

Arm Trapped in Felling Head during Repair

A machine operator's arm become trapped between the felling head's superstructure and the ram that controls the grapple fines. The accident occurred during a repair task. The injured worker was airlifted to hospital where he received treatment for compression injuries.



Description:

A small pin hole leak had been identified on a Waratah FL95 felling head ram responsible for the opening and closing the grapple. The machine was parked up for repair and a service provider called in to carry out the welding needed.

Prior to the repair there was some discussion then agreement between the operator and service agent on the best way to approach the task.

To repair (weld) the crack, hydraulic oil had to be removed from the ram. This required the hose connection to the ram valve bank to be released. The operator put his arm through a narrow gap at the grapple hinge point to loosen the connection. This released some but not all of the pressure and as the welding proceeded the ram began to weep oil. The repair was stopped and the operator put his arm back through the gap and released the residual pressure by undoing the connection fully. This caused the grapple to open (creep) and trap his arm between the super structure and grapple ram. There may have also been some movement in the boom that contributed to the head's movement.

Compression on his arm involved approximately 25mm of closure movement and it took approximately 20 minutes to free him.

Ensuring accident free Repair & Maintenance

Contributing causes:

- The crew's Job Safety Analysis (JSA) for R&M wasn't followed. If it had, a different process would have been used (ie: Position the felling head in a safe and stable position before removing the valve bank cover and releasing any stored pressure. Then move the felling head to a suitable work position for the welding) – in other words the machine had been positioned to best suit the weld, not the hose removal
- The recommended isolation and tag out procedure was not followed (the harvester was isolated but not tagged out - the tag was in the harvester).
- The most experienced member of the crew was working on another machine at the time of the incident. He had been involved in the earlier induction of the service agent onto the site but not directly overseeing the repair, as he normally would.
- Despite good production, prior breakdowns may have put perceived pressure on operator
- During the hose removal the machine's boom may have crept forward. This may have contributed to the rolling of the felling head and movement of the grapple arm.

Preventative Measures:

- Always ensure those carrying out the task are familiar with and follow established safe practices for the repair or maintenance task at hand (includes crew procedures and the manufacturer's maintenance manuals).
- If there is insufficient guidance, ensure a risk assessment is carried out.
- High risk work must be adequately supervised, where skill or experience is still being developed.
- Where two or more people are undertaking an R&M task, agree on who is in charge.
- Ensure the boom is stable.



Communicate with all involved the change to work plan, ensure all are aware of their responsibilities

Discuss the Hazards and the potential Risk to all involved in the task

What are the alternatives? Have you considered all options? Are you using the correct tools safely?

All those involved help implement and document the plan, signing off in agreement

Ensure all those assisting in the task have the correct skills, knowledge and training