

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: OXYGEN REGULATOR

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F241-1700-1

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRITY	FAILURE MODE AND CAUSE	FAILURE EFFECT OR LIM ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
4.3.2		OXYGEN REGULATOR (1), SKD13101506-381	10	<p>4.3.2 Mode: Fails open</p> <p>Cause:</p> <ul style="list-style-type: none"> • defective material • contamination • broken demand spring 	Excessive consumption of EOS	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. The regulator is in use by the Air Force. b. The cover and body are cast aluminum. c. The diaphragm and packings are silicone elastomer. d. Internal parts are stainless steel and phosphor bronze e. A screen filter is installed on the inlet port to prevent contamination of the regulator. <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) Leakage test at 2 inches of H₂O at 120 psig, leakage allowed (0.9 - 1.65 inches H₂O) (2) Flow test: 0 slpm at 55 psig; 90 slpm at 55 psig; 0 slpm at 90 psig; and 90 slpm at 90 psig. (3) Flow test at altitude: 0 alpm (40,000 feet) at 50 psig; 90 alpm (40,000 feet) at 50 psig; 0 alpm (43,000 feet) at 50 psig; 90 alpm (43,000 feet) at 50 psig; 0 alpm (40,000 feet) at 90 psig; 90 alpm (40,000 feet) at 90 psig; 0 alpm (43,000 feet) at 90 psig; and 90 alpm (43,000 feet) at 90 psig. b. <u>Certification Test</u> <ul style="list-style-type: none"> (1) High altitude chamber test, Brooks Air Force Base. <ul style="list-style-type: none"> (a) Manned testing series <ul style="list-style-type: none"> 1 Gradual ascent/descent to 39,000 feet 2 Denitrogenation verification for function as an extravehicular activity prebreathing device

PREPARED BY: R. L. ALBION

SUPERSEDING DATE:

APPROVED BY: J.O. SCHLOSSER

DATE:

CEFI W.D.-G

S402100
 ATTACHMENT - I
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: OXYGEN REGULATOR

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F241-1700-1

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	QTY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
4.3.2		OXYGEN REGULATOR (1), SKD13191506-301	1/1	<p>4.3.2 Mode: Fails open</p> <p>Cause:</p> <ul style="list-style-type: none"> • defective material • contamination • defective diaphragm 	Excessive consumption of EOS	<p>c. <u>Turnaround Test</u> (In accordance with PIA 23037)</p> <p>(1) Leak test at 120 psig (leakage allowable 0.9 - 1.65 in H₂O).</p> <p>(2) Regulator positive pressure test. at 55 psig, 0 lpm; at 55 psig, 135 lpm, pressure should be equal to or greater than 0.1 in H₂O; at 110 psig, 135 lpm, pressure should be equal to or greater than 0.1 in H₂O; at 110 psig, 0 lpm, pressure should be (0.9 - 1.65 in H₂O); at 140 ± psig, 45 lpm, pressure should be equal to or greater than 0.0 in H₂O; at 140 ±, 20 psig, 0 lpm, pressure should be (0.9 - 1.65 in H₂O).</p> <p>3. <u>INSPECTION</u></p> <ol style="list-style-type: none"> a. Visual inspection of parts for defects b. One hundred percent visual inspection during assembly of regulator. c. Verify regulator operates within leakage specifications. d. Verify regulator operates within positive pressure test specifications. e. Verify parts and regulator are cleaned to level 300 in accordance with JSCM 5322. <p><u>Turnaround Inspection</u> (In accordance with PIA 23037)</p> <ol style="list-style-type: none"> a. Visual inspection of parts for defects b. One hundred percent visual inspection during assembly of regulator c. Verify regulator operates within leakage specifications.

PREPARED BY: N. J. ALLISON

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DATE:

CEE/HRA-10

SH02100
 ATTACHMENT - II
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: OXYGEN REGULATOR

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F201-1780-1

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	QNTY	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
4.3.2		OXYGEN REGULATOR (1), SKD13101506-301	1/1	<p>4.3.2 Mode: Fails open</p> <p>Cause: • defective material • contamination • defective diaphragm</p>	Excessive consumption of EOS	<p>d. Verify regulator operates within positive pressure test specifications.</p> <p>e. Verify parts and regulator are cleaned to level 300 in accordance with JSCM 5322.</p> <p>4. FAILURE HISTORY None. This regulator 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. Mission would be terminated prior to emergency use of this equipment.</p> <p>e. In-Flight Checkout - None. Crew could not repair or replace a defective regulator.</p>

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CEE/HRM-11

STRUCTURE ATTACHMENT - II
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: EXHALATION VALVE

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: F1023-5

SUBSYSTEM: HELMET RETENTION ASSEMBLY

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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					
4.4.2		EXHALATION VALVE (2), SKD131D1546-3B1	2/1R	<p>4.4.2 Mode: Valve fails closed</p> <p>Cause: <ul style="list-style-type: none"> • defective material • contamination </p>	Buildup of carbon dioxide if second valve fails	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. The exhalation valve is in current use by the Air Force. b. The valve is a mica disc. c. The case and seat is aluminum. d. The spring is phosphor bronze under calibrated compression. e. The valve opens at 1.65 ± 0.15 inches H₂O at a minimum input flow which shall not exceed 25 cc/minute. f. Resistance at flows of 0 to 95 slpm, 3.0 inches H₂O maximum; 0 to 2 slpm, 0.3 inch H₂O maximum above pressure setting. <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) Flow of 25 cc/minute, at 70 psig - back pressure should read 1.65 ± 0.15 inches H₂O. (2) Flow of 2 slpm, at 70 psig - back pressure should not increase more than 0.3 inch H₂O. (3) Flow of 95 slpm, at 70 psig - back pressure should be less than 3.0 inches H₂O. b. <u>Certification Test</u> <ul style="list-style-type: none"> (1) High altitude chamber test, Brooks Air Force Base. <ul style="list-style-type: none"> (a) Manned test series <ul style="list-style-type: none"> 1 Gradual ascents and descents to 39,000 feet 2 Denitrogenation verification for function as an extravehicular activity prebreath device

PREPARED BY: R. L. ALLISON

SUPERSEDING DATE:

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DATE:

CEE/HRA-12

SH02100
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