NOV 1 2 1992

Critical Item: UPPER HINGE ACTUATOR (2 Items Total)

Find Number: A101349

Criticality Category: 1S

SAA No:	09VE14-001	**System/Area:**	ORBITER ACCESS ARM / LC-39 PAD A&B
NASA Part No:	75M12560	**PMN/ Name:**	U70-0503 ORBITER ACCESS ARM
Mfg/ Part No:	FLOTORK NONE	**Drawing/ Sheet No:**	79K06013 . 79K40015 1

Function: Extends and retracts the Orbiter Access Arm. Upper actuator assembly (A101349) is redundant with Lower Actuator Assembly (A101364).

Critical Failure Mode/Failure Mode No: Fails to actuate / 09VE14-001.001

Failure Cause: Seizes, severe leakage.

Failure Effect: Arm cannot be extended or may exceed the 30 second maximum allowable time due to mechanical seizure or severe leakage. Possible loss of life.

ACCEPTANCE RATIONALE

Design:

- Four (4) piston actuators coupled to the hinge post weldment act in a redundant manner.
- Seal design (square cross-section) minimizes tendency to roll and .035" piston land clearance reduces possibility of seal causing seizure.
- Combination of bronze liner and steel piston extremely reliable with respect to seizure.

Test:

- Emergency Extend and Retract test is performed prior to each launch, File VI OMRSD requirement.

Inspection:

- Actuator inspected for external leakage annually per OMI V6C50.

Failure History.

- The PRACA database was researched and no failure data was found on this component in the critical failure mode.

Attachment S050234A6
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- The GIDEP failure data interchange system was researched and no failure data was found on this component in the critical failure mode.

Operational Use:

- Correcting Action:

  There is no action which can be taken to mitigate the failure effect.

- Timeframe:

  Since no correcting action is available, timeframe does not apply.