B/L: 252.00
SYS: 650 LB. TIE DOWN JIB BOOM HOIST

MAY 19 1992

Critical Item: Control Switch (1 Item Total)

Find Number: None

Criticality Category: 2

SAA No:	09FTAB3-004	**System/Area:**	Pads A & B Payload Changeout Room
NASA Part No:	None	**PMN/ Name:**	H70-1210 650 lb. Tie Down Jib Boom Hoist
Mfg/ Part No:	Thern/SB2501 Pendant Control Assembly	**Drawing/ Sheet No:**	None

Function: Turns hoist motor on and off. Changes direction of motor for up and down movement of load.

Critical Failure Mode/Failure Mode No:

1) Switch fails closed in up direction / 09FTAB3-004.002
2) Switch fails closed in down direction / 09FTAB3-004.003

Failure Cause: Welded Contacts

Failure Effect:

1) Load may impact flight hardware depending on the relative position of the load to other hardware causing possible loss (damage) of a vehicle system. Detection Method : Visual. Time to effect : Seconds.
2) Load may impact flight hardware depending on the relative position of the load to other hardware causing possible loss (damage) of a vehicle system. Detection Method : Visual. Time to effect : Seconds.

Attachment S050231AM
Sheet 12 of 14

MAY 1 9 1992

ACCEPTANCE RATIONALE

Design:

- Control Switch is designed in accordance with the National Electrical Manufactures Association (NEMA) IV requirements.
- Switch is rated 115 V, 14 amps continuous (42 amps intermittent). The motor (115 V) that the switch energizes has a current draw of 13 amps continuous (40 amps intermittent).
- Switch is sealed preventing contamination from entering switch control. Hoist can be used indoors or outdoors.

Test:

- Preoperational setup (attaching wire rope to load) verifies proper operation of the control switch.
- OMRSD File VI requires verification of a load test within the last year prior to critical lifts. A load test also verifies control switch operation.

Inspection:

- An inspection of the hoist to check the switch case for cracks will be required and performed through a Test Preparation Sheet if it has been over a year since the last inspection. Also, any looseness in the switch can be noticed by the operator during operation setup.

Failure History:

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

  The use of the E-Stop is effective in mitigating these failures if there is sufficient time/distance for the operator to react.

- Timeframe:

  Seconds

Attachment S050234BM
Sheet 13 of 14