

CRITICAL ITEMS LIST

ASSY NOMENCLATURE: CAM FOLLOWER BAILER BAR

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 18961G-01

SUBSYSTEM: LAUNCH ENTRY SUIT

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON	RATIONALE FOR ACCEPTANCE
REF	REV				END ITEM	
1.4.1		CAM FOLLOWER BAILER BAR AND LOCK MECHANISM (1), 18959G-03	2/1R	<p>1.4.1 Mode: Visor locking latch fails</p> <p>Cause:</p> <ul style="list-style-type: none"> • double hook on latch broken or bent • defective material • excessive load 	Unable to lock visor to maintain suit pressure if second hook mechanism fails	<p>1. DESIGN FEATURES TO MINIMIZE FAILURE MODE</p> <ul style="list-style-type: none"> a. Latch/pin hinge point is protected by bilock housing. b. Designed to withstand three times the operating loads. c. This was developed and is being used by the Air Force as a part of the high altitude flying outfit. <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) Helmet structural test, 5.6 ± .2 psig for 5 minutes. (2) Functional test of bailer bar and lock mechanism. b. <u>Certification.</u> <ul style="list-style-type: none"> (1) Certified by the Air Force, 500 knot wind blast test. (2) Cycle tested during Brooks Air Force Base high altitude chamber testing. (3) Live jumped at Naval Weapons Center. <ul style="list-style-type: none"> (a) At 200 knots, 25,000 feet, four jumps. (b) At 110 knots, 10,000 feet, four jumps. (c) At 110 knots, 6,000 feet, four jumps. (d) At 170 knots, 15,000 feet, four jumps. (e) At 185 knots, 20,000 feet, four jumps (f) Water drop at 30 feet per second (fps), two jumps. (g) Water drop at 27 fps, two jumps.

PREPARED BY: R. L. ALLISON

SUPERSEDING DATE:

APPROVED BY: J. O. SCHLOSSER

DATE:

CEE/LES-4

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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: CAM FOLLOWER BAILER BAR

SYSTEM: CREW ESCAPE SYSTEM

REVISION:

ASSY P/N: 18961G-01

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FMEA		NAME, QTY & DRAWING REF DESIGNATION	CRIT'Y	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE
REF	REV					
1.4.1		CAM FOLLOWER BAILER BAR AND LOCK MECHANISM (1), 18959G-03	2/1R	<p>1.4.1 Mode: Visor locking latch fails</p> <p>Cause:</p> <ul style="list-style-type: none"> ● double hook on latch broken or bent ● defective material ● excessive load 	Unable to lock visor to maintain suit pressure if second hook mechanism fails	<p>c. <u>Turnaround Test</u>. (In accordance with PIA 23033)</p> <p>(1) Helmet structural test, 5.6 \pm .2 psig for 5 minutes.</p> <p>(2) Functional test of bailer bar and lock mechanism.</p> <p>3. INSPECTION</p> <p>a. One hundred percent visual in-line inspection during assembly to verify conformance with drawings.</p> <p>b. Visual inspection of up-lock after installation.</p> <p>c. Visual inspection of shroud covers after installation.</p> <p>d. Visual inspection of inner cams after installation.</p> <p>e. Visual inspection of latch after installation.</p> <p>f. Verify smooth operation of cam follower bailer bar.</p> <p>g. Verify lock mechanism will latch.</p> <p>h. Verify lock mechanism remains latched during helmet structural test.</p> <p><u>Turnaround Inspection</u>. (In accordance with PIA 23033)</p> <p>a. Verify smooth operation of cam follower bailer bar.</p> <p>b. Verify lock mechanism will latch.</p> <p>c. Verify lock mechanism remains latched during helmet structural test.</p>

PREPARED BY: R. L. ALLISON

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CEE/LES-5

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 ATTACHMENT - II
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CRITICAL ITEMS LIST

ASSY NOMENCLATURE: **CAM FOLLOWER BAILER BAR**

SYSTEM: **CREW ESCAPE SYSTEM**

REVISION:

ASSY P/N: **18961G-01**

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
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1.4.1		CAM FOLLOWER BAILER BAR AND LOCK MECHANISM (1), 18959G-03	2/1R	<p>1.4.1 Mode: Visor locking latch fails</p> <p>Cause:</p> <ul style="list-style-type: none"> ● double hook on latch broken or bent ● defective material ● excessive load 	Unable to lock visor to maintain suit pressure if second hook mechanism fails	<p>4. FAILURE HISTORY</p> <p>None. This helmet 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> <ol style="list-style-type: none"> a. Operational Effect of Failure - Possible loss of crewmember if both locks fail to latch. b. Crew Action - None. c. Crew Training - Crew is trained in proper use of LES helmet. d. Mission Constraints - None. Mission would be terminated prior to emergency use of this equipment. e. In-Flight Checkout - None. Crew could inspect latches, but could not repair or replace defective hardware

PREPARED BY: **R. L. ALLISON**

SUPERSEDING DATE:

APPROVED BY: **J. O. SCHLOSSER**

DATE:

CEE/LES-6

S402100
 ATTACHMENT - II
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