
Accidental Excavator Activation

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Excavator and Container at the death scene after recovery of the corpse (rear view).



During Recovery the excavator was driven forward, for about 1.0m.

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We would like to report on a 33 year old male excavator operator who accidentally killed himself, when he activated the hydraulic system of his excavator, resulting in a turning of the excavator cabin, while he was trying to get hold of a broom located in the path of the excavator.

On a Saturday morning he wanted to clean up the scrap yard of his parents: Large bits of assorted scrap metal had to be divided. He used the excavator to move the metal bits into different concrete dividers, each holding more than a lorry-load of metal.

When the emergency services arrived at the scene, the excavator was positioned right next to a scrap container. The engine was running at full throttle, the hydraulic system was still activated.

In order to recover the driver the emergency services moved the excavator forward for about 1m in a right-hand turn. This final position is shown in the slide.

Front view, death scene

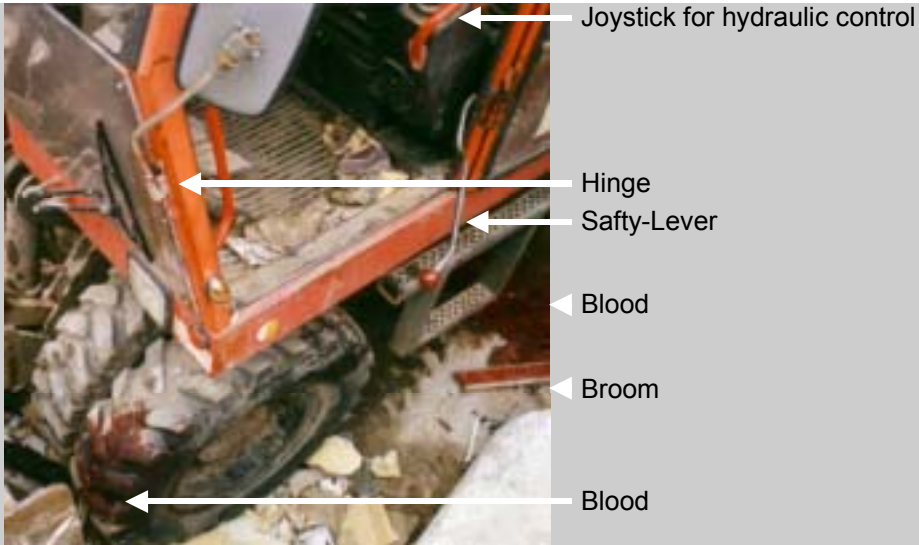


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Final position of the Excavator



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The front view is shown in the next slide: Container, concrete dividers, scrap metal.

This slide shows a detailed look into the lower portion of the left side of the drivers cabin: Base of the operator control joystick, front hinge, broom, blood on the concrete floor as well as corresponding stains on the left front wheel. Both blood stains do not correspond due to the moving of the excavator by the emergency services.

Container Side-View, Excavator Imprint



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Right palmar injury correlating to the hinge of the rear-view mirror



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The Impact of the excavator can be seen on the side of the scrap container. Its imprint is highlighted with chalk marks and these are marked with arrows in the slide. Bloodstains were found on the side of the container—just in front of the excavator cabin.

Crush marks were found on the palmar face of the right hand. The cylindrical injury could be correlated to the hinge of the left front mirror, welded to the left frontal column of the driver's cabin. A death due to a crushed skull with severe damage to the brain tissue—resulting from a blunt object—was diagnosed during autopsy.

Reconstruction



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- 1. An inspection of the death scene holds valuable clues as to the nature of the injuries.**
- 2. Injury mechanisms can best be understood by reconstruction using the same type of machinery and persons of equal built.**
- 3. The avoidability of the accident can only be assessed by combining the know-how of a technical expert:**
 1. Working condition of the machinery
 2. Modifications to the machinery**and the results of the forensic expert:**
 1. Injury description
 2. Intoxication
 3. Ultimate cause of death

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Using these pieces of information the accident could be reconstructed:

The driver was leaning outside the left door of the drivers cabin, supporting his weight by gripping to the hinge of the left front mirror, while trying to get hold of the broom with his left hand. While extending his arm out to the broom, he accidentally hit the joystick used for rotating the excavator with his thigh. During the resultant turning of the excavator his head got caught between the container wall and the frontal column of the driver's cabin. His right hand, still clinging to that hinge, got crushed when the cabin hit a rib on the wall of the container.

Safety regulations require a deactivation of the hydraulic system before leaving the driver's position. Would these regulations have been adhered to the accident would have been avoided.