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PRINT DATE: 08/09/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-202000-02-000-X

SUBSYSTEM NAME:

REVISION : 1 89/08/09

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	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ SRU :	CURRENT LOOP <sup>PRESSURE</sup> METER NEWPORT ELECTRONICS	558A

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- EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
CURRENT LOOP DRIVEN PRESSURE METER. 4 MA.=0.00 PSI, 20 MA.=500. PSI  
NEWPORT ELECTRONICS MODEL NO. 558A (500 LB)
- QUANTITY OF LIKE ITEMS: 2  
TWO, ONE IN EACH TANK MONITOR CIRCUIT.
- FUNCTION:  
IN EACH TANK MONITOR CIRCUIT, THE PRESSURE METER INDICATES THE INTERNAL  
TANK PRESSURE. M1 IS USED IN TANK NO. 1 CIRCUIT, M2 IS USED IN TANK  
NO. 2 CIRCUIT.

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SHUTTLE CRITICAL ITEMS LIST - ORBITER

NUMBER: GO-AA-202000-02-000-01

SUBSYSTEM: GALLILEO RPM TANK MONITOR

REVISION# 1 89/08/25

ITEM NAME: CURRENT LOOP <sup>Pressure</sup> METER

CRITICALITY OF THIS  
FAILURE MODE: 1S

■ FAILURE MODE:  
NO OUTPUT READING FROM THE PRESSURE METER IN RESPONSE TO INPUT SIGNAL

MISSION PHASE:  
LS LANDING SAFING

■ VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS STS-54

■ CAUSE:  
STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK,  
ELECTRICAL STRESS, THERMAL STRESS

■ 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:  
POSSIBLE UNDETECTED RUNAWAY TANK OVERPRESSURE.
- (B) INTERFACING SUBSYSTEM(S):  
POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.
- (C) MISSION:  
POSSIBLE LOSS OF THE GALILEO/IUS PAYLOAD
- (D) CREW, VEHICLE, AND ELEMENT(S):  
POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE.

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-202000-02-000-01

- (E) FUNCTIONAL CRITICALITY EFFECTS:  
POSSIBLE FIRE/EXPLOSION, POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE.

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 - DISPOSITION RATIONALE -  
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(A) DESIGN

METER ELECTRONICALLY CONVERTS AN INPUT OF 4 TO 20 mA INTO 0 TO 500 COUNTS SCALED BY THE MANUFACTURER. THIS DEVICE IS LOOP POWERED REQUIRING NO OTHER POWER SOURCE.

(B) TEST

CALIBRATION LABORATORY EACH METER TO THE REQUIREMENTS SPECIFIED ON GO73-700176.

(C) INSPECTION

THE METER IS INSPECTED FOR WEIGHT, WORKMANSHIP, FINISH, DIMENSIONS, CONSTRUCTION, CLEANNESS, IDENTIFICATION MARKING AND CERTIFIED MATERIALS AND PROCESSES. ACCEPTANCE TEST SPECIFICATION ARE APPROVED BY QUALITY ASSURANCE AND PROVIDES ISOLATION, CONTINUITY AND FUNCTIONAL TESTING OF THE ASSEMBLY.

(D) FAILURE HISTORY

NO GENERIC FAILURES

(E) OPERATIONAL USE

CONTINGENCY ONLY. THE METER LOCATED IN THE GO73-700176 CONVERTS AN INPUT OF 4 TO 20 mA INTO 0 TO 500 COUNTS AT THE REMOTE LOCATION. USAGE IS ONE TIME ONLY IF MISSION IS ABORTED WITH GALILEO ON BOARD. THIS DEVICE FOR SELF VERIFICATION AND IS NOT CRITICAL TO SYSTEM OPERATION. A SPARE ASSEMBLY WILL BE AVAILABLE AT THE ABORT SITE.

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 - APPROVALS -  
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RELIABILITY ENGINEERING:	W. R. MARLOWE	:	<u>W. R. Marlowe</u> <i>rix</i>
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>