

Unique height safety guidelines

Crane operations on construction sites present their own unique and significant challenges when considering operator safety. These are compounded via the erection and dismantling of the crane, as well as through its normal operation and maintenance.

WHEN it comes to safety with working at height, there are stringent safety measures and guidelines to follow. Falls and accidents can happen from any height, but cranes have their own safety guidelines for safe operation, and this therefore must include specific fall protection guidelines.

In July this year, Australian Canopy Crane was fined \$20,000 by Workplace Health and Safety Queensland (WHSQ) for a fatal 2006 fall involving a worker who fell 50m from the jib of a tower crane while performing maintenance work alone. WHSQ found the crane's jib had not been fitted with a static line, the man was not wearing a harness, and there was no adequate emergency system for retrieving someone if they fell.

After the incident, the company took action to comply with the Australian standards for tower cranes, and reviewed their health and safety management procedures for ongoing crane maintenance.

Gordon Cadzow of the Fall Protection Manufacturers' Association (FPMA) agrees that the tragic consequences of this accident could easily have been prevented. "In this case, the risk analysis should have identified the potential for the operator to fall. With all crane operations, it is essential that a fall arrest rated full body harness and the appropriate attachment equipment and anchorages are used. For rescue purposes, the harness should have a frontal fall arrest point as mandated in the latest Australian Standard (AS/NZS 1891.1.2007)," says Cadzow.

Mobile Boom Cranes

The solution to height safety problems on mobile extended boom cranes can be complex as in many cases there are no



The operation, erection and dismantling of cranes require a fall protection plan as with any situation involving working at heights.

satisfactory anchor points and the fall clearances can be small. Nevertheless, AS4801 and the Code of Practice for Building and Construction Work stipulate that any operation carried out at a height in excess of 2m is high risk.

Work on roping boom extensions is particularly hazardous and, ideally, should be carried out from an EWP. Where this is not practical, for example due to ground conditions, work may be carried out using work positioning techniques using anchor points created by anchor straps onto load bearing structures on the crane boom.

Cadzow agrees that, whilst there are no ideal solutions in these situations, the focus is generally on risk minimisa-

tion rather than elimination. This means that more attention needs to be given to both operator training and certification as well as rescue methods.

Tower Cranes

Tower cranes are generally built from 6m vertical sections already fitted with ladders and offset platforms at each stage. Climbing using twin tail lanyards may be used during erection work – again, specific operator training and accreditation should be ensured – with particular reference to the connection of both tails to the tower during stationary work.

The traditional "three points of contact" on ladder climbing should not be con-

sidered as adequate in tower cranes as 6m falls are possible in each section and the surrounding structure will do nothing to limit the fall distance.

Many vertical sections are pre fitted with lifeline systems but where this is not the case, vertical lifelines should be installed. In each section, the lifeline should extend beyond the platform to allow safe access to it, before disconnection from one stage and reconnection to the next. Operators should take adequate rest while climbing to the operating platform but should remain connected during that rest period.

Boom assembly, regardless of the height above ground, is a very difficult operation. The

operator is working with inadequate footing, in areas of limited mobility while guiding the movement of heavy objects into position and working with tools to assemble locking pins.

Again, much of this operation should be carried out by properly trained and accredited staff using twin tail lanyard systems. It is recommended that a horizontal lifeline system is fitted once the boom assembly is completed.

During crane erection and dismantling, use and maintenance, consideration also needs to be given to rescue and recovery in the event of an operator experiencing an

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