

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-G GARMENT

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 40023G-011H

SUBSYSTEM: LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT OR END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
3.13	1	ANTI-G GARMENT (1), 18951G-02	2/1A	<p>3.13.1 Mode: Leakage or separation of gas container bladder</p> <p>Cause: • defective material</p>	Loss of garment pressure	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. The material is polyurethane b. The bladder is ultrasonic (heat) sealed. c. The garment is protected by the exterior cover. d. This anti-G garment has flown on all previous STS flights; configuration is utilized by Department of Defense high-performance aircraft. <p>2. TEST OR ANALYSIS TO DETECT FAILURE MODE</p> <ul style="list-style-type: none"> a. <u>Acceptance Testing.</u> <ul style="list-style-type: none"> (1) Bladder assembly leak test, 1.5 ± 0.1 psig for 15 minutes, allowable leak rate of 25.0 scc/minute maximum. (2) Anti-G suit leak test, 2.5 ± 0.1 psig for 15 minutes, allowable leak rate of 50.0 scc/minute maximum. (3) Anti-G suit structural test, 5.6 ± 0.2 psig for 15 minutes. b. <u>Certification Test.</u> <ul style="list-style-type: none"> (1) Bladder assembly leak test, 1.5 ± 0.1 psig for 15 minutes, allowable leak rate of 25.0 scc/minute maximum. (2) Anti-G suit leak test, 2.5 ± 0.1 psig for 15 minutes, allowable leak rate of 50.0 scc/minute maximum. (3) Anti-G suit structural test, 5.6 ± 0.2 psig for 15 minutes.

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SUPRESEDING DATE:

APPROVED BY: E. O. SCHLOSSER

DATE

CEE/KES-38

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-G GARMENT

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SUBSYSTEM LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT OR IND ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
3.13.	1	ANTI-G GARMENT (1), 1895TG-02	2/1R	3.13.1 Mode: Leakage or separation of gas container bladder Cause: ■ defective material	Loss of garment pressure	<p>b. <u>Turnaround Test</u> (In accordance with PIA 23033)</p> <p>(1) Bladder assembly leak test, 1.5 ± 0.1 psig for 15 minutes, allowable leak rate of 25.0 scc/minute maximum.</p> <p>(2) Anti-G suit leak test, 2.5 ± 0.1 psig for 15 minutes, allowable leak rate of 50.0 scc/minute maximum.</p> <p>(3) Anti-G suit structural test, 5.6 ± 0.2 psig for 15 minutes.</p> <p>3. <u>INSPECTION</u></p> <p>a. One hundred percent verification of all cementing seams and stitching operations.</p> <p>b. One hundred percent inspection for leakage.</p> <p>c. Visual inspection of material for defects.</p> <p>d. One hundred percent inspection during assembly.</p> <p><u>Turnaround Inspection</u> (In accordance with PIA 23033)</p> <p>a. One hundred percent inspection for leakage.</p> <p>b. Visual inspection of material for defects.</p> <p>4. <u>FAILURE HISTORY</u></p> <p>None. The anti-G garment has been used on all previous STS flights.</p>

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: ANTI-G GARMENT

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 40023G-01CH

SUBSYSTEM: LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT/OM	RATIONALE FOR ACCEPTANCE
REF	REV				END ITEM	
3.13.1		ANTI-G GARMENT (1), 1895TG-02	2/1R	<p>3.13.1 Mode: Leakage or separation of gas container bladder</p> <p>Cause: defective material</p>	Loss of garment pressure.	<p>5. OPERATIONAL USE</p> <p>a. Operational Effect of Failure - Crewmember could black out. Possible loss of crew if the pilot and commander both black out</p> <p>b. Crew Action - None</p> <p>c. Crew Training - Crew is trained in the proper use of the equipment.</p> <p>d. Mission Constraints - None</p> <p>e. In-flight Checkout - None. Crew could not repair or replace a defective G-suit</p>

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