
FMEA/CIL DATA SHEET

FMEA NUMBER: DTO-OTD03-006

ORIGINATOR: JSC

PROJECT: EVA

PART NAME: Socket Assy

LRU/ORU P/N: SED39128567-401

QUANTITY: 1

PART NUMBER: SEG33108487-301

LRU/ORU PART NAME: Bay 7 Port Installation

LSC CONTROL NO: N/A

DRAWING/REF DESIG: SEG33106375-301

SYSTEM: EVA

ZONE/LOCATION: Bay 7, Port Side

EFFECTIVITY/AFFECT STAGE: STS-80

SUBSYSTEM: TA&A

CRITICALITY

CRITICAL ITEM: No

SUCCESS PATHS: 3

CRITICALITY CATEGORY: 1R / 3

SUCCESS PATH REMAINING: 2

END ITEM NAME: ORU Transfer Device (OTD) Socket Assy

END ITEM FUNCTIONAL: Provides retention of OTD probe.

END ITEM CAPABILITY: Probe is retained via two 4-ball PIP-Pins.

END ITEM FAILURE TOLERANCE: The socket Assy is three fault tolerant for below failure mode.

REDUNDANCY SCREENS:

- | | | |
|---|----|--|
| A | 1. | C/O PRELAUNCH: PASS |
| | 2. | C/O ON ORBIT: PASS |
| B | 3. | DETECTION FLIGHT CREW: N/A |
| | 4. | DETECTION GROUND CREW: N/A for DTO |
| C | 5. | LOSS OF REDUNDANCY FROM SINGLE CAUSE: PASS |
| | 6. | ON-ORBIT RESTORABILITY: N/A for DTO |

FUNCTION: The OTD Socket Assembly Consists of a socket and two, four ball PIP pins that retain the OTD probe in the socket when the OTD is deployed.

FAILURE MODE CODE: N/A for DTO

FAILURE MODE: OTD PROBE FAILS TO DISENGAGE

CAUSE: Contamination, Binding/jamming, Thermal distortion.

REMAINING PATHS: 2 - 1. Remove socket assy; 2. Remove probe from stanchion & leave probe on socket.

EFFECT: MISSION PHASE: On-orbit EVA operations

CORRECTIVE ACTION: Remove socket assy & restow OTD.

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SUBSYSTEM: TA&A

-FAILURE EFFECTS-

END ITEM/LRU/ORU/ASSEMBLY: None after first failure. Remove socket assy & stow OTD if this fails then remove probe from stanchion, restow OTD & leave probe in socket.

SUBSYSTEM/NEXT ASSEMBLY/INTERFACE: None.

SYSTEM/END ITEM/MISSION: Degradation of DTO objectives.

CREW/VEHICLE: Unable to close PLB doors. Possible damage to PLB during landing. (OTD can not survive landing in the deployed position)

HAZARD INFORMATION:

HAZARD: YES NO

HAZARD ORGANIZATION CODE: N/A

HAZARD NUMBER: N/A

TIME TO EFFECT: Seconds

TIME TO DETECT: Seconds

TIME TO CORRECT: Seconds

FAILURE DETECTION: Visual

REMARKS:

OTD can be restowed with socket assy still on probe and survive landing environment. Likewise the probe can remain in the socket and survive the landing environment. Both of these cases have been verified by stress analysis

-RATIONALE FOR ACCEPTABILITY-

N/A

PREPARED BY: G. Harvey

REVISION: N/A

DATE: June 1996

WAIVER NUMBER: N/A