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Safe** 



Liberty
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Cranes are industrial machines that are mainly used for material movement at construction sites, production halls, assembly lines, storage areas, power stations and similar places. These can also be dangerous as severe injuries and fatalities occur every year in association with operation and handling of cranes. Majority of these incidents are related to mobile, rail, and EOT cranes.

We at Liberty General Insurance Limited understand the importance of human safety against hazards and risks associated while working with EOT Cranes. We intent to suggest some measures to reduce these hazards and risks.

EOT (ELECTRIC OVERHEAD TRAVELLING) CRANES

These are a class of cranes with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure. These cranes are commonly found in factory applications such as steel yards, paper mills, automotive repair shops etc. for loading and unloading activities.

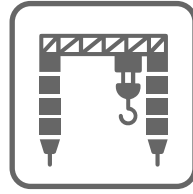
SAFE WORKING WITH ELECTRIC OVERHEAD TRAVELLING (EOT) CRANE

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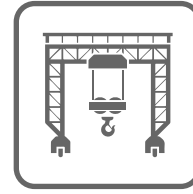


TYPES OF EOT CRANES

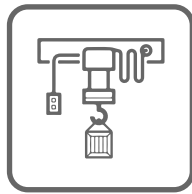
There are various types defined depending upon the component parts and the mechanism used.



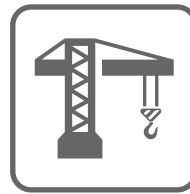
Bridge Cranes



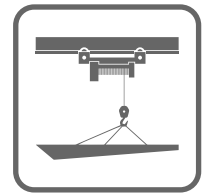
Gantry Cranes



Monorail Cranes



Jib Cranes

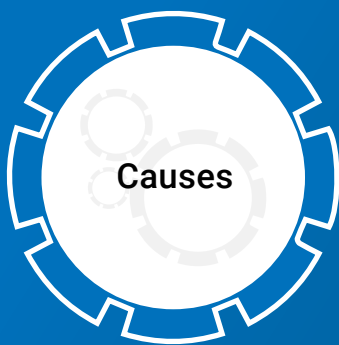


Workstation Crane



CASE STUDY

A. At an Engineering Workshop, heavy metal web frames were being lifted for loading into a transportation vehicle using EOT crane. The frames were not adequately hooked. A worker accidentally took support over a frame to avoid slipping, this resulted into dislodging of the frame and the worker got crushed under the weight of heavy frame.



Human Error



Improper lifting method.



Incompatible use of lifting gear (clamps and hook without shackle).



Before any lifting operation, a competent person should verify that the established lifting method is adequate and that the right equipment has been selected for the job.



