SEA (INDIA)

LEARNING FROM ACCIDENTS

Safety Alert from SEA (India)

HQ & Correspondence address: Safety Engineers Association
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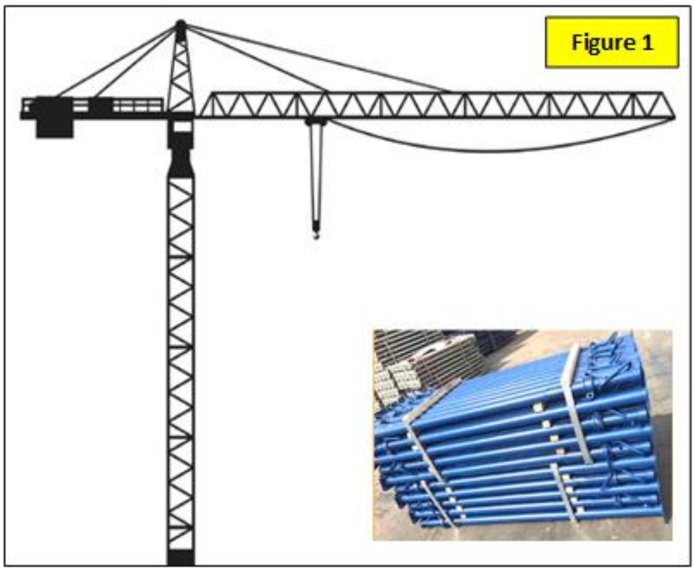
Title: Fall of Material during Mechanical Material Handling

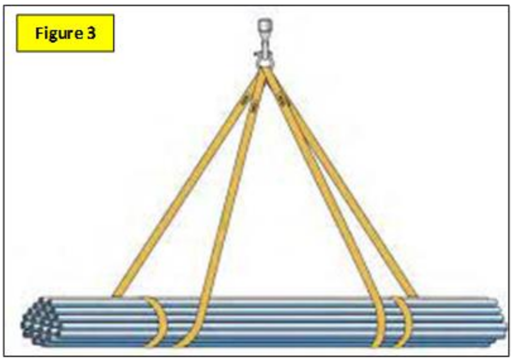
What Happened

- In a construction site, a tower crane was engaged to lift a bunch of Collapsible Tube Prop (CT Props)
- CT Props are adjustable steel tubes used for supporting the shuttering boards to withstand the concrete load during concreting - Refer Figure 2
- While the load was being lifted few inner tubes of the CT props got disengaged from the outer tubes as they were not connected together with pins
- The angle by which the load lifted also contributed to the sliding of the tubes.
- The inner tube of CT Prop fell down from 10m height. Fortunately, it fell down in the no man's land but had a very high potential for a serious incident.

Photographs



Adjustable CT Prop with male & female connected with a pin



Recommended rigging technique to secure bunch of pipes without tilting

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What went wrong

- Load (CT Props) were not secured before picked up for lifting with connecting pins
- Poor awareness of the team about this hazard while collecting the CT props for lifting
- CT props design – The pins for the CT prop shall be designed in such a way they are not inadvertently removed and lost during the handling
- Riggers failed to identify this hazard before loading and have not used any additional protection before lifting such loose materials
- Poor supervision & hazard recognition by the team evident from the above observations
- Pre-startup verification for the activity not effective
- Competency assurance process for formwork team and the riggers not effective
- Non availability of pins not considered as deviation and considered acceptable
- Hazard recognition and operational safety standards not established clearly

Key Lessons & Corrective Action

Materials like CT props must be secured **with connecting pins before stacking them for any lifting operation**

CT props without pins shall be identified and removed immediately from the site to prevent further use

Proper rigging techniques and hitches shall be used with a safe lifting angle between the slings **to prevent tilting of the load to one side.** Refer Figure 2

Connecting pins of the CT props shall be designed to prevent inadvertent removal during its regular use

Usage of material baskets for lifting loose / unsecured materials is recommended

Competency assurance process shall be effective in ensuring the team members understand the obvious hazards in the activity and risk controls

Ensure effective implementation of pre-start up verification of activities.

Establish clear operational safety standards for loading, unloading & rigging practices

Improve information, instruction, training & supervision for loading & unloading

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Pl note our New Web site ID: URL: http://www.safetyengineersassociation.org