

SEP 11 1999

B/L: 323.60

SYS: Simon MPH-62
Self Propelled
Aerial Platform

Critical Item: Swing Reducer (3 Items Total)
Find Number: None
Criticality Category: 2

SAA No:	09FY02-016	System/Area:	Simon MPH 62/ OPF,VAB,RPSF
NASA Part No:	None	PMN/Name:	K60-1037-01 Simon MPH 62
Mfg/Part No:	Simon Aerials 02-006100	Drawing/Sheet No:	SDS-218469-0 1

Function: Rotates the turret. Planet gear powered by hydraulic motor that rotates the turret gear.

Critical Failure Mode/Failure Mode No: Gear disengagement/09FY02-016.002

Failure Cause: Broken gear teeth, cracked gear case.

Failure Effect: Possible for the turret to continue to swing. The platform may impact flight hardware causing loss (damage) to a vehicle system. **Detection Method:** Visual. **Time To Effect:** Seconds.

ACCEPTANCE RATIONALE

Design:

- The internal gears are designed to AGMA class 6. The external gear is designed to AGMA class 5.
- The input gear and planet gears are made from AISI 8620 and carburized to Rc 58-62. The housing is AISI 4140 heat treated to Rc 29-33. The output shaft is AISI 4140 heat treated to Rc 40-45.
- Each input and output gear and shaft are manufactured as one piece.

Test:

- Operational check of the boom retraction and extension is performed before use per "Pre-Operations Maintenance Mobile Equipment Checklist" KSC Form 28-528 or "Startup Procedures" as outlined in the Vendor's Operator's Manual.
- OMRS File VI requires annual performance of an operational test.

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Inspection.

- Inspection of the hydraulic system and controls for leaks and integrity is performed before use per "Pre-Operations Maintenance Mobile Equipment Checklist" KSC Form 28-528 or "Startup Procedures" as outlined in the Vendors Operator's Manual.

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:

The operator may mitigate the failure by raising the basket with the controller.

- Timeframe:

Seconds

Attachment
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