CRITICAL ITEMS LIST

ASSY NOMENCLATURE: *NECK RING DISCONNECT ASSY.* SYSTEM: *CREW ESCAPE SYSTEM* REVISION:

ASSY P/N: *10040-01* SUBSYSTEM: *HELMET RETENTION ASSEMBLY*

FMEA REF	FMEA REV	NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
4.2.2		NECK RING DISCONNECT ASSEMBLY (1), SKD13101506-301	1/1	4.2.2 Mode: Jammed neck ring Cause: •defective material •overstress	Cannot lock helmet or maintain suit pressure	1. DESIGN FEATURES TO MINIMIZE FAILURE MODE a The cam slots and side grooves of the locking ring are coated with Molykote (321R) b The edge of the latch is beveled to provide positive installation of the helmet onto the neck ring. c The locking ring is installed with four screws to ensure proper alignment. d. The neck ring is made of anodized cast aluminum. e The inner race top surface is coated with Molykote. f. This configuration is currently being flown by the Department of Defense in high-performance aircraft 2. TEST OR ANALYSIS TO DETECT FAILURE MODE a Acceptance Testing. (1) Functional test lock to ensure proper operation. (2) Rotate locking ring, inner race and outer race. (3) Test running torque to 14 pounds. (4) Test breakaway torque to 10 pounds b Certification Test. (1) High altitude chamber test, Brooks Air Force Base (a) Manned testing series 1 Gradual ascent/descent to 39,000 feet 2 Denitrogenation verification for function as an extravehicular activity (EVA) prebreath device

ATTACHMENT - II
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PREPARED BY: *W. T. ALLISON* SUPERSEDING DATE: APPROVED BY: *J. D. SCHLOSSER* DATE:

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: *NECK RING DISCONNECT ASSY.* SYSTEM *CREW ESCAPE SYSTEM* REVISION:

ASSY P/N: *10040-07* SUBSYSTEM: *HELMET RETENTION ASSEMBLY* PAGE 50 OF 60

FMEA REF	FMEA REV	NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
4.2.2		NECK RING DISCONNECT ASSEMBLY (1), SKD13101506-301	1/1	4.2.2 Mode: Jammed neck ring Cause: • defective material • overstress	Cannot lock helmet or maintain suit pressure	Turnaround Testing. (In accordance with PIA 23037) a. Functional test lock to ensure proper operation. b. Rotate locking ring, inner race and outer race 3. INSPECTION a. Manufacturing Inspection (1) One hundred percent inspection during assembly of neck ring. (2) Visually inspect inner and outer race, static seal, and lip seal for burrs, defects, and nicks (3) Verify seals are properly seated. (4) Verify all latch fits are free moving (5) Verify locking ring does not stick or bind when pulled from three different positions (6) Verify torque values are within tolerance b. Turnaround Inspection (In accordance with PIA 23037) (1) Visually inspect inner and outer race, static seal, and lip seal for burrs, defects, and nicks (2) Verify seals are properly seated (4) Verify all latch fits are free moving

PREPARED BY: *R. L. ALLISON* SUPERSEDING DATE APPROVED BY *J. D. SCHLOSSER* DATE

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: *NECK RING DISCONNECT ASSY.* SYSTEM *CREW ESCAPE SYSTEM* REVISION:

ASSY P/N: *10040-01* SUBSYSTEM: *HELMET RETENTION ASSEMBLY*

FMEA REF	FMEA REV	NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
4.2.2		NECK RING DISCONNECT ASSEMBLY (1). SKD13101506-301	1/1	4.2.2 Mode: Jammed neck ring Cause: • defective material • overstress	Cannot lock helmet or maintain suit pressure	(4) Verify locking ring does not stick or bind when pulled from three different positions (5) Verify torque values are within tolerance 4. FAILURE HISTORY None. This neck ring is used by the Air Force in high altitude suits for high performance aircraft and Dryden Flight Research Center. 5. OPERATIONAL USE a. Operational Effect of Failure - Possible loss of crewmember. b. Crew Action - None. c. Crew Training - Crew is trained in the proper use of the equipment. d. Mission Constraints - None. Mission would be terminated prior to emergency use of this equipment. Another HRA/Helmet could be used for EVA prebreath for mission success. e. In-Flight Checkout - None. Crew could not repair or replace a defective neck ring under emergency condition.

PREPARED BY: *R. L. ALLISON* SUPERSEDING DATE: APPROVED BY *L.O. SCHLOSSER* DATE:

CEE/ HEA-5