

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : LIFE SUPPORT

FMEA NO 06-2F -371000-1

REV:10/29/87

ASSEMBLY . FIRE SUPPRESSION
 P/N RI : V070-623411-001 & -002
 P/N VENDOR: FSN 4210-00-555-8837
 QUANTITY : 3
 : ONE ON FLIGHT DECK
 : TWO ON MID-DECK

VEHICLE	102	103	104
EFFECTIVITY:	X	X	X
PHASE(S):	PL X LO	OC X DO	LS X

CRIT. FUNC: 1R

CRIT. HDW: 3

REDUNDANCY SCREEN: A-FAIL B-N/A C-PASS

PREPARED BY:
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 REL D. RISING
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APPROVED BY:
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APPROVED BY (NASA):
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 QE *[Signature]* 11-3-87

ITEM:

PORTABLE FIRE EXTINGUISHER

FUNCTION:

TO PROVIDE FIRE SUPPRESSANT IN THE FLIGHT DECK, MIDDECK, AND AIRLOCK AREAS. TO PROVIDE FIRE SUPPRESSANT FOR FLIGHT AND MIDDECK PANELS. TO PROVIDE BACKUP FIRE SUPPRESSANT FOR THE CABIN AVIONICS BAYS.

FAILURE MODE:

FAILS TO OPERATE (JAMMED ACTUATOR)

CAUSE(S):

CONTAMINATION, PIECE PART STRUCTURAL FAILURE.

EFFECT(S) ON:

(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF ONE OF THREE PORTABLE FIRE EXTINGUISHERS.

(B,C,D) NO EFFECT

(E) LOSS OF ALL THREE FIRE EXTINGUISHERS CAN CAUSE LOSS OF CREW/VEHICLE IF COMBUSTION IS SUPPORTED IN THE CABIN.

REDUNDANCY SCREEN A FAILS BECAUSE PORTABLE FIRE EXTINGUISHER CAN NOT BE VERIFIED WITHOUT EXPELLING SUPPRESSANT.

DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A) DESIGN

OFF THE SHELF ITEM SINCE 1963 MADE TO U.S. ARMY MIL-SPEC (MIL-E-52031D). ALL MATERIALS USED ARE COMPATIBLE WITH HALON 1301. STAINLESS STEEL CYLINDER. ANODIZED ALUMINUM, BRASS PLUG AND SEAL, NICKEL PLATED BRASS VALVE STEM, TEFLON NON-METALLICS. SAFETY PIN AND BURST DISC.

(B) TEST

25 FT-LB TORQUE; LEAK <0.1 OZ./YEAR; VIBRATION-60CPS AT 1.25G FOR ONE HOUR PER AXIS; FOUR FOOT DROP TEST ON CONCRETE/3 AXIS; LOW TEMP. TEST AT 50 DEG F AND PRESSURIZED AT 1025 PSIA FOR 12 HOURS; SALT SPRAY TEST; 1 LB LOAD AT 1120 PSIA TEST ON THE SAFETY PIN.

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TURNAROUND: VISUAL INSPECTION FOR DAMAGE EVERY FLIGHT.

(C) INSPECTION

RECEIVING INSPECTION

RAW MATERIALS ARE VERIFIED BY INSPECTION.

CONTAMINATION CONTROL

CORROSION PROTECTION, CONTAMINATION CONTROL, CLEANING, AND CLEANLINESS LEVEL ARE VERIFIED BY INSPECTION.

ASSEMBLY/INSTALLATION

MANUFACTURING PROCESSES, INSTALLATION, AND ASSEMBLY ARE VERIFIED BY INSPECTION. VERIFY DIMENSIONS AND INSTALLATION OF SPECIAL NOZZLE. PARTS PROTECTION IS VERIFIED BY INSPECTION.

HANDLING/PACKAGING

HANDLING AT SUPPLIER AND PACKAGING FOR SHIPMENT IS VERIFIED BY INSPECTION.

(D) FAILURE HISTORY

MATURE HARDWARE. NO APPLICABLE FAILURE HISTORY.

(E) OPERATIONAL USE

USE ANOTHER PORTABLE FIRE EXTINGUISHER.