

Infrastructure Plant Manual

Module P516 – Undertaking lifting operations

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0.1 Job roles

This module is applicable to the following job roles, you must familiarise yourself with all of the clauses contained within it to understand your personal responsibilities. If you intend to carry out any of these roles you must hold the relevant Sentinel competency:

- Machine Operator
- Crane Controller
- COSS
- ES
- Planner
- Maintainer/Fitter
- Principal Contractor
- Plant Operator License Holders
- Slinger
- Haulier
- Appointed Person
- Crane Supervisor

0.2 Risk mitigation

This module helps mitigate the following high level risks:

- a) compliance with legislation (LOLER, PUWER, HASAW);
- b) collision, e.g. collision between a RRV and an OTM;
- c) overturning, e.g. RRV overturning during lifting operations;
- d) damage to assets, e.g. RRV or its load hitting a passing train during ALO operation;
- e) derailment, e.g. trailer being loaded incorrectly;
- f) staff injuries, e.g. Operator being trapped between machine and infrastructure or machine and machine.

1 Before starting work

All lifting operations shall be under the control of a competent person (normally a crane controller) and carried out in accordance with an authorised safe system of work that includes a lift plan (see NR/PLANT/0200/module P503).

The crane controller or competent person shall:

- a) be conversant with the safe system of work and the lift plan to be used;
- b) brief all staff involved in the work task with the method of working;
- c) brief all staff involved in the work task following any changes to the system of work (see Section 3.8 of this module).

It is important that each person on the worksite understands:

- a) their role in the work task. This includes any staff arriving part way through the task;
- b) the intended crane movements associated with the planned work task.

NOTE If a locomotive is attached to a crane, the locomotive driver should be briefed on the lift plan prior to start of work, made aware of signals to be used in the operation, and verbally instructed to commence operation and work to the signals given.

2 Responsibilities on site

2.1 Responsibilities of a crane controller

The crane controller or competent person shall:

- a) be in a safe position throughout the lifting operation;
- b) manage the safe control of the lifting operation;
- c) maintain communication with the crane operator;
- d) check that adjacent lines will not be fouled by the lifting equipment or the load unless suitable protection has been put in place in accordance with NR/PLANT/0200/module P501;
- e) check that any associated vehicles (e.g. wagons) have been detached and properly secured at a safe distance as detailed in the lift plan;
- f) make sure that the rated capacity of lifting equipment is not exceeded and report any inadvertent overloading to the equipment owner for them to notify the maintainer;
- g) make sure that the work is controlled within the appropriate machine duty for:
 - i) the most severe track cant on which the lifting equipment will travel when operating in rail mode;
 - or
 - ii) the most severe slope/gradient on which the lifting equipment will travel when operating in road mode;
- h) make sure that the correct mode for the load limiting device or rated capacity indicator (RCI) has been selected and locked where this facility exists;

NOTE A risk assessment should be carried out to determine whether there is a need to lock and remove the key from the machine (where applicable).

- i) check that the load is free and neither pinned down nor jammed in any way before lifting commences;
- j) check that the load will not foul the sides or tops of openings or rigging when lifting or lowering a load through a hatchway;
- k) make sure that the load is:
 - i) balanced when raised, and if not, that it is lowered and suitably balanced before resuming the lifting operation;
 - ii) not lifted higher than is necessary to clear obstructions
 - iii) not allowed to remain suspended longer than is necessary for the operation;
- l) set up appropriate exclusion zones (see NR/PLANT/0200/module 505) and make sure that people do not stray into these areas. If there is a need to guide a load or prevent it from swinging, then this shall be achieved by the most appropriate and safe means e.g. attachment of bars or ropes and assistance of other slingers or staff etc;
- m) make sure that when the crane is slewed towards the high side of a canted track or ground slope, that:
 - i) the load does not foul the crane (due to change of radius), or;
 - ii) that the boom is not brought inside the minimum working radius with the resulting danger of the crane falling backwards;
- n) make sure that care is taken to prevent catching the load when chains or slings are being removed;
- o) make sure that the cab or crane controls are not vacated whilst the lifting equipment is working;
- p) make sure that the machine does not exceed a speed of 5mph whilst carrying suspended loads unless there are other limitations or conditions specified by EAC or OEM instructions.

2.2 Responsibilities of a crane operator

The crane operator shall:

- a) Not start work until they have been briefed on the lift plan;
- b) follow the instructions given by the crane controller or competent person;
- c) carry out the following before commencing work:
 - i) a full functional travel brake test;
 - ii) a full functional machine test without load to check that all motions and safety devices are functioning correctly;
 - iii) select the appropriate duty settings for the RCI and/or other warning devices where fitted;
 - iv) If the crane is equipped with two hooks on a single jib, elevate the hook not in use to its maximum height and not permit any load or lifting accessory to be attached to it;