

RESPONSIBILITIES IN MOBILE CRANE
OPERATIONS



CONSTRUCTION SAFETY ASSOCIATION
OF ONTARIO

MOBILE CRANE OPERATIONS—WHO IS RESPONSIBLE?

The question of who is responsible for the various aspects of a crane operation is too often unclear until a serious accident occurs and a court decides.

Because most crane operations are complex and because they can differ so much from one job to the next, no single set of guidelines can ever cover all the parameters involved. The following information, however, can be applied to most situations.

If you are a crane owner, operator, or the owner of a construction company that occasionally rents a crane, it is important that you are familiar with these responsibilities.

Everyone involved in the operation must be made aware of the division of responsibilities before the work begins.

CRANE OWNER

The crane owner (including all management and supervisory personnel employed by the owner) is responsible for the identification and assignment of specific responsibilities to the operating crew. The owner must be aware of the requirements of every job. The owner must provide equipment and personnel capable of completing the job in a safe and efficient manner and in accordance with all applicable regulations.

There are instances where the crane may be leased by an end user without any supervisory, operational, maintenance or support services, or personnel from the crane owner. This situation, considered “bare rental”, must be dealt with differently than instances where the crane is used primarily by its owner.

In bare rental situations, the renter assumes many of the responsibilities normally attributed to the owner. These include

1. ensuring that the crane has the rated capacity necessary for the job.
2. ensuring that the operator is well trained, licensed where required, experienced, and competent to operate the particular crane to which they are assigned on the particular job involved.
3. ensuring that the operator is fully aware of their responsibilities and expectations and capable of carrying them out.
4. providing ongoing, high-quality training and upgrading programs for all personnel to ensure a consistently high level of competence in all phases of the operations.
5. assigning to the crew clear individual responsibilities and the authority necessary to exercise the responsibilities.
6. providing qualified supervision for the operation where needed.
7. ensuring the crane is used in accordance with the manufacturers’ instructions and all applicable regulations.
8. ensuring that the log book is maintained and updated.

When a crane owner rents a crane in a bare rental situation they still retain certain responsibilities including

1. ensuring that all personnel involved in maintaining, repairing, transporting, and assembling the equipment are well trained, experienced, and competent to handle their specific jobs in a safe and efficient manner. Depending on the rental agreement this may also be the responsibility of the renter.
2. ensuring that a thorough crane maintenance and inspection program is established and maintained. This will involve developing crane reports or records that facilitate the reporting of all work needed and completed on the crane.

3. ensuring that the client and site supervision are aware of their responsibilities.
4. ensuring that a suitable and safe crane and equipment are assigned to the job based on the renter's information.
5. ensuring that the crane is complete with all applicable load rating charts, operator's manuals, control identifying labels, and all warning labels and tags.
6. ensuring that the crane and associated equipment are in accordance with the manufacturer's requirements and all applicable regulations.

When an owner is responsible for the crane and its operation, all of the above responsibilities apply.

CRANE OPERATOR

Many accidents that are attributed to operator error are often not the operator's responsibility. Inadequate planning on the part of site supervision often puts crane operators in the position of having to make judgements or decisions that are beyond what should be reasonably expected of them.

Generally, the operator is responsible for the safety of the crane operation as soon as the load is lifted clear of the ground. Because of this responsibility, whenever there is reasonable cause to believe that the lift might be dangerous or unsafe, the operator must refuse to lift until the concern has been reported to the supervisor, any hazards are rectified, and safety conditions are met.

The operator is specifically responsible for

1. knowing the machine well. The operator must understand its functions and limitations as well as its particular operating characteristics.
2. having a thorough knowledge of the information contained in the crane's operating manual.
3. being familiar with the crane's load chart. The operator must understand the correct meaning of all notes and warnings and be able to calculate or determine the crane's actual net capacity for every possible configuration of the machine.
4. inspecting and maintaining the crane regularly as prescribed by both the owner and manufacturer.
5. informing the owner of any problems, needed maintenance, or necessary repairs to the machine. This should be done in writing, preferably in the machine's logbook or inspection report.
6. recording in the log or report the details of all inspections, maintenance, and other work done on the crane while in the field.
7. supervising and training the apprentice if one is present.
8. being aware of any site conditions that could affect the crane operation. Be particularly cautious around powerlines. The operator must refuse to operate if the crane, hoist rope, or load will come closer to a powerline than the absolute limit of approach specified in law.
9. checking that the site is adequately prepared for the crane.
10. reviewing the planned operation and requirements with the site supervision.
11. finding out the load and rigging weight and determining where the load is to be placed. Although the operator is not responsible for determining the weight of the load, if the operator lifts it without checking the weight with site supervision, then the operator becomes fully responsible for the lift and any consequences that result.

12. determining the number of parts of hoist line required.
13. checking the load chart to ensure that the crane has sufficient net lifting capacity for every lift.
14. selecting (from the range diagram) the best boom, jib, and crane configuration to suit the load, site and lift conditions.
15. assembling, setting up and rigging the crane properly.
16. following the manufacturer's operating instructions in accordance with the load chart.
17. considering all factors that might reduce crane lift capacity and adjusting the