FAILURE MODES AND EFFECTS ANALYSIS

REFERENCE DESIGNATOR:	2	PROJECT:	DTO 671 Program	SUBSYSTEM:	N/A
NAME / QUANTITY:	Rigid Tether Base	LRU NAME / QUANTITY:	Rigid Tether (RT) Assembly/1	EFFECTIVITY:	ALL ORBITERS
DRAWING REFERENCE	SED30125600	LRU PART NUMBER:	SED39125600-305		

FAILURE MODE NUMBER	CRITICALITY
DTO671-64-2-1	1R/2

FUNCTION

The RT serves as a method for an EVA crewmember to restrain an Orbital Replaceable Units (ORU) during translation. It comprises a rigid slider bar attached to a base arm. At the end of the slider bar is an attachment lock for tether loop interface tools that actually are the attachment devices to the ORUs.

FAILURE MODE AND CAUSE

MODE

The RT becomes disconnected from the MMWS base plate while restraining an ORU during an EVA.

CAUSE(S)

1) Lock lever pin backs out.
2) Ball deforms hole and falls out.
3) Spring failure.

REDUNDANCY SCREENS	*REMAINING PATHS*
A - Pass B - N/A C - Pass	1) Standby redundant item is equipment tether on RT that attaches to the MMWS.

MISSION PHASE	CORRECTIVE ACTION TIMES	
	TIME TO EFFECT	TIME TO CORRECT
EVA	Seconds	Immediately

FAILURE EFFECT

END ITEM

Loose hardware in the payload bay during an EVA.

MISSION

Potential loss of the ORU.

CREW / VEHICLE

Possible impact of EMU from loose equipment.

INTERFACE

MMWS and APFR Simulator.

FAILURE DETECTION METHOD

FLIGHT

Visual.

GROUND

None.

CORRECTIVE ACTION

If both the tapered pin ball lock and standby tether fail, the crew is trained to utilize a standard equipment tether and tether the RT for retrieval later. Crew must tether the RT to the MMWS while the RT is attached to the MMWS.

REMARKS

The RT and APFR Simulator will have a combined weight of 92 lbs for STS-64, -69 & -72.

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