

28/11/03 MB Equip Damage C3A C4P

WPH-07: While POH with 3½" DP string (hook load: 22 t), the driller applied the brakes to set the string in the slips. The brake linkage to the drawworks broke and driller lost control over the brakes. This resulted in the uncontrolled descent of the string with the travelling block hitting the rig floor. The string was suspended by the elevator and the slips.

SUMMARY OF INVESTIGATION FINDINGS

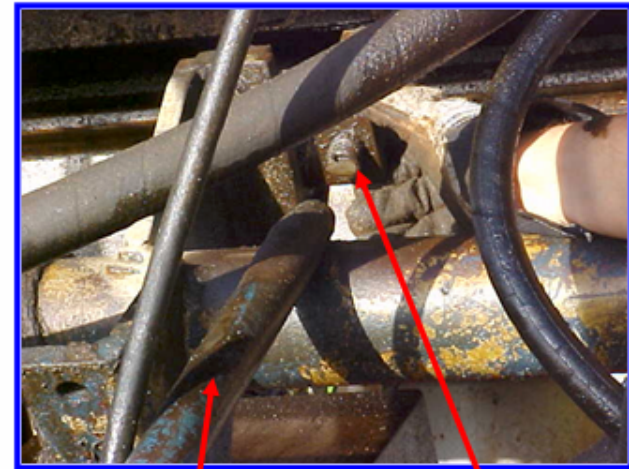
- 1/ Maintenance, Inspection Policies and Guidelines in place and appear adequate.
- 2/ A 6-monthly inspection was done about 2 weeks earlier. It is unlikely the failed part was inspected then.
- 3/ Supervision of the inspection process was ineffective and needs strengthening.
- 4/ Emergency brakes were not installed on the hoist. Hoist manufacturer does not install this as standard.
- 5/ The driller tried to slow the traveling block down with the clutch but this was ineffective.

LEARNINGS:

- 1/ The failure of the brake linkage occurred because a threaded connection was welded in position. See slide 3 for scenarios, **ANY THREADED CONNECTION SHOULD NOT BE WELDED WHETHER ITS TO LOCK OR SEAL THE CONNECTION**
- 2/ Do not assume 3rd Party inspectors know your inspection guidelines. Instruct and supervise inspectors.
- 3/ Make drawworks emergency brakes mandatory. Some rig manufacturers do not provide this as a standard item.

ACTIONS:

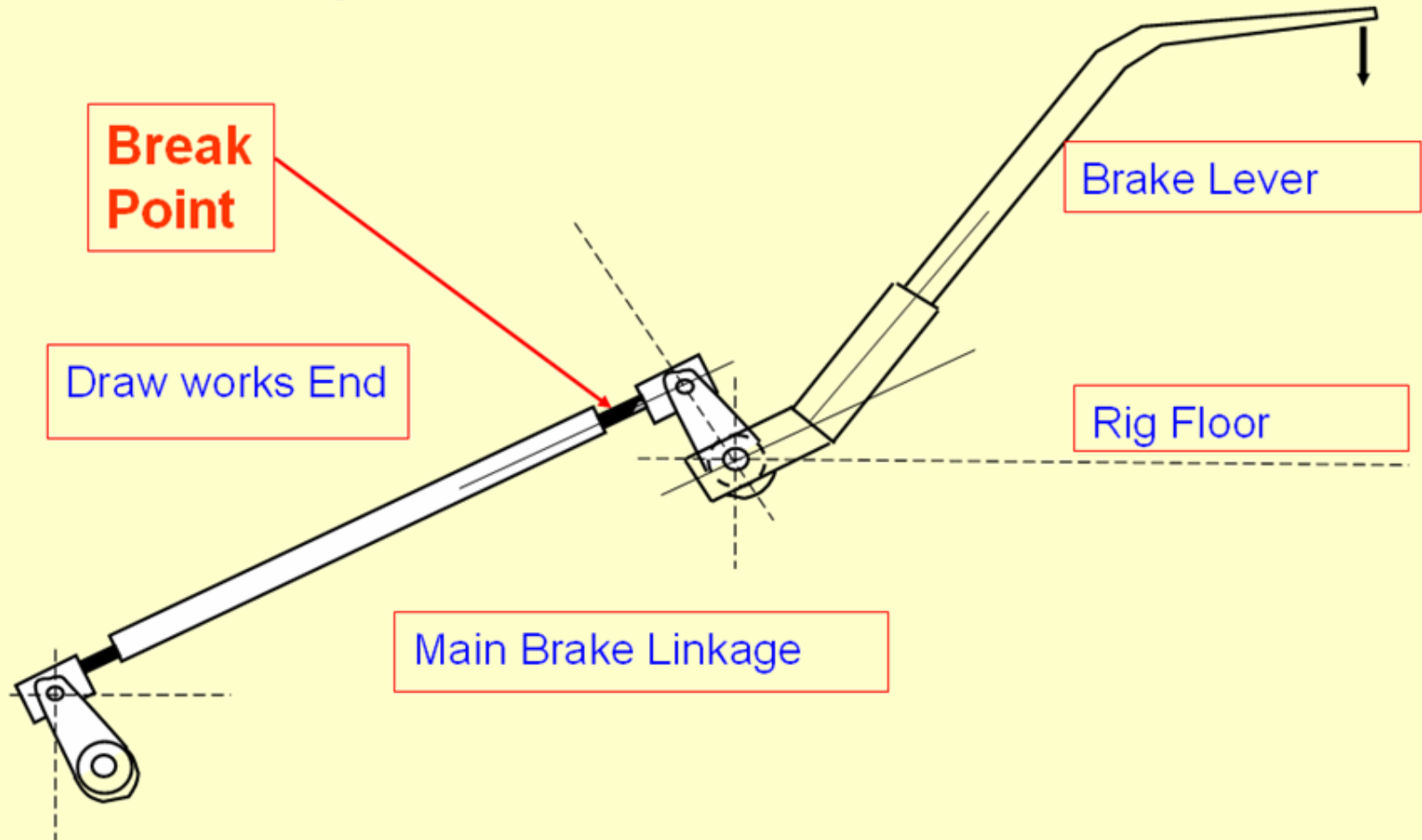
- 1/ Install Emergency Brakes on all hoists and rigs
- 2/ Issue instructions to inspect hoists at a Nimir Yard (better inspection facilities)
- 3/ Agree clear inspection guidelines with Drilco, digital photos of the inspection areas will be attached to the inspection reports
- 4/ Write procedure's for brake adjustments



