



LEARNING FROM INCIDENTS AWARENESS ALERT

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Projects & Technology – Major Projects East

June 2012

100T Mobile Crane Boom Failure

Target audience for this alert

Fabrication Yards & Construction Sites where mobile cranes are used

- Site HSE and Project Managers
- Fabrication Yards and Construction Sites HSE Leads
- Lifting and Hoisting Competent Persons

What happened

In March 2012, the boom of a 100Ton telescopic mobile crane failed while attempting a lift a 17T Bolster rack of 12X ERC Pipes. The boom fully buckled with the boom extremity/lifting Block falling onto the intended load.

The incident happened at the FMC's Labuan C.S. Base Yard (Mode 3 contractor site).

Why it happened

- Crane operator overloaded the crane's lifting capacity.
- Operator relied on the crane's safety systems instead of using correct data from load charts and guesstimated the crane capacity.
- The crane's safety system was not working correctly because of poor maintenance
- Periodic maintenance of crane's load sensor & load monitoring system was carried out but no records of calibration & load tests were kept.
- Crane's original load capacity chart was not available in the crane cabin, the load chart used was hand written, and was not correct for the crane in use and was also not in the operator's language.
- Site supervisor neither trained nor familiar with lifting operations.
- Procedures in place for managing Lifting and Hoisting were not adequate e.g. Roles and responsibilities of Banks-men, Riggers and Crane Operators unclear.
- Inconsistent pre-job checks, unclear Work Instructions, Generic JHAs used; Poor job planning/layout affecting accessibility of the crane; crane maintenance records not available.

Lessons learned

- Correct crane load charts should be available so that the Crane Operator does not rely solely on the crane's safety and electronic load monitoring systems.
- Maintenance records and test certificates for cranes and overload protection systems must be available and checked before a crane is put into use.



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- Lifting plan should be developed using the correct load capacity charts and the correct load data such as actual weight of the load, Centre of Gravity, actual dimensions, etc. so that the crane operator do not have to “guesstimate” the capacity of the crane.
- Persons in charge of lifting operations must be competent to properly assess and implement the lifting plans and work instructions.

Recommendations

- Check that crane load charts are available in the crane and that the charts are correct for the make and model of crane in use.
- Confirm that maintenance records and test certificates are available and current for all cranes before bringing them into use.
- Check that crane operators are familiar with the model and type of crane in use.
- Check that persons in charge of lifting operations are competent.
- Carry out periodic spot checks to ensure Crane’s daily checklist items are physically carried out by the crane operator instead of just “ticking the box” exercise, and at the same time assess the crane operator’s competency in conducting the checks.

Further Information

For further information contact [Alex Siong](#)

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