

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: GAS CONTAINER ASSEMBLY

SYSTEM: CREW ESCAPE SYSTEM

REVISION

ASSY P/N: 40014G-0183

SUBSYSTEM: LAUNCH ENTRY SUIT

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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					
3.8.1		GAS CONTAINER ASSEMBLY (Counter Pressure Garment) (1), 18951G-02	1/1	<p>3.8.1 Mode: Leakage or separation of gas bladder</p> <p>Cause: • overstress • defective material</p>	Unable to maintain suit pressure	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <p>a. Material is polyurethane</p> <p>b. The gas container is ultrasonic (heat) sealed</p> <p>c. The restraint layer and restraint cover are exterior to the gas container and function as protective covers.</p> <p>d. This configuration is currently used in various Department of Defense flight suits</p> <p>e. The configuration is utilized in the extravehicular mobility unit</p> <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <p>a. <u>Acceptance Testing</u></p> <p>(1) Production lot samples are tested to ensure the desired construction strength</p> <p>(2) Leak tested at 3.0 ± 0.2 psig for 15 minutes, 130.0 scc/minute maximum allowable leak rate.</p> <p>(3) Proof pressure tested at two times the operational pressure.</p> <p>(4) Restraint and gas container are structural tested at 5.6 ± 0.2 psig for 15 minutes</p> <p>(5) Cover all assembly systems pressurization/leak test system #1: 2,400 scc/minute maximum at 145.0 ± 10.0 mmHg</p> <p>(6) Cover all assembly systems pressurization/leak test system #2: 2,400 scc/minute maximum at 110.0 ± 10.0 mmHg</p> <p><u>Certification Testing</u></p> <p>a. Overstress test to four times operational pressure (7.8 psi) 11.2 ps.</p>

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 ATTACHMENT II
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PREPARED BY: R. L. ALBISON

SUPPLEMENTING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

CEE/LES-24

CRITICAL ITEMS LIST

ASSY Nomenclature: GAS CONTAINER ASSEMBLY

SYSTEM: CREW ESCAPE SYSTEM

REVISION

ASSY P/N: 40014G-07BY

SUBSYSTEM: LAUNCH ENTRY SUIT

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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					
3.8.1		GAS CONTAINER ASSEMBLY (Counter Pressure Garment) (1), 1B954G-02	1/1	3.8.1 Mode: Leakage or separation of gas bladder Cause: • overstress • defective material	Unable to maintain suit pressure	<p>b. <u>Certification Test.</u></p> <p>(1) High altitude chamber test, Brooks Air Force Base</p> <p>(a) Unmanned testing series</p> <ol style="list-style-type: none"> 1 Gradual ascent/descent to 100,000 feet. 2 Rapid decompression to 90,000 feet. 3 Endurance run/rapid decompression to 100,000 feet for 37 minutes. <p>(b) Manned testing series</p> <ol style="list-style-type: none"> 1 Gradual ascent/descent to 100,000 feet 2 Rapid decompression to 90,000 feet. 3 Endurance run/rapid decompression to 100,000 feet for 37 minutes <p>c. <u>Turnaround Test</u> (In accordance with PIA 23033)</p> <p>(1) Leak tested at 3.0 ± 0.2 psig for 15 minutes, 130 scc/minute maximum allowable leak rate.</p> <p>(2) Restraint and gas container are structural tested at 5.6 ± 0.7 psig for 15 minutes</p> <p>3 INSPECTION</p> <ol style="list-style-type: none"> a. One hundred percent verification of all cementing and stitching operations b. One hundred percent visual inspection for leakage. c. Visual inspection of link net for defects. d. One hundred percent inspection during assembly.

PREPARED BY: M. L. ALLISON

SUPERSEDING DATE

APPROVED BY: J. O. SCHLOSSER

DATE:

CEE/LES-25

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 ATTACHMENT - II
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: GAS CONTAINER ASSEMBLY

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 40074G-018Y

SUBSYSTEM: LAUNCH ENTRY SUIT

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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					
J.R.1		GAS CONTAINER ASSEMBLY (Counter Pressure Garment) (1), 19951G-02	I/I	3.8.1 Mode: Leakage or separation of gas bladder Cause: • overstress • defective material	Unable to maintain suit pressure	<p><u>Turnaround Inspection:</u> (In accordance with PIA 23033)</p> <p>a. One hundred percent visual inspection for leakage.</p> <p>b. Visual inspection of link net for defects.</p> <p>4. FAILURE HISTORY</p> <p>None. The gas container is used by the Air Force in high altitude suits for high performance aircraft and Dryden Flight Research Center.</p> <p>5. OPERATIONAL USE</p> <p>a. Operational Effect of Failure: Possible loss of crewmember.</p> <p>b. Crew Action - None.</p> <p>c. Crew Training - Not applicable.</p> <p>d. Mission Constraints - None.</p> <p>e. In-Flight Checkout - None. Crew could not repair or replace a defective gas container assembly.</p>

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PREPARED BY: A. L. ALZIDUN

SUPERSEDING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

CEE/LES-26