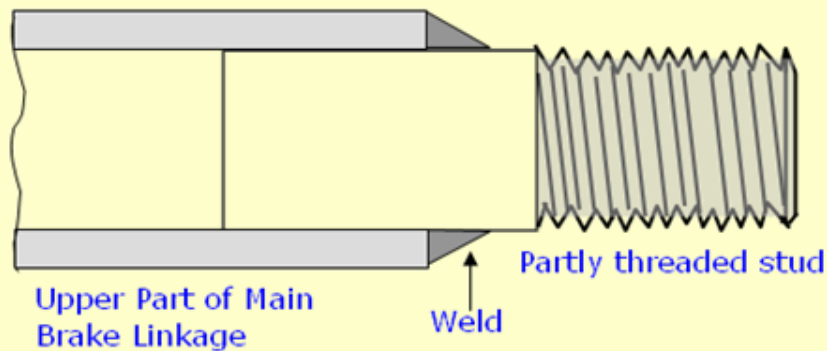
Brake Linkage

Break Point

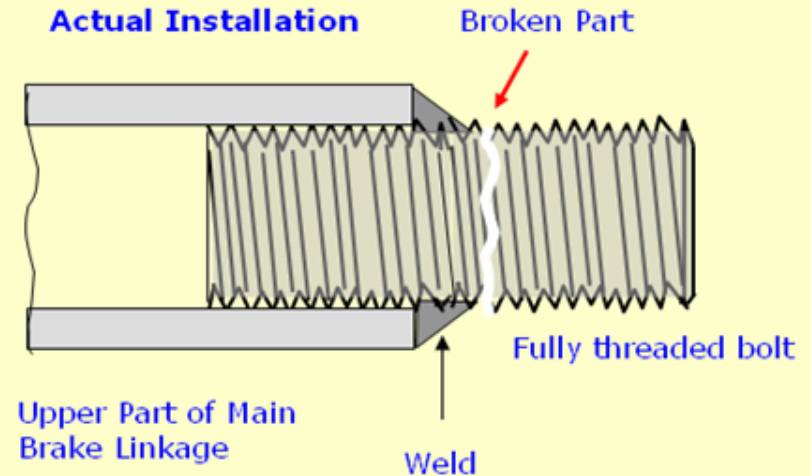
Brake Linkage Schematic



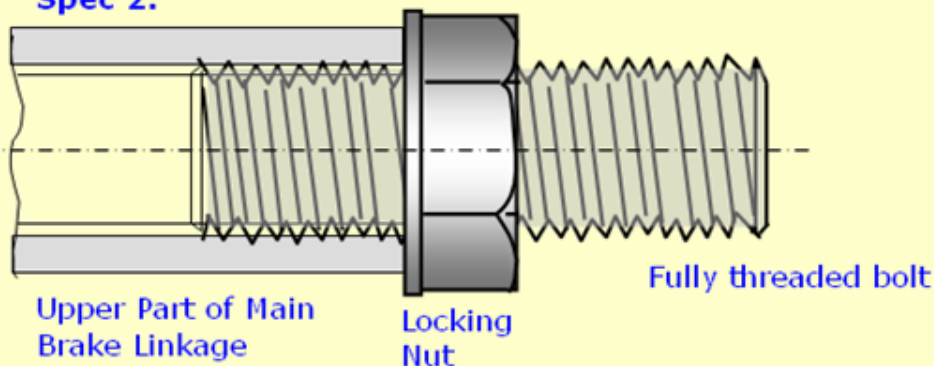
Manufacturer's Spec 1



Actual Installation



Manufacturer's Spec 2.



In this incident the brake linkage had been welded on threaded stud bar. The practice of welding on threads is not a recommended practice as it leads to a stress riser at the root of the weld and thread groove root.