Pre-Ops Setups

Task	Operation Number	Seq	Steps	Task	Operation Number	Seq	Steps

OPS Support

Task	Operation Number	Seq	Steps	Task	Operation Number	Seq	Steps

Task	Operation Number	Seq	TACCS	Steps
CVAS	TIPS			
USA VM 030	USA VM 033	USA VM 041	USA VM 093	USA VM 020

Operating Instructions

Task	Seq	Steps	Task	Seq	Steps
	010				
	020				

<p>Post Ops</p> <table border="1"> <thead> <tr> <th>Task</th> <th>Operation Number</th> <th>Seq</th> <th>Steps</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Task	Operation Number	Seq	Steps					<p>Appendices</p> <table border="1"> <thead> <tr> <th>Task</th> <th>Seq</th> </tr> </thead> <tbody> <tr> <td> </td> <td>N/A</td> </tr> </tbody> </table>	Task	Seq		N/A
Task	Operation Number	Seq	Steps										
Task	Seq												
	N/A												

Subtask WAD's

N/A

860
WA
USA

m

1947
N
APR 1947
200

OMI TASK CLOSEOUT CHECKLIST

OMI No. <i>V6028.001 Rev. A-04</i>	Run No. <i>1</i>	Task Control No. (TCN) <i>2914007</i>
Start Date <i>3-12-02</i>	Completion Date <i>3-12-02</i>	Closure Date <i>SPC 1044 3-19-02</i>
1. Deviation Index: Verify total number of deviations agree with index. Verify entry is correct into OMI.		QC/Eng. <i>SPC 884</i>
		Date <i>3-18-02</i>
2. Constraints: Verify all constraints are cleared.		<i>SPC 884</i>
3. IPR's: Verify that all IPR's are closed or upgraded to problem reports or dispositioned as no constraint to OMI closure and incorporated in central IPR system and a copy of the central IPR sort attached.		<i>SPC 884</i> <i>SPC 884</i>
4. Verify that material and equipment requirement list enclosed (if applicable).		<i>SPC 884</i>
5. OMI: Verify that all pages or verification sheets are completed, stamped, and dated in the lower left/right hand corners.		<i>SPC 884</i>
6. OMI: Verify that all miscellaneous documents/procedures have sequence number referenced and stamped; e.g., photos, sample results, etc.		<i>SPC 884</i>
7. Planned task/OMI satisfactorily completed. OPR: <i>Am. Hum</i> <i>THL</i> <i>18 MAR 02</i>		<i>SPC 884</i> <i>SPC 884</i>

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

POST FLT ORB REUSABLE SURFACE INSULATION RUNWAY ENGINEERING WALKDOWN

Element/End Item: 102, 103, 104, 105

Flow/Usage: NA

Facility: AAFB, BANJUL, BENGUE, DFRF, ELS, HAFB, MORON, SLF, WSSH,
ZARAG

Design Center Concurrence: NA

Category: F

OPR: TPS

TTL ORG: SE

**This document does not contain
hazardous operations.**

Table of Contents:

1.0 INFORMATION.....	1
1.1 Objective.....	1
1.2 Special Instructions All Operations.....	1
1.3 Operations List.....	2
2.0 SAFETY INFORMATION	3
2.4 Reference Safety Documentation	3
3.0 STAGING REQUIREMENTS	3
4.0 PLANNING REQUIREMENTS	3
4.4 Support Services, Commodities, and Equipment	3
4.4.9 Vehicles, Ground Support Equipment, and Special Equipment	3
4.4.13 Other Support (KSC).....	3
5.0 CONFIGURATION ACCOUNTING AND VERIFICATION	4
5.1 Specific OMRS Requirements Satisfied by this TOP	4

1.0 INFORMATION

1.1 Objective

To perform post-landing survey/inspection of Orbiter Thermal Protection Subsystem (TPS) to determine if components exhibit obvious damage that would require reservicing, repair, redesign or replacement.

1.2 Special Instructions All Operations

1. Suspect nonconformance's shall be augmented by various other nondestructive methods (shims, etc.).
2. Unless otherwise specified, inspection(s) shall be accomplished visually.
3. Handling or movement of components shall be held to a minimum.
4. Inspection steps may be performed out of sequence and/or concurrently in different areas.
5. Special precautions in handling RSI:
 - RSI ceramic tiles are very fragile and easily damaged. The highly porous, low density ceramic fibermat core is exceptionally low in tensile and compression strengths. Glaze on five faces of the tile is a thin brittle glass over a core offering very low resistance to crushing stresses. Slight finger pressure can often fracture the glaze making repair or replacement necessary. Exterior glass fabric or flexible insulation blankets, gap fillers and thermal barriers are easily snagged, abraded and damaged. RSI replacement and repair is difficult, expensive and time consuming.
 - Tile glaze is designed to seal outer surface of tile and provide critical optical properties. Properties may be partially lost or destroyed by fingerprints or contamination on the glazed surface. Contamination on nonglazed faying surface may significantly affect attachment-bonding characteristics.

6. Mandatory precautions in handling RSI:
- Wear clean white low-lint gloves when handling tile or tile subassemblies and subassembly components (strain isolator pads and filler bars), flexible insulation blankets and blanket components, thermal barriers and/or gap fillers.
 - Handle delicate tiles and tile subassemblies with extreme care to avoid fracturing the thin brittle glass surface glaze by squeezing, bumping or dropping.
 - Use extra caution to avoid bumping RSI when positioning work stands in RSI work or storage areas.
 - Comply with tethering/taping instructions.
7. During inspection, adequate lighting shall be obtained if not available in inspection area.

