

SAA09FY091-004
B/L: 380.00
SYS: OUTBOARD ELEVON
ACTUATOR JIB
CRANE (HOIST)

NOV 20 1995

Critical Item: Hoist Assembly (2)
Find Number: NA
Criticality Category: 2

<u>SAA No:</u>	09FY091-004	<u>System/Area:</u>	Outboard Elevon Actuator Jib Cranes (Hoist)/OPF HB2 Platform 11E and W
<u>NASA Part No:</u>	NA	<u>PMN/ Name:</u>	H70-1378 Outboard Elevon Actuator Jib Crane (Hoist)
<u>Mfg/ Part No:</u>	Yale Eaton LTP, (825-05400)	<u>Drawing/ Sheet No:</u>	79K16117/107, 108, 109, 110

Function:

- o The Yale LTP One Ton hoist is used to lower elevon actuator into attaching position, support testing of elevons, and to raise the elevon actuator up and out of the elevon working area.

Critical Failure Mode:

- o Gearbox failure due to the loss of mechanical linkage between gearbox components. [FM No. 09FY091-004.003]
- o Brake failure due to the loss of mechanical linkage between brake assembly and gearbox. [FM No. 09FY091-004.004]

Failure Cause: Component structural failure.

Failure Effect:

- o Load will drop damaging flight hardware.

Acceptance Rationale

Design:

- o The hoist is an off-the-shelf item manufactured by Yale Eaton and is designed to handle a one ton working load with a minimum safety factor of 4:1. Refer to operational use paragraph for a revised load rating and safety factor.

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Hoist Assembly (Continued)

Design:

- o The Yale Eaton hoist design is in accordance with Hoist Manufacturers Institute standard (HMI 200 class II).

Test:

- o OMRS File VI requires the annual performance of a rated load test.
- o The hoist is tested per KSC-STD-SF-0001 including:
 1. Annual and Initial Proof Load Tests (125%)
 2. Hook Throat Dimensions and NDI if required

Inspection:

- o The hoist is inspected per KSC-STD-SF-0001 for the following:
 1. An Active Validation Tag
 2. Current Load Test Tag
 3. A Maintenance Inspection
- o PMOMI V6C46 require hoist inspection (visual and magnetic particle or dye penetrant) following annual load test.

Failure History:

- o No failure history for this hoist.

Operational Use:

- o The Outboard Elevon Actuator Jib Crane (Hoist) is used to support a contingency type operation involving the changeout of elevon actuators.
- o When used to perform its dedicated task the Outboard Elevon Jib Crane (Hoist) will raise and lower approximately 200 pounds. The actuator lifting sling (H70-0550) weighs approximately 10 pounds and the Type II outboard elevon actuator weighs 190 pounds.
- o PRs H70-1378-02-003-0001 and H70-1378-02-002-0002 have been generated to identify each hoist being rated at 4:1 safety factor with SFPs and that the hoist rated load capacity should be downgraded to 1000 pounds with an effective safety factor of 8:1.