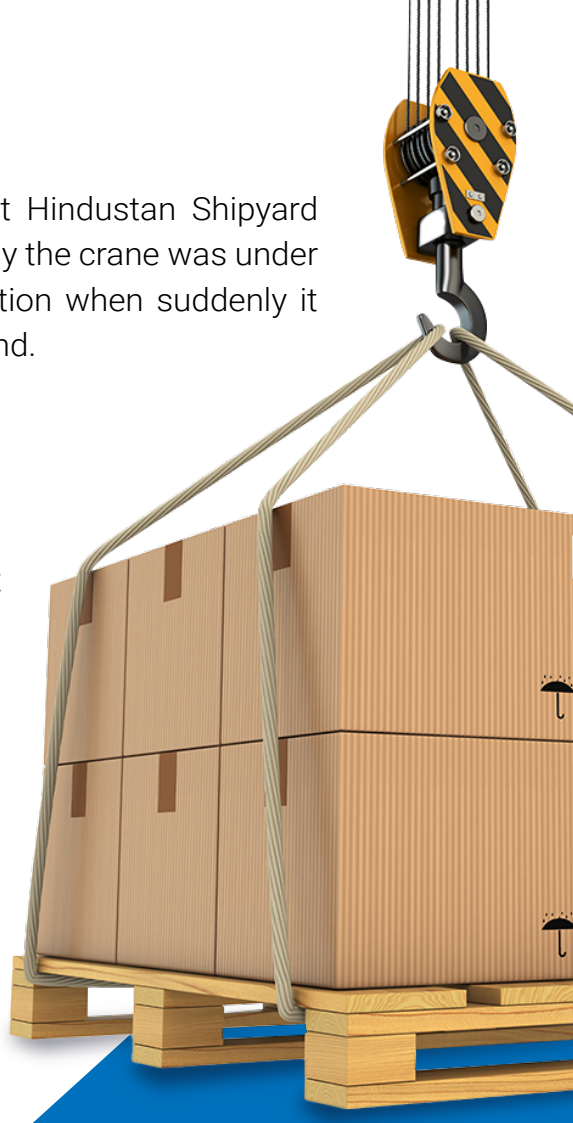
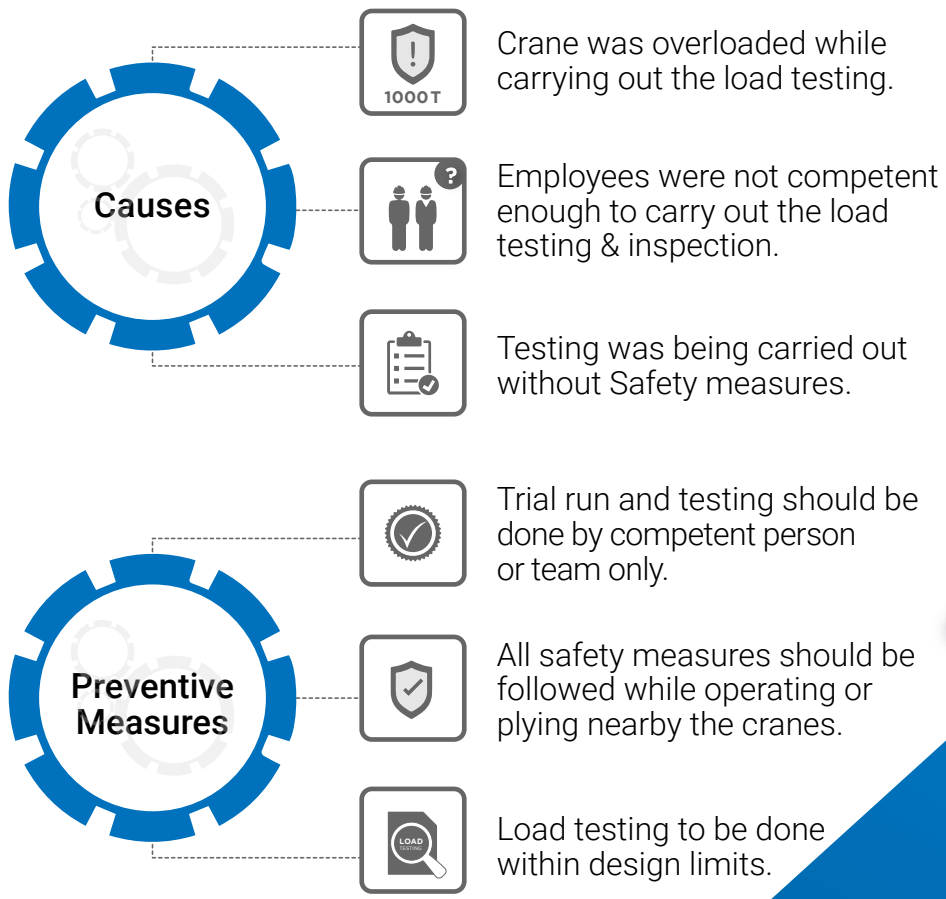
All persons involved in the work must be adequately trained.



A safe distance must always be maintained with respect to the job being lifted with the help of crane.



B. A massive collapse of a newly installed Gantry Crane at Hindustan Shipyard Limited (Vizag) resulted into death of 10 workers. Reportedly the crane was under trial run and testing to determine its capacity and inspection when suddenly it crumbled and crashed over the ground with a massive sound.



HAZARD IDENTIFICATION



Electrical Hazards: According to OSHA, nearly 50 percent of overhead crane accidents are the result of machinery coming into contact with a power source during operation.



Overloading: All crane structural failures can be attributed to overloading of a crane operational capacity.



Fall of Material lifted: Visual impairment, two-blocking, slipping, mechanical failure, or operator incompetency can result in serious injuries or fatalities.



SAFEGUARDING

- ◆ Post the load rating chart in each crane where the operator can read it. Do not overload the crane or hoist. Make sure the combined weight of the lifter and load does not exceed the rated capacity of the crane or hoist.
- ◆ Lift the load once all the safety and technical checks are done.
- ◆ Do not carry loads over people. Equipment can fail unexpectedly, and operator errors can have serious ramifications.
- ◆ All employees operating equipment should be properly trained regarding hoist and overhead crane safety rules and procedures.
- ◆ Operating instructions should be given from a designated person.
- ◆ Trained person should be designate to operate the crane.
- ◆ Load balancing is important, make sure hook latch is fixed once the load is attached.
- ◆ Avoid multi directional movements of load at a time.
- ◆ To pick up a load, move the crane and hoist/hook directly above the load to eliminate the possibility of side loading and minimize load swing.
- ◆ Put a “10-foot rule” in place. No worker should be allowed to be within a 10-foot radius. If a load is at more than 15 feet high, then increase that radius.
- ◆ Ensure rigging is appropriate for the load size, shape and weight. Make sure the rigging materials are in healthy condition.
- ◆ Always maintain a clear view of the crane path for operator so he/she can observe any obstacles or personnel in path.
- ◆ Distraction during carne operation should be avoided.
- ◆ Suspended loads to be avoided.
- ◆ Check that all alarms and horns are in working order.
- ◆ Maintain a distance of 10 feet from power lines.

TRIVIA

Cranes are named after a “**Bird.**”

The largest crane in the world is called Thialf, which resides in Rotterdam.
It can lift a weight of 14200 metric tons.

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