IMPORTANT INFORMATION FOR THE FOREST WORKERS AND EMPLOYERS OF BRITISH COLUMBIA

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Safety Alert of the MONTH

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PLEASE PASS THIS ON TO PEOPLE AND ORGANIZATIONS IN BC'S FOREST INDUSTRY

Hazards and Risk: Mobile Equipment Escape Hatches

A number of recent reports highlight the risk of incidents involving mobile equipment upsets or "flop-overs." In some cases, what might have seemed relatively minor events turned serious when equipment operators couldn't get out of their machine to safety.

Most pieces of mobile equipment have at least two ways to get out of the cab when there is an emergency – the main door to the cab and a secondary escape hatch, often on the roof. But what happens when the both the main door and the escape hatch don't work as intended?

In just over a year, two equipment operators have died when they were unable to get out of the cab after a machine upset. In 2009, a worker died when the machine he was unloading from a barge fell into the water. The impact twisted the loader's cab so that both doors were inoperable and the operator could not escape from his submerged machine. In another incident, a buncher operator died when his machine tipped over and caught fire. With the main door on the ground and the roof escape hatch blocked, the worker was trapped in the cab. A very similar close call incident occurred a few weeks previous to that when a machine tipped and the roof hatch was blocked by a stump. Hydraulic fluid leaked on the engine and started to smoke. Co-workers stood by with fire extinguishers as they cleared the roof hatch to allow the operator to safely crawl out, over an hour after the upset occurred.

Other equipment operators have had close calls when they broke through frozen bogs or slipped off roads they were building; and their doors and hatches were blocked or otherwise inoperable.

Using the **RADAR** approach, contractors and operators can take action to prevent similar incidents.

Step One: Recognize the Risk

- With so many reported incidents, this is clearly a potential risk for any mechanical operation. Get equipment operators and supervisors together at a safety meeting to discuss the issue.
- Do your pre-work orientations and hazard checklists include information on hazards related to equipment roll-overs? High stumps or slash, bogs, boulders, standing water, deep snow, steep slopes, etc. can all block escape hatches, or create additional risk to equipment operators.
- Look for the "Upset Condition," that time when things stop going as planned. Maybe the ground is softer than anticipated, or the slope isn't as stable as expected. If your site plan doesn't cover the potential hazards, the upset condition is much more likely to cause an incident.

Step Two: Assess the Situation

- Verify that all existing cab exits are fully functional. Bent or damaged hatches, corrosion, rotten rubber seals, over tight bolts, or even heavy repainting can make escape hatches difficult or impossible to open. Check that the external cab protection (FOPS / ROPS) doesn't block the hatch, or make it difficult to access and open. Pay extra attention to older machines where damage could have occurred or other modifications been made.
- Vandal locks are OK, but they must be removed from escape hatches before operation begins.

- Equipment operators should inspect the function of all doors and escape hatches before each shift and clean any accumulated debris from the hatch area. Contractors may want to document these inspections on time cards or other record keeping systems.

Step Three: Develop a Safe Solution

- Make sure you have the right design for your equipment: some contractors have added a third escape hatch into their machines to address the risk to their operators. This can be a good idea, but if you change the design or structure of the machine's cab or rollover protection, or the guarding, you will need a professional engineer's approval for those alterations.

- When purchasing a new machine, look for manufacturers who have designed and already include a third exit on their machines.

- Make repairs to existing escape hatches if required, and include servicing of hatch and door hinges and latches in regular scheduled equipment maintenance activities.

Step Four: Act safely to fix the problem

- As part of your company's emergency response planning, equipment operators should practice opening and exiting through their machine's emergency hatches. Note: not all large operators can squeeze through a roof escape hatch that could be as small as 2 ft. x 2 ft. square.

- When working in hazardous conditions (steep slopes, frozen muskegs, etc), have other operators working nearby that can offer assistance. Increase the frequency of man-checks.

- Check the operation of equipment fire suppression systems. Check with suppliers if you are unsure of maintenance requirements or to check effectiveness of the design when equipment is tipped over. Operators should also inspect and clean their engine compartments frequently to prevent build-up of flammable substances that could ignite in a rollover.

Step Five: Report and Record the Upset Condition

- If you have had incidents involving equipment escape hatches; what you've learned may help prevent similar incidents or injuries from occurring to others in the future.

- Report the hazard or upset condition to whoever supervises your work, whether that's a foreman, owner, licensee, or Prime Contractor. If you are a SAFE Company, there are forms you can use to record the incident and conduct an investigation. If it is something that the rest of industry should hear about and could benefit from, you should also submit a Safety Alert once you are back at the shop or office.

Additional Resources

For more information on RADAR and sample crew talks, the RADAR Resource page is located on the Council website: http://www.bcforestsafe.org/RADAR

Regulatory Information

WorkSafeBC has requirements for operator escape from the cab of mobile equipment. In summary: all equipment must have an alternate means of escape, the alternate escape must be usable regardless of the position of machine accessories or protective structures, and the escape must be able to be opened without tools from either inside or outside the cab. Check OHS Reg. 16.17 for more details.

Your first priority should always be to prevent machine upsets, but when they happen, having an easily accessible and working escape hatch can be a lifesaver.