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OBJECT: ROLLOVER OF A SIDEBOOM ON A SLOPE

DESCRIPTION

During the transportation of a pipe with a sideboom, moving upside a slope ("American" type), the operator raises the arm of the equipment causing an imbalance. The sideboom, finding not compacted ground, begins to skid and sink the rear part of the tracks, and it starts to rear up the front part.

The operator tries to correct the stability of the machine by lowering the load, but at that moment, the machine rears up in its front part going outside the right of way, rolling over backwards, falling from approximately 4 meters. The Sidebooms then stops in an upright position and with the pipe still joined. The operator jumps from the sideboom as it overturns.



Moment in which the sideboom rolls over



Trajectory from the slope



Point where the sideboom starts to rollover

CONSEQUENCES

- ✓ Activity stopped immediately;
- ✓ Operator transferred to the nearest hospital to evaluate the blows and the abrasions due to the fall from the sideboom;
- ✓ Substantial asset damage to the sideboom and to the pipe.

CAUSES

- ✓ Inadequate technical skills: lack of execution of best practices for pipe handling and lifting with sideboom on slopes;
- ✓ Improper lifting: pipe handling for transport on slopes was not correct;
 - The pipe was not tilted;
 - The counterweight of the sideboom was not fully open;
- ✓ Presence of the american RoW: narrow transitable part of the RoW and presence of not compacted material.

CORRECTIVE ACTIONS

Measures adopted in order to prevent the recurrence of a similar incident:

Operational instructions:

- ✓ Before facing any slopes with heavy machine, RoW inspections must be performed to verify the absence of loose stones;
- ✓ After measuring degrees of all slopes in the Right of Way, install signage for authorized heavy equipment on all slopes;
- ✓ Verify that all operators involved in operations on slopes are evaluated internally by a person skilled in heavy machinery operations or by a third party;
- ✓ Sidebooms that transport pipes on slopes must maintain the counterweight open and the pipe must be tilted to prevent the bevel to have contact with the ground;
- ✓ Damaged pipe to be segregated.

Training:

- ✓ Specific training for all personnel involved in slinging operations, making sure that dangers and controls have been fully understood;
- ✓ Specific training for sideboom operators regarding the risks of pipe transport, pipe lifting and pipe handling on slopes;
- ✓ Re-induction and re-sensitization campaign to all heavy equipment operators on the importance of using the seat belt.