

# CRITICAL ITEMS LIST

ASSY NOMENCLATURE: PARACHUTE HARNESS

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: SK1102450007

SUBSYSTEM: PERSONAL PARACHUTE ASSY.

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT OR INDICEM	RATIONALE FOR ACCEPTANCE
REF	REV					
7.4.1		EXTRACTION BRIDLE CUTTERS, (2) SK1102450007	1/1	7.4.1 Mode: Bridle assembly separation cutter activates early  Cause: • defective material • immediate luring of cutter from aerodynamic loading	Possible crewmember impact with Orbiter	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <p>a. The cutters are activated from the load on the Kevlar loop moving the cutter pulling the arming pin</p> <p>b. The force to activate the cutter is 35 ± 16 pounds per side.</p> <p>c. The loading on the bridle is 800 pounds minimum</p> <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <p>a. <u>Acceptance Test</u></p> <p>(1) Lot acceptance functional test, on a lot of 121 cutters, one unit at -65°F, one unit at 160°F, three units at 70°F</p> <p>(2) Pull force test at 35 ± 16 pounds</p> <p>(3) Delay time test at 1.5 ± 0.3 seconds.</p> <p>b. <u>Certification Test</u></p> <p>(1) Four dummy drops at 110 knots, 2 at 10,000 feet, 2 at 25,000 feet.</p> <p>(2) Four live water drop jumps</p> <p>(3) One 300 knot wind blast test</p> <p>(4) Four dummy drops at 125 knots, 2 at 10,000 feet, 2 at 25,000 feet.</p> <p>(5) Eight live jumps at 110 knots, 4 at 10,000 feet, 4 at 6,000 feet</p>

PREPARED BY: R. L. ALLISON, M. NEAR

SUPERSEDING DATE: 10/24/08

J. O. SCHLOSSER

DATE: 07/89

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRTY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
7.4.1		EXTRACTION BRIDLE CUTTERS, (2) SK1102450087	1/1	<p>7.4.1 Mode: Bridle assembly separation cutter activates early</p> <p>Cause:            • defective material            • immediate filing of cutter from aerodynamic loading</p>	Possible crewmember impact with Orbiter	<p>(6) Four live jumps at 170 knots, 15,000 feet</p> <p>(7) Four live jumps at 185 knots, 20,000 feet</p> <p>(8) Four live jumps at 200 knots, 25,000 feet.</p> <p>(9) Ten firings at JSC TFA facility</p> <p>c. <u>Turnaround Test</u> (In accordance with PIA 23028)</p> <p>The PPA will be unpacked, inspected, and repacked prior to each flight</p> <p>3. <u>INSPECTION</u></p> <p>a. Visual inspection of all parts for defects</p> <p>b. Verify pull test is within <math>35 \pm 16</math> pounds</p> <p>c. Verify time delay test is within <math>1.5 \pm 0.3</math> seconds.</p> <p>d. Visual inspection of final assembly</p> <p>e. Verification of the physical and chemical test reports</p> <p><u>Turnaround Inspection</u>. (In accordance with PIA 23028)</p> <p>a. The PPA will be unpacked, inspected, and repacked prior to each flight</p> <p>b. Verify dimensions between cutters during packing of PPA.</p>

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CMT Y	FAILURE MODE AND CAUSE	FAILURE EFFECT OR END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
741		EXTRACTION BRIDLE CUTTERS, (2) SK1102450007	1/1	7.4.1 Mode: Bridle assembly separation cutter activates early  Cause: • defective material • immediate firing of cutter from aerodynamic loading	Possible crewmember impact with Orbiter	4. FAILURE HISTORY None. The cutters are in fleet use by the Navy  5. OPERATIONAL USE a. Operational Effect of Failure - Possible loss of crewmember. b. Crew Action - None. c. Crew Training - Not applicable. d. Mission Constraints - None. Mission would be terminated prior to use of this equipment e. In-Flight Check out - None

PREPARED BY: R. L. ALPSON, M IERR

SUPERSEDING DATE: 17/2/2018

APPROVED BY: J. D. SCHLOSSER

DATE: 07/18