

SAA09FTP3-024

5050234HD
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Critical Item: Load leveler
Total Quantity: 3
Find Number: None
Criticality Category: 2

SAA No: 09FTP3-024

System/Area: Thompson Rail Translation
System/OPF-1,2,3

**NASA
Part No:** None

**PMN/
Name:** K61-4107/
Load Leveler

**Mfg/
Part No:** Blackhawk Inc., Mil. Wis., Divi-
sion of Applied Power Inc./
67042

**Drawing/
Sheet No:** None/
NA

Function: Provide mechanical advantage to offset, level or support the load.

Critical Failure Mode/Failure Mode No: Gearbox failure/09FTP3-024.003

Failure Cause: Worn or broken gear teeth.

Failure Effect: Load will drop without means of control resulting in possible loss (damage) of a vehicle system. The gearbox failure is detectable by abnormal noises and movements. Detection method: Visual. Time to effect: Immediate.

ACCEPTANCE RATIONALE

Design:

- The worm gear is self locking, designed to hold the rated load.
- Worm gear hoist has a manufacturers rated capacity of 4000 lbs.
- These hoists are subjected to a low number of cycles compared to commercial use. This diminished usage should provide for better long term reliability.
- Per NSS/GO-1740.9, manual hoists shall have at least one brake. Worm gears can be used as a brake if the lead angle is sufficient to prevent back driving. The load levelers meet this requirement.

Test:

- OMRSD File VI requires verification, prior to critical lifts, that a rated load test has been performed within the preceding 12 months.
- Braking mechanisms are tested for evidence of slippage during the rated load test.

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Inspection:

- The hoist is inspected for an active or current load test validation tag which will be legible along with any warning plates prior to operation.
- Visual inspections are completed before use.
 - a. An inspection of the load bearing parts (suspension bolts, shafts, bearings, support structure) for wear, cracks, and distortions without disassembly of the hoist.
 - b. Inspections of chain wear (twists, damage links, foreign matters) hook deformations, corrosion, and damage inspections.

Failure History:

- Current data on test failures, unexplained anomalies, and other failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no failure data was found on this component in the critical failure mode.
- The GIDEP failure data interchange 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.