

# 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 END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
731		EXTRACTION BRIDLE, (1) SK1102450007	1/1	<p>7.3.1 Mode: Bridle assembly fails</p> <p>Cause:  <ul style="list-style-type: none"> <li>• excessive load</li> <li>• defective material</li> <li>• "D" ring breaks</li> <li>• Kevlar breaks</li> </ul> </p>	Crewmember may not clear Orbiter during bailout	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODES</p> <ul style="list-style-type: none"> <li>a The Kevlar loops are rated at 3,000 pounds each</li> <li>b The maximum load is 1,200 pounds</li> <li>c The nylon webbing is certified in accordance with MIL-W-4088, type B</li> <li>d The webbing assembly is rated to 4,000 pounds</li> <li>e The Kevlar loops are double finger trapped at the attachment points</li> <li>f The stitching is 6 cord nylon thread in accordance with U-T-295, with a breaking strength of 54 pounds</li> <li>g The webbing assembly is stitched 4-6 stitches per inch over 5.5 inches</li> <li>h The "u" ring is rated at 5,000 pounds</li> </ul> <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <ul style="list-style-type: none"> <li>a <u>Acceptance Test:</u> <ul style="list-style-type: none"> <li>(1) Tensile test Kevlar line to 3,000 pounds minimum</li> <li>(2) Tensile test nylon webbing to 4,000 pounds minimum</li> <li>(3) Tensile test 6 cord thread to 54 pounds minimum</li> <li>(4) Proof load "D" ring to 5,000 pounds minimum</li> </ul> </li> </ul>

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

SUPERSEDING DATE: 10/72

BY: J. D. SCHLOSSER

DATE: 02/89

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
7.3.1		EXTRACTION BRIDLE, (1) SK1102450007	1/1	7.3.1 Mode: Bridle assembly fails  Cause: • excessive load • defective material • "D" ring breaks • Kevlar breaks	Crewmember may not clear Orbiter during bailout	b. <u>Certification Test</u>  (1) Four dummy drops at 110 knots, 2 at 10,000 feet, 2 at 25,000 feet (2) Four live water drop jumps. (3) One 300 knot wind blast test (4) Four dummy drops at 225 knots, 2 at 10,000 feet, 2 at 25,000 feet. (5) Eight live jumps at 110 knots, 4 at 10,000 feet, 4 at 6,000 feet. (6) Four live jumps at 170 knots, 15,000 feet. (7) Four live jumps at 185 knots, 20,000 feet (8) Four live jumps at 200 knots, 25,000 feet. (9) The bridle is subjected to a total force in-flight egress load of 2.0 times the maximum expected load  c. <u>Turnaround Test</u> (In accordance with PIA 23028)  The PPA will be unpacked, inspected, and repacked prior to each flight  3. <u>INSPECTION</u> a. Visual inspection of the Kevlar line for defects b. Visual inspection of the nylon webbing for defects c. Visual inspection of cord thread for defects

# CRITICAL ITEMS LIST

ASSY NOMENCLATURE: PARACHUTE HARNESS

SYSTEM: CREWESCAPE SYSTEM

REVISION:

ASSY P/N: SK1102450087

SUBSYSTEM: PERSONAL PARACHUTE ASSY.

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT OR EVIDENCE	RATIONALE FOR ACCEPTANCE
REF	REV					
7.3.1		EXTRACTION BRIDLE, (1) SK1102450087	1/1	7.3.1 Mode: Bridle assembly fails  Cause: • excessive load • defective material • "D" ring breaks • Kevlar breaks	Crewmember may not clear Orbiter during bailout	d. Visual inspection of "D" ring for burrs, sharp edges, and verify dimensions are in conformance with the MIL-H-7515. e. Verify breaking strength of Kevlar line. f. Verify breaking strength of nylon webbing. g. Verify breaking strength of 6 cord thread. h. Verify stitching is stitched 4-6 stitches per inch and check for any defects  <u>Turnaround Inspection</u> (In accordance with PIA 23028) a. The PPA will be unpacked, inspected, and repacked prior to each flight. b. Visual inspection of the Kevlar line for defects. c. Visual inspection of the nylon webbing for defects. d. Visual inspection of 6 cord thread for defects. e. Visual inspection of "D" ring for burrs, sharp edges, and verify dimensions are in conformance with the MIL-SPEC. f. Verify stitching is stitched 4-6 stitches per inch and check for any defects  <b>4. FAILURE HISTORY</b>  None

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

SUPERSEDING DATE: |

TO BY: J. O. SCHLOSSER

DATE: 07/09

# CRITICAL ITEMS LIST

ASSY NOMENCLATURE: PARACHUTE HARNESS

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: SK11D2450087

SUBSYSTEM: PERSONAL PARACHUTE ASSY.

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
7.3.1		EXTRACTION BRIDLE, (1) SK11D2450087	1/1	7.3.1 Mode: Bridle assembly fails  Cause: • excessive load • defective material • "D" ring breaks • Kevlar breaks	Crewmember may not clear Orbiter during bailout	<p>5. OPERATIONAL USE</p> <ul style="list-style-type: none"> <li>a. Operational Effect of Failure - Possible loss of crewmember</li> <li>b. Crew Action - None</li> <li>c. Crew Training - Not applicable</li> <li>d. Mission Constraints - None. Mission would be terminated prior to use of this equipment</li> <li>e. In Flight Checkout - None.</li> </ul>