

Learning From Incident Alert (Houdini) #13

AREAL LIFT (BOOMLIFT/CHERRY PICKERS)



Downstream HSSE Communication - Goal Zero Incident Report/Learnings For Internal Use Only

Introduction: This fatal incident reinforces the point that although precautions and measures were in place to ensure that risks were ALARP, accidents can still happen. To achieve Goal Zero, there is more we can do, in this instance, more robust training and greater awareness of changes in work planning.

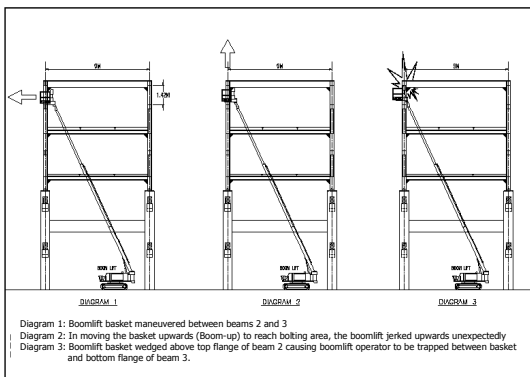
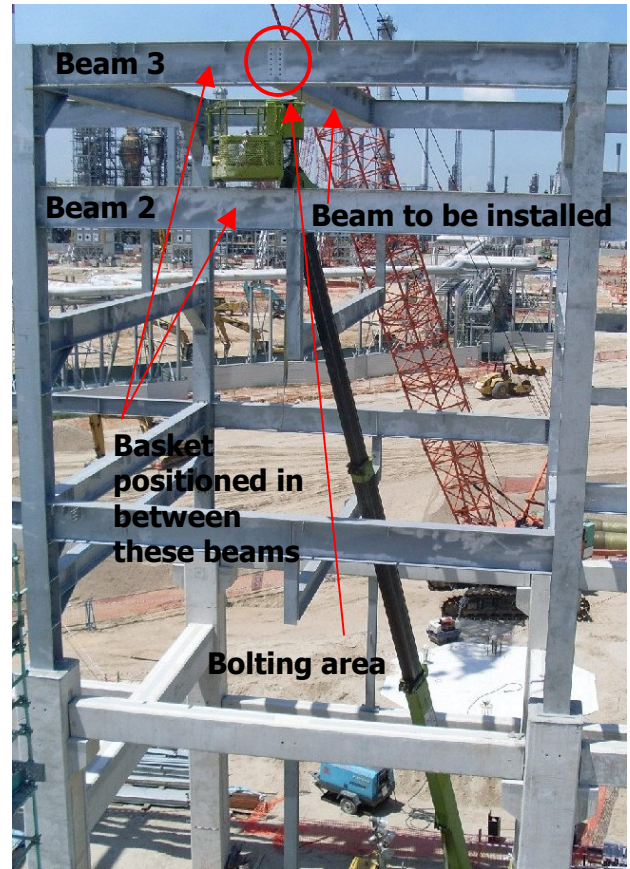
Type of Incident: Fatal incident involving installation of pipe rack beams using aerial lift (boomlift or cherry picker).

Consequences	Actual	Potential
People	4	4C
Assets	0	0
Environment	0	0
Reputation	2	2B

Brief Description of the Incident

The work involved bolting of a secondary internal beam onto a pipe rack beam structure at a height of approximately 18 meters. To perform this work, the boomlift crew maneuvered the basket in between another two existing beams. According to the witness who was also inside the boomlift basket, after maneuvering the boomlift basket in between the beams, the deceased who was operating the boomlift wanted to position the basket closer to the bolting area by moving the basket upwards.

During the process of moving upwards, the boomlift basket jerked upwards. It appeared that the jerked up motion happened too quickly for the deceased to react in a timely manner and was crushed between a steel beam and the boomlift basket control panel.



3 Main discussion points for managers:

Three key points that we can all take away from this incident and apply to our own activities:

- Ensure that training conducted to your workforce is adequate and fit for purpose to allow them to perform their work safely.
- Supervisors also need to be trained in the activity they are supervising so that they are able to execute their role effectively.
- Ensure your work crew and supervisor is able to pick-up (at site) on any changes in work planning or increased in complication to perform an activity and discuss with the appropriate parties to resolve them. Routine activities does not necessarily mean similar work method to be used. Different work method (e.g. location of other nearby structures along the path of the boomlift) may be needed to make the work safe.

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Immediate Cause

The immediate cause of the incident appeared to be due to the upper-platform-levelling-cylinder (telescopic boom head) that is located directly below the basket could have been partially blocked from moving upwards by the beam 2. In final positioning of the boomlift basket (moving upwards), the trapped telescopic boom head most likely managed to free itself. This caused a sudden and unexpected fast upward motion (jerked-up).

Underlying Causes and Contributing Factors

- There is an existing training program for boomlift operators, which are Working at Height Training and Boomlift Demonstration. However, it is concluded that the Boomlift demonstration focusing on boomlift functionality was not adequate to ensure that boomlift operators understand the specific hazards related to boomlift operations. [Training]
 - There was no training program for supervisors supervising boomlift operations prior to the incident. Therefore, these supervisors were not able to effectively execute their respective supervisory roles in ensuring safe operability of the boomlift before each boomlift operation. [Training]
 - Prior to the incident, the project had identified the risk of being in "Line of Fire" and implemented a supplementary "Line of Fire" training program for all construction workers. This training was to reinforce their existing knowledge of this risk. As of the incident date, the implementation of the supplementary training had not yet reached 100% of site workers. [Error Enforcing Condition]
 - There was a change in the sequence of the construction at site due to delay in arrival of connection angle plates. The change of sequence in the construction did not introduce any new hazards not already captured in the risk assessment for boomlift operations. However, the change resulted in increased complication in the manoeuvring of the boomlift. This change and the corresponding increased in manoeuvring complication were not picked-up at site (by Field Engineers or Supervisors) prior to execution of the steel erection work. [Error Enforcing Condition]
- The increased complication to manoeuvre the boomlift was further complicated by an unauthorised ad-on of a metal cover mat that was placed on the floor of the boomlift basket. Whilst it performed the function of catching falling small instruments like nuts and bolts, the metal cover mat blocked the view directly below the boomlift basket and therefore any complication to manoeuvre the boomlift in tight locations is made worst whereby the boomlift operator will not be able to see directly below if any of the boomlift parts had made contact with any structures. [Defence]

3 Key Learning Points

- Training program for all members of the workforce and consistent with their expected roles and responsibilities (workers, banksmen & supervisors).
- Management of change at the sharp end of the construction line and at field engineers level [Including modification (or simple ad-on) to machineries is not allowed without approval from the appropriate parties].
- Routine work may require different strategy/requirement to complete them safely depending on the specific situation at the site (e.g. location of other structures etc.) and field engineers, supervisor and worker must be trained to identify them.

For further information, please contact DCV/3471 or DCV 3471

Issued 22 May 2008

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