

## Caught In/Between Steel Beam and Boom Lift

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In mid-2006, a welder was killed when his head was caught between a steel beam and the control panel of the boom lift he was working from. The victim had been working alone welding a steel beam from an articulated boom-supported aerial work platform. A co-worker noticed that the victim was no longer moving and shouted out his name. He remained unresponsive. Other co-workers tried to lower the boom, but the key to switch the basket controls from the basket to the ground was missing. They tried to use a forklift to push the basket down, but that only bent the basket side rail. Finally an employee used a crescent wrench to open the hydraulic lines, which released the pressure and lowered the basket. The victim was not breathing so co-workers began to administer CPR, finally driving him to the nearest hospital approximately 2 miles away. He was pronounced dead 30 minutes later. Cause of death was traumatic compression asphyxia.

It was found that the boom lift was rented, and that no detailed inspection was performed upon accepting the equipment. The equipment rental company gave a demonstration of how to operate the lift. A selector switch on the base is used to give control of the lift to either the control panel in the lift basket or the one on the base. Switching control from one panel to the other requires the use of a key, which can be removed after the selection is made. The operating manual states that the key is to be “removed and kept by a person on the site who is properly trained in emergency and rescue operations.” The employer had not read the manual and did not assign the key to an appropriate person. The manual also describes how to operate the emergency lowering system, using a hand-operated hydraulic pump on the base of the machine, in the event of a power failure or other such emergency. Employees were not trained on the use of the emergency lowering system.



The equipment was inspected and no defects were found. It is believed that the victim inadvertently depressed the lift controls and became so wedged between the steel beam and the control panel that he could not reach the controls.

The investigation further found that there were at least six (6) previous similar fatalities (Canada, England, Michigan, Oregon, California, and Georgia) since 2000 involving articulating boom aerial lifts as well as an OSHA Technical Information Bulletin, “Key Switch Controlled Elevating and Rotating Aerial Lifts”, 4/11/2002, (<http://www.osha.gov/dts/shib/tib020411.html>)

Other deficiencies found included workers not tying off to the basket when working at heights, defects in the welding cable within 4 feet of the holder, and no fire extinguisher in the basket when performing hot work.

Citations were issued totaling \$3,000.

#### Recommendations:

1. Train employees in the safe use and operation, including emergency procedures of the specific equipment to be used, e.g. the switchover key and the emergency lowering system. Never assume that all such equipment operate in the same way or have the same features.
2. Follow manufacturer’s instructions regarding inspection, maintenance, and operations, including the assignment of the switchover key to a person trained and responsible for emergency and rescue.
3. Manufacturers are encouraged to provide pressure sensor/relief valves in accordance with the International Organization for Standardization (ISO) Standard for articulated boom-supported aerial work platforms.