

FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST

FMEA NUMBER: EC-PWP72-32

ORIGINATOR:

JSC

PROJECT:EDFT-03

PART NAME:TETHER REEL ASSY
 PART NUMBER:SEG39126549-301
 LSC CONTROL NO: N/A
 ZONE/LOCATION:TERA

LRU/ORU PART NUMBER:SEG39126516-301
 LRU/ORU PART NAME: TERA
 DRAWING/REF DESIGNATOR: SEE P/N
 EFFECTIVITY/AFFECT STAGE: STS-72

QUANTITY: 1
 SYSTEM: GFE
 SUBSYSTEM: EVA

CRITICALITY:

CRITICAL ITEM: No
 CRITICALITY CATEGORY: 1R/3

SUCCESS PATHS: 3
 SUCCESS PATH REMAINING: 2

END ITEM NAME: N/A
 END ITEM FUNCTIONAL: N/A
 END ITEM CAPABILITY: N/A
 END ITEM FAILURE TOLERANCE: N/A

REDUNDANCY SCREENS:

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

FUNCTION: Part 1 - The TERA is the structural element used to mount the grapple fixture and APFR worksite interface. Also provided on the TERA are a retractable cable reel, safety tether mount, adapter plate interface, and load alleviator. Part 2 - The tether reel assy is used in the same manner as an equipment tether. It is provided as a safety feature in the event the EVA crewmember lost their grasp of the ORU.

FAILURE MODE CODE: N/A for NSTS.

FAILURE MODE: 1) Tether reel cable loss of structural integrity.
 2) Tether hook inadvertently opens.

CAUSE: Overload, material defect, piece part defect.

REMAINING PATHS:

OGLA or equipment tethers(while attached)
 Crew during ORU handling

EFFECT/MISSION PHASE: EVA

CORRECTIVE ACTION: Discontinue operation with this Tether Reel.

-FAILURE EFFECTS-

END ITEM/LRU/ORU/ASSEMBLY: Item is untethered during EVA manipulation.

SUBSYSTEM/NEXT ASSEMBLY/INTERFACE: N/A

SYSTEM/END ITEM/MISSION: None.

CREW/VEHICLE: Possible loss of ORU. Loose ORU could impact the crew or vehicle.

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|-----------------------------|-------------------------------------|----------------|
| PART NAME:TETHER REEL ASSY | LRU/ORU PART NUMBER:SEG39126516-301 | QUANTITY: 1 |
| PART NUMBER:SEG39126549-301 | LRU/ORU PART NAME: TERA | SYSTEM: GFE |
| LSC CONTROL NO: N/A | DRAWING/REF DESIGNATOR: SEE P/N | SUBSYSTEM: EVA |
| ZONE/LOCATION:TERA | EFFECTIVITY/AFFECT STAGE: STS-72 | |

HAZARD INFORMATION:

HAZARD: N/A

HAZARD ORGANIZATION CODE: N/A

HAZARD NUMBER: N/A

TIME TO EFFECT: Minutes
 TIME TO DETECT: Seconds
 TIME TO CORRECT: Seconds
 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: 8/10/95

WAIVER NUMBER: