

FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST

FMEA NUMBER: CSD-TB-36A **ORIGINATOR:** JSC **PROJECT:** EDFT-02

PART NAME: NHTT **LRU/ORU PART NUMBER:** SED39:27468 **QUANTITY:** 1
PART NUMBER: SED39:127470-301 **LRU/ORU PART NAME:** ORT **SYSTEM:** DTO 671
LSC CONTROL NO: N/A **DRAWING/REP DESIGNATOR:** SEE P/N **SUBSYSTEM:** EVA
ZONE/LOCATION: CABIN/PLB **EFFECTIVITY/AFFECT STAGE:** STS-72 & SUBS

CRITICALITY:

CRITICAL ITEM: No **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 coupled configuration ORT 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 gimbal. All ORT configurations are designed to restrain a ORU up to 50 lb. mass.

FAILURE MODE CODE: N/A for NSTS
FAILURE MODE: NHTT retractable tether mechanism jams.

CAUSE: Contamination, galling, piece part defect

REMAINING PATHS: EVA release mechanism or jettison. **EFFECT/ MISSION PHASE:** EVA

CORRECTIVE ACTION: For ORT release ORU from ORT at EVA release mechanisms. For Closed loop ORT release at EVA change out mechanism or jettison ORU and attaching structure (TERA or PFRWS).

-FAILURE EFFECTS-

END ITEM/LRU/ORU/ASSEMBLY:
 Unable access tether book to open bail.

SUBSYSTEM/NEXT ASSEMBLY/INTERFACE: N/A

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

CREW/VEHICLE : None for single failure. Unable to properly stow ORT/ORU for landing. Tether cable will also be subject to higher loads which could lead to it's failure.

FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST

MEA NUMBER: CSD-TB-36A ORIGINATOR: JSC PROJECT: EDFT-02

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

HAZARD INFORMATION:

HAZARD: YES: NO:

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