



Lifting Operation Supervisor



Purpose of Course:

This course is a requirement for an individual – who is not a licensed rigger or a designated foreman of a licensed rigger – to supervise the hoisting or lowering of articles on the outside of a building with hoisting equipment. In lieu of completing this course, an individual may possess safe technique understanding to perform "Lifting Operation Supervisor" activities.

b. Duration

18 Hours of instructional time, excluding breaks & meals (Total 24 Hrs - 03 Days)

c. Daily Schedule of Training

Sr	Nature of Activity	Start - End (Time)	Remarks
01	Opening Meeting / Introduction of Trainer, Audience, Management of Royal Crown for Training Technology	0900-0930 Hrs	Only at Opening Day
02	Lecture I (Audio / Video / Classroom)	0930 - 1100 Hrs	Daily
03	Tea / Coffee Break	1100 - 1115 Hrs	Daily
04	Lecture II (Audio / Video / Classroom)	1115 - 1300 Hrs	Daily
05	Lunch / Brunch Break / Prayer Time	1300 - 1400 Hrs	Daily
06	Lecture III (Audio / Video / Classroom)	1400 - 1530 Hrs	Daily
07	Tea / Coffee Break	1530 - 1550 Hrs	Daily
08	Lecture IV (Audio / Video / Classroom)	1550 - 1600 Hrs	Daily
09	Revision / Skill Practice	1600 - 1700 Hrs	Daily
10	Student Presentation / Examination	1700 - 1800 Hrs	Only at Final Day

e. Class Size

5-20 Persons Trainees

f. Facility Requirement

The Training Facility used by the Course Provider must:

- Have sufficient room to accommodate all expected attendees and the equipment needed to perform hands-on exercises where required as part of the course;
- Make provisions for the presentation of training material in all media types

(computer, projector, video/DVD player, etc.); and

- Comply with all applicable laws, rules & regulations relating to occupancy, zoning, egress, fire detection, fire suppression, light, ventilation, cleanliness, sanitary facilities, emergency notification & evacuation procedures.

Training may be held at construction sites / Royal Crown Premises provided the above requirements are met.



Outline of Courses with Content List

1. Introduction to Cranes & Derricks

Include instruction on inspection, maintenance, repair, use, installation, hazards associated with the relevant sections of the building code and industry practice with regards to Rigging

2. Crane & RIGGING Accidents

3. Common causes of accidents with cranes

4. CFR 29 OSHA 1926 Overview

Subparts: E (PPE-Personal Protective Equipment), H (Material Handling, Storage), K (Electrical), L (Scaffolds), M (Fall Protection), CC (Cranes and Derricks in Construction)

5. Inspections of Crane, Ropes & Operators Responsibilities.

- Periodic/annual inspection performed by owner, the Department of Buildings & documentation to be maintained
- Frequent inspection, who can perform & documentation to be maintained
- How to perform a frequent inspection
- Components inspected during a frequent inspection & how to identify hazards
- Steps to take if hazard discovered
- Inspection process & safety checklists, including what to inspect, how to inspect, how frequently to inspect, including rigging systems & anchorage, individual components, slings, hoists mortars, etc.
- Identification of wear, defects, failure signs in all rigging equipment.

- Handling, maintenance, repair/replacement of rigging equipment, rope, hardware, etc. Rope (wire and fiber) and hardware used in rigging, type, strength, application, manufacturers' specifications & limitations, handling.
- Connection & termination of wire/fiber rope (fasteners, knots, hitches, hooks, shackles, thimbles, eyes, tackle blocks, etc.) including connection to suspended work platforms, (i.e., scaffold platforms); hoist loads (materials, equipment).

6. Maintenance Repair of Cranes & Ropes

- Types of maintenance required
- Who can maintain cranes
- Who can repair a crane
- Safeguards to take before beginning maintenance or repairs

7. Crane Setup

- Ground conditions
- Deviation from plans not permitted
- Founding of crane, outrigger placement and cribbing
- Danger to underground infrastructure, excavations, foundations, etc.

8. Reading Plan

9. Operating Cranes

- Starting up the crane
- Hazards of operating in a dense urban environment



- High wind hazards
- Operating near power lines
- Prohibition against hoisting over pedestrians, traffic & adjoining buildings
- Requirements for shutting down and securing the crane
- Communication between workers & supervisors while rigging: radios; hand signals; flags; etc.

10. Reading Load Chart

11. Lifting & Lower Loads

Weights & materials; Center of gravity; Rigging requirements; Critical Picks Logs & record keeping, including maintenance records for equipment, pre-task & safety meetings. Hoisting & hoisting equipment (manual, electric, etc.), pulley, block/tackle, sheaves, drums, slings (all types), chains, electric hoist motors, capacity, rigging of motors, mechanical/electrical safety devices and their operation, critical picks. Construction & use of suspended working platforms, manufacturer's specifications, limitations, max spans, guardrails, planking, debris netting, stirrups, maneuvering, drifting, securing of platform during & end of shift. Suspension methods, slings, c-hooks, outrigger beams, clamps, counterweights, shoring scaffolds (outrigger supports), masonry and concrete anchors (expansion, adhesive, screw), pull testing of anchorage devices. Off-the-shelf hardware, as well as site-built hardware systems must be included

12. Operational Aids and Safety Devices

Types of aids, safety devices, functions, how to use, steps to take if operational aid/safety device not working. Acceptable means to substitute for a malfunctioning aid/safety device Personal fall-arrest systems, use, storage, maintenance, installation & anchorage.

Other types of personal protection (hard hats, respirators, gloves, shoes, eye protection, clothing

13. Crane & Derrick Safety Protocols & Emergency Procedures

Electrical safety during rigging installation & use, including work performed from suspended working decks (welding, use of electrical equipment, etc.).

Overhead protection/safety exclusion zones during rigging, hoisting & use of scaffolding: sidewalk sheds; barriers; flag persons; hazard signage.

14. Crane Assembly, Jumping & Disassembly

15. Rigging Requirements

The definition of Rigging such as the traditional uses for rigging in the construction & industrial environment, including industrial rope access (IRA). The mathematics of Rigging, measurement, symbols, geometry, calculations, leverage, friction, fulcrum, center of gravity, uniform and concentrated loading. Also the wind effects on netting & other components. Calculation of weight, loads, sling loads, drifting loads, balance & tipping points of objects, center of gravity, non-symmetrical center of gravity & buoyancy (lifting in water).

16. General Construction Site Hazards