

**FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST**

**FMEA NUMBER: CSD-TB-35      ORIGINATOR: JSC      PROJECT: EDFT-02**

PART NAME: NHTT      LRU/ORU PART NUMBER: SED39127468      QUANTITY: 1  
 PART NUMBER: SED39127470-301      LRU/ORU PART NAME: ORT      SYSTEM: DTO 671  
 LSC CONTROL NO: N/A      DRAWING/REF DESIGNATOR: SEE P/N      SUBSYSTEM: EVA  
 ZONE/LOCATION: CABIN/PLB      EFFECTIVITY/AFFECT STAGE: STS-72 & SUBS

**CRITICALITY:**

CRITICAL ITEM: Yes      SUCCESS PATHS: 3  
 CRITICALITY CATEGORY: 1R/3      SUCCESS PATH REMAINING: 2

**REDUNDANCY SCREENS:**

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

**FUNCTION:** The ORU Restraint Tether (ORT) is a semi-rigid restraint aid available to EVA crewman to temporarily mount ORU's. The ORT interfaces with a ORU's Tether loop utilizing a push lock tether tool or nested hook tether tool and will be mounted to structure through a EVA change out mechanism. The base plate the ORT mounts to will incorporate EVA contingency bolts on STS-69. The closed loop tether tool is a modified version of the ORT. It is the same as the ORT without the ball stack. the closed loop ORT interfaces at it's base to a load alleviating ball. All ORT configurations are designed to restrain a ORU up to 50 lb. mass.

**FAILURE MODE CODE:** N/A for NSTS

**FAILURE MODE:** Unable to release ORU from hook.

**CAUSE:** Contamination, galling, piece part defect.

**REMAINING PATHS:** EVA change out mechanism.

**EFFECT/ MISSION PHASE:** EVA

**CORRECTIVE ACTION:** Release at EVA change out mechanism and jettison ORU.

**-FAILURE EFFECTS-**

**END ITEM/LRU/ORU/ASSEMBLY:**

Unable to extend retractable tether to access hook or unable to open hook.

**SUBSYSTEM/NEXT ASSEMBLY/INTERFACE:** N/A

**SYSTEM/END ITEM/MISSION:** Partial loss of DTO objective.

**CREW/VEHICLE :** None for single failure, ORT must be released from ORU to be properly stowed for landing. Possible vehicle damage due to loose equipment impact in PLB may occur.

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<b>ART NAME: NHTT</b>	<b>LRU/ORU PART NUMBER: SED39127468</b>	<b>QUANTITY: 1</b>
<b>ART NUMBER: SED39127470-301</b>	<b>LRU/ORU PART NAME: ORT</b>	<b>SYSTEM: DTD 671</b>
<b>IC CONTROL NO: N/A</b>	<b>DRAWING/REF DESIGNATOR: SEE P/N</b>	<b>SUBSYSTEM: EVA</b>
<b>ZONE/LOCATION: CABIN/PLB</b>	<b>EFFECTIVITY/AFFECT STAGE: STS-72 &amp; SUBS</b>	

**HAZARD INFORMATION:**

**HAZARD: YES:      NO: x**

**HAZARD ORGANIZATION CODE: N/A**

**HAZARD NUMBER: N/A**

**TIME TO EFFECT: Hours**  
**TIME TO DETECT: Seconds**  
**TIME TO CORRECT: Minutes**  
**FAILURE DETECTION/FLIGHT: Visual**

**REMARKS:**

**-RATIONALE FOR ACCEPTABILITY-**

- A) DESIGN: N/A
- B) TEST: N/A
- C) INSPECTION: N/A
- D) FAILURE HISTORY: N/A
- E) OPERATIONAL USE: N/A
- F) MAINTAINABILITY: N/A

**PREPARED BY: G.Wright**

**REVISION:**

**DATE: 4/15/95**

**WAIVER NUMBER**