

PAGE: 1

PRINT DATE: 08/09/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-102000-00-000-X

SUBSYSTEM NAME:

REVISION : 1 89/08/09

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
■ SRU :	WIRE HARNESS	V763-713727
■ SRU :	WIRE HARNESS	V763-713728
■ SRU :	WIRE HARNESS	V763-713732
■ SRU :	WIRE HARENESS	V763-713734
■ SRU :	WIRE HARNESS	V763-713736
■ SRU :	WIRE HARNESS	V763-713739
■ SRU :	WIRE HARNESS	V763-714729
■ SRU :	WIRE HARNESS	V763-714731
■ SRU :	WIRE HARNESS	V763-714733

■ EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
ORBITER INTERCONNECT CABLES AND CONNECTORS FROM PAYLOAD TANK TRANSDUCERS TO R11A1 PANEL OUTPUT JACK.

■ QUANTITY OF LIKE ITEMS:
SEVERAL, ALL FUNCTIONALLY THE SAME

■ FUNCTION:
SEVERAL INTERCONNECT CABLES AND CONNECTORS USED TO CARRY PRESSURE TRANSDUCER POWER AND SIGNALS BETWEEN THE GALILEO RPM TANKS AND THE OUTPUT JACK ON THE R11A1 PANEL. GROUPED UNDER ONE FMEA NUMBER BECAUSE ALL PROVIDE THE SAME FUNCTIONS, EXHIBIT SAME FAILURE MODES AND EFFECTS.

PAGE: 2

PRINT DATE: 08/28/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER

NUMBER: GO-AA-102000-00-000-01

SUBSYSTEM: GALLILEO RPM TANK MONITOR

REVISION# 1 89/08/25

ITEM NAME: WIRE HARNESS

CRITICALITY OF THIS FAILURE MODE: 1S

- FAILURE MODE:
SIGNAL OR POWER PATH IN CABLES OR CONNECTORS FAILS TO CONDUCT, *IMMEDIATEMENT Demand*

MISSION PHASE:
LS LANDING SAFING

- VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS STS-34

- CAUSE:
STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, THERMAL *Processing*,
STRESS *Anomaly*

- CRITICALITY 1/1 DURING INTACT ABORT ONLY? N

- REDUNDANCY SCREEN A) N/A
- B) N/A
- C) N/A

PASS/FAIL RATIONALE:

- A)
- B)
- C)

- FAILURE EFFECTS -

- (A) SUBSYSTEM:
ONE OR MORE OF THE SYSTEM FUNCTIONS WILL FAIL. POSSIBLE FAILURE TO
DETECT RUNAWAY TANK OVERPRESSURE.

- (B) INTERFACING SUBSYSTEM(S):
~~POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.~~ *Same as A*

- (C) MISSION:
POSSIBLE LOSS OF GALILEO/IUS PAYLOAD

*no effect - mission has already been started prior
to use of hardware*

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-102000-00-000-01

- (D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS OF ORBITER, POSSIBLE LOSS OF LIFE.
- (E) FUNCTIONAL CRITICALITY EFFECTS:
LOSS OF POWER OR SIGNAL PATH WILL RESULT IN LOSS OF ONE OR MORE SYSTEM FUNCTIONS, POSSIBLE FAILURE TO DETECT RUNAWAY TANK OVERPRESSURE, TANK RUPTURE, POSSIBLE LOSS OF ORBITER, POSSIBLE LOSS OF LIFE.

DISPOSITION RATIONALE-

(A) DESIGN

THE WIRE HARNESSES AND CABLES ARE FABRICATED ACCORDING TO APPROPRIATE WIRE LISTS FOR THEIR INTENDED USAGE. THE WIRE HARNESSES AND CABLES ARE COMPOSED OF PFA TEFLON INSULATED WIRE PER SPECIFICATIONS MB0150-081 AND -067, TETREFLON INSULATED WIRE PER SPECIFICATION MB0150-051, KAPTON INSULATED WIRE PER SPECIFICATION MB0150-043, AND COAX CABLE PER SPECIFICATION MB0150-057. TERMINATED IN CONNECTOR PER NASA SPECIFICATION 40M3277 AND 40N3556. ALL WIRE HARNESS ARE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF ML0004-0012 WITH CIRCUIT SEPARATION AS DEFINED IN WF0004-001.

(B) TEST

QUALIFICATION, CERTIFICATION AND ACCEPTANCE TESTS ARE PERFORMED TO SATISFY THE ENVIRONMENTAL, DESIGN AND PERFORMANCE REQUIREMENTS OF THE DESIGN REQUIREMENTS DOCUMENT (SDS88-0877) VERIFICATION MATRIX.

(C) INSPECTION

WIRE HARNESS ARE INSPECTED FOR WEIGHT, WORKMANSHIP, FINISH, DIMENSIONS, CONSTRUCTION, CLEANINESS, IDENTIFICATION MARKING AND CERTIFIED MATERIALS AND PROCESSES. ACCEPTANCE TEST PROCEDURE ARE APPROVED BY QUALITY ASSURANCE.

(D) FAILURE HISTORY

FAILURE HISTORY INDICATES NO GENERIC FAILURE MODES EXIST (APOLLO, MILITARY)

(X) OPERATIONAL USE
NONE

RELIABILITY ENGINEERING:	W. R. MARLOWE	:	<u>W. R. Marlowe</u>
DESIGN ENGINEERING	: L. COLEMAN	:	<u>L. Coleman</u>
QUALITY ENGINEERING	: C. ROLLINS	:	<u>C. Rollins</u>
NASA RELIABILITY	:	:	<u>[Signature]</u>
NASA SUBSYSTEM MANAGER	:	:	<u>[Signature]</u>
NASA QUALITY ASSURANCE	:	:	<u>[Signature]</u>