

SAAFL000000-001

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Critical Item: Swing Assembly
 Total Quantity: 1
 Find Number: NONE
 Criticality Category: 2

SAA No: FL000000-001

System/Area: 300 Ton Mobile Crane/KSC

NASA

PMN/ K51-3619/

Part No: None

Name: 300 Ton Mobile Crane

Mfg/ P&H/

Drawing/ VEN-2244/

Part No: 910N483-1

Sheet No: 7A-2

Function: Set of four input shafts (Intermediate, First, Second, Swing), Slewing ring and bevel pinions transmitting torque from the Jackshaft to rotate the upper carrier.

Critical Failure Mode/Failure Mode No: Gear disengagement/FL000000-001.001

Failure Cause: Damaged or broken gear teeth.

Failure Effect: Machine may swing when the controller is positioned in neutral. Flight hardware suspended from the hook may be damaged if it impacts another object. Detection method: Audible, loss of control. Time to effect: Seconds.

ACCEPTANCE RATIONALE

Design:

- The Swing Assembly is an off the shelf item designed in accordance with AGMA and CMAA standards.
- The gears are splined to the shafts and are retained in place by shoulders within the confines of the gearcase.

Test:

- In accordance with NASA safety standard for lifting devices and equipment, NSS/GO-1740.9, mobile cranes shall be load tested and operationally tested within 12 months prior to performing a critical lift. The mobile crane will be load tested with a load at the minimum radius in accordance with the manufacturer's load chart. The swing function will be operationally verified during this test.
- Ferrography is performed on the swing assembly oil annually.
- OMRSD File VI requires performance of an annual operational test.

Inspection:

- Per OMI Q3205 the following inspections are performed:

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- Inspect and lubricate the slewing ring gear on a monthly basis.
- Inspect swing brake lining for wear and check swing brake on a semi-annual basis.
- Perform outer slewing ring bolt torque check on a semi-annual basis.
- Replace swing assembly oil on a biennial basis.
- Pre operational checks are performed per the Mobile Equipment Checklist, Form KSC-28-526.
- Before critical lifts, pre operational checks are performed per the Checklist For Critical Lifts, Form KSC 28-527.

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