

CIL
CRITICAL ITEMS LIST
FILE: CIL5/1

NAME P/N QTY	CNTY	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
AIRLOCK ADAPTER PLATE ITEM 470 SV767680- 03-00 121 FC254-1	2/2	470FND11 AAP/AIRLOCK MALL SUPPORT BRACKET FRACTURES. CAUSE: BRACKET OVERSTRESS OF FATIGUE.	END ITEM: SEPARATION OF ONE AAP/AIRLOCK MALL MOUNTING BRACKET. CFE INTERFACE: THE EMI AND AAP DETACHES FROM THE AIRLOCK MALL AND MAY IMPACT THE AIRLOCK STRUCTURE OR OTHER AIRLOCK EQUIPMENT. MISSION: POSSIBLE LOSS OF ONE EMI. CREW/VEHICLE: NONE.	A. DESIGN - THE AAP FRAME IS RETAINED ON THE VEHICLE AIRLOCK MALL BY A THREE POINT SUPPORT SYSTEM. THE AIRLOCK ADAPTER PLATE FRAME IS FABRICATE OF 6061-T6 ALUMINUM, AND ALL WELDS ARE FULLY HEAT TREATED. BRACKETS WELDED TO THE FRAME REACT THE LOADS APPLIED TO THE SUPPORTS. ANALYSIS OF THE STRESSES AND LOADS ON THE ADAPTER PLATE SUBJECTED TO A WORST CASE LOADING OF 4.0G G'S ACCELERATION INDICATES THE WELDED BRACKET HAS A FACTOR OF SAFETY OF 3.00 VS. YIELD STRESS. THE FACTOR OF SAFETY COMPARED ULTIMATE STRESS IS 2.26. CALCULATIONS ARE BASED ON A MINIMUM S/WO HEIGHT REQUIREMENT OF 240.17 LBS. SHOULD ANY MOUNT FAIL, HOWEVER, THE REMAINING MOUNTS DO NO HAVE THE MOMENT CAPABILITY TO SECURE THE AIRLOCK ADAPTER AND ITS CONTENTS TO THE AIRLOCK MALL DURING LAUNCH. B. TEST - COMPONENT ACCEPTANCE: NONE. PDA: NONE. CERTIFICATION: THE ITEM COMPLETED HAS COMPLETED THE 15 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENT DURING 18/81.

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AIRLOCK ADAPTER PLATE ITEM 470 SV747480- 85-00 (2)	2/2	470FM02: AAP/AIRLOCK MILL SUPPORT BRACKET FRACTURES.		<p>C. INSPECTION - ALL DETAIL PARTS OF THE AAP ARE 100% INSPECTED FOR DIMENSIONAL AND SURFACE FINISH REQUIREMENTS. ALL DIMENSIONS ON THE AAP ASSEMBLY WHICH INTERFACE WITH THE VEHICLE ARE 100% INSPECTED DURING PMA. INSTALLATION OF ADAPTER TO MALL IS DONE AND VISUALLY VERIFIED DURING ACTUAL VEHICLE INSTALLATION. THE AAP IS RADIOGRAPHIC AND FLOURESCENT PENETRANT INSPECTED TO DETECT ANY SUBSURFACE OR SURFACE DEFECTS IN THE WELD.</p> <p>D. FAILURE HISTORY - NONE.</p> <p>E. GROUND PURNAROUND - TESTED PER FEMU-N-001, END TO ORBITER CHECKOUT.</p> <p>F. OPERATIONAL USE - CREW RESPONSE - LAUNCH AND REENTRY: NONE POSSIBLE. TRAINING - AD TRAINING COVERS THIS FAILURE MODE. OPERATIONAL CONSIDERATIONS - NOT APPLICABLE.</p>
FC254-2				