

## **CRANE OPERATIONS**

The Occupational Health and Safety Authority would like to remind all duty holders that the setting up and operation of all lifting appliances (including cranes) is covered by a number of specific provisions in the Work Equipment (Minimum Safety and Health Requirements) Regulations, of 2004, S. L. 424.30. In particular, Regulation 5(1) requires an employer to ensure that where the safety of work equipment depends on the installation conditions, such equipment shall be subject to an initial inspection (after installation, and before first being put into service) and a subsequent inspection after assembly at a new site or in a new location by competent persons, so as to ensure that the work equipment has been installed correctly and is operating properly.

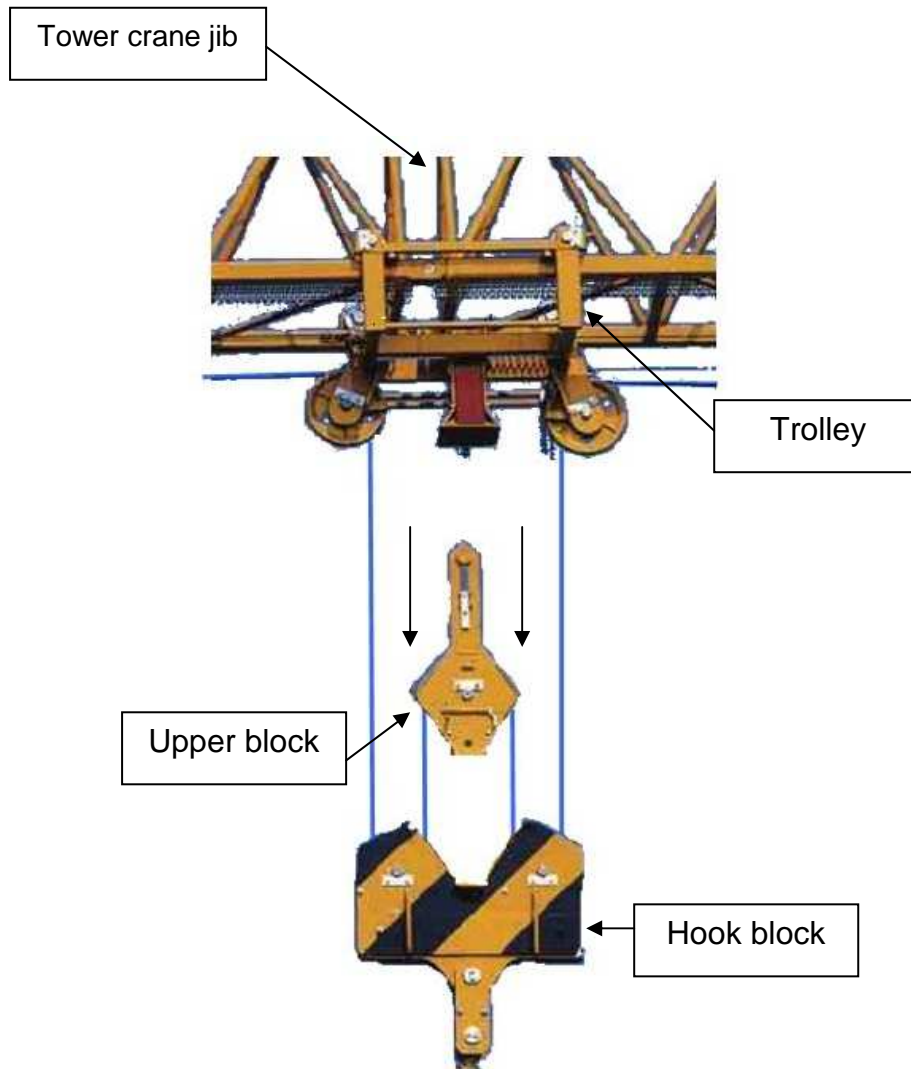
The Work Places (Health, Safety and Welfare) Regulations S.L 424.09 specify that cranes have to be thoroughly examined by a competent person and a certificate of the test and examination specifying the safe working load or loads of the machine and signed by the person making the test is issued and kept available for inspection. The base of the tower crane has to be certified by a competent person so as to ascertain that it can withstand the weight of the crane and the maximum load it can lift. For mobile cranes, the outriggers should be fully extended on stable ground, with the base plates of the correct material and dimensions. The employer must also ensure that the crane is regularly maintained and repairs are carried out by competent persons and that the safety features are not tampered with.

The crane operator must be able to read and interpret the load charts so that the crane is not overloaded. The employer must ensure that the safety switches and alarms are fully functional and a risk assessment of the lifting operations is carried out. No persons may be lifted by a crane unless the crane is designed for this purpose and a suitable cage, certified by a competent person, is used. Cranes should not be operated in very strong winds and the loads have to be attached to the hook in a safe manner and well balanced. Passing with loads over persons and third party property should be avoided. A safe passage for pedestrians should be established and clearly indicated in cases where the crane is erected in the road. If the operator cannot see the whole lifting operation there should be a signal person to guide him in conformity with the Work Place (Provision of Health and, or Safety Signs) Regulations, S.L. 424.16. Particular care should be taken to stay clear of overhead power lines. Extreme caution should be taken when two or more cranes operate with overlapping radii. If this situation cannot be avoided, a risk assessment has to be drawn up and the operating procedures and control measures are strictly adhered to. No objects should be left attached to the hook of the crane and a tower crane should be left in free slew, when not in use.

A very important aspect in the operation of tower cranes is the re-reeving operation whereby the operator changes the wire rope configuration from two fall to four fall. When this is done automatically by engaging the pulley mechanism (upper block) into the guide in the trolley using the remote control, the operator has to make certain that the mechanism is fully engaged and locked in place. This is of vital importance because if the upper block is not locked in place it may disengage and become loose without notice. This will result in the upper block falling freely onto the hook block as shown in the diagram below.

If this happens, it is possible that the impact of the two blocks may cut the wire rope with the consequence that the blocks and any suspended load would be released. The OHSa is informed that similar accidents have occurred in other countries. To reduce the chances of this situation occurring, it is highly advisable that, where possible, the re-reeving operation is carried out by the operator in the crane's cabin and the trolley fully retracted. Thus the operator could visually verify, at close range, that the upper block is locked in place before proceeding to the lifting operation.

### Accidental release of Upper Block from Trolley



Officers from the OHS&A carry out random inspections on cranes and ask for the competent person examination reports. If the crane and its base are not covered by a valid report or if it is being used in an unsafe manner, the officer issues a verbal order and the operations are stopped immediately until corrective action is taken. In certain cases the officers may also ask for a written risk assessment of the crane operations and ensure that the control measures are being adhered to.