1.3 Operations List

Operation		Shop/ Cntl Rm Console	OPR	Haz (Y/N)	Duration (Hrs)
No.	Title				
10	TASK TEAM READINESS	TPS/ NONE	TPS	N	0.3
20	TPS ENG LANDING QUICK LOOK	TPS/ NONE	TPS	N	2.0

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

2.0 SAFETY INFORMATION

2.4 Reference Safety Documentation

Number	Rev	Title
KHB 1710.2	LI	KSC Safety Practices Handbook
GSOP 5400	LI	Ground Safety Operating Procedure

3.0 STAGING REQUIREMENTS

4.0 PLANNING REQUIREMENTS

OIR Required Yes [], No [X]

4.4 Support Services, Commodities, and Equipment

4.4.9 Vehicles, Ground Support Equipment, and Special Equipment

- (1) A72-0812, Access Stand, 11 to 29 ft
- (2) Hi-Ranger, 50 ft

4.4.13 Other Support (KSC)

- Nondedicated support shall be requested via STS/Payload KSC Integrated Control Schedule.

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

5.0 CONFIGURATION ACCOUNTING AND VERIFICATION

5.1 Specific OMRS Requirements Satisfied by this TOP

OMRS NO.	NOMENCLATURE/ EFFECTIVITY	SEQ-STEP (CAP)
V09AJ0.097	POST LANDING RUNWAY QUICK LOOK INSP	20-001
	L03 V02F14-90	
	V03F16-90	
	V04F14-90	
	V05F4-90	

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

OPERATION 10 TASK TEAM READINESS

Shop: TPS
Cntrl Rm Console: NONE
OPR: TPS
Zone: 100
Hazard (Y/N): N
Duration (Hrs): 0.3

Call To Stations

10-1 Verify constraints status.

TTL:

TH
39

3/12/02

10-2 Verify following personnel on station and ready to proceed with inspection.

TTL:

TH
39

3/12/02

Table 10-1 Required Personnel	
NASA KSC TPS Eng	1
SFOC TPS Eng	1
LSS TPS Eng	1

*** End of Call To Stations ***

*** End of Operation 10 ***

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

OPERATION 20 TPS ENG LANDING QUICK LOOK

Shop: TPS
Cntrl Rm Console: NONE
OPR: TPS
Zone: 100
Hazard (Y/N): N
Duration (Hrs): 2.0

TPS Engineering Team Post-Landing Runway Quicklook Inspection

NOTE

Post-landing runway quicklook inspection is to be performed after scheduled landing immediately following vehicle hazard and safety inspection. For unscheduled landing, perform as soon as practical.

Engineering shall assess overall vehicle TPS post-flight condition while placing special emphasis on potential impacts to TPS turnaround processing.

Team shall consist of NASA KSC, SFOC and LSS TPS Engineering.

Grossly anomalous conditions must be identified for PR initiation and addressed as soon as practical to support ferry flight and other post-flight turnaround activities.

- 20-1 TPS Engineering Team perform post-landing Orbiter walkdown visual inspection for gross TPS damage/anomalies. Sign upon completion of inspection.

OMRSD V09AJ0.097

USA
VM
09B

NASA KSC SE	<u>Jay Noel Huff</u>	Date	<u>3/12/02</u>
SFOC SE	<u>Allen. Smith MICKIS</u>	Date	<u>3/12/02</u>
LSS TPS	<u>William McCarty</u>	Date	<u>3/12/02</u>

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

20-2 Engineering and debris team take samples as deemed necessary. Document all samples in Table 20-1 (Sample Log). Before any samples are taken, obtain the following concurrence:

SFOC TPS Eng _____ Date _____

NASA TPS Eng _____ Date _____

LSS TPS Eng _____ Date _____

(Not Performed:)

20-2

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

Table 20-1 Sample Log				
Item	Part Number	Location	Remarks TPS Eng Team Signature	N/P
1				NP TH 39 MAR 12 '02
2				NP TH 39 MAR 12 '02
3				NP TH 39 MAR 12 '02
4				NP TH 39 MAR 12 '02
5				NP TH 39 MAR 12 '02
6				NP TH 39 MAR 12 '02
7				NP TH 39 MAR 12 '02
8				NP TH 39 MAR 12 '02
9				NP TH 39 MAR 12 '02
10				NP TH 39 MAR 12 '02

*** End of TPS Engineering Team Post-Landing Runway Quicklook Inspection ***

NOTE
Do not perform 20-3 if no debris samples were taken in the previous step.

20-3 Route samples with P/N, vehicle location and other pertinent data to NASA Debris Team Leader for analysis.

SFOC TPS Eng _____ Date _____

Not Performed: TH
39
3/12/02

07-05-2001
APPROVED

OMI V6028.001 A04
APPROVED

*** End of Operation 20 ***

```

*****
*          PROGRAM PRA120 SELECTION CRITERIA          *
*-----*
*          RPT TYPE: IPR                               *
*          PR GROUP:                                   *
*          WORK AREA CD:                               *
*          PR ELEM CD:                                 *
*          STS NO: 0109                                *
*          Starting RPT DT: 01/30/02                  *
*          Ending RPT DT: 03/18/02                   *
*          LRU or Non-LRU: B                          *
*          PRACA EFF CD:                               *
*          EICN:                                       *
*          RPT STATUS: OP                              *
*          DETECTED DURING: Y602S.001                *
*-----*
*          Sorted by DETECTED DURING, PR ELEM CD, and EICN *
*****

```

* NO DATA FOUND ON THE DATABASE FOR THE SELECTED PARAMETERS *
*

* END OF REPORT *



5.18-27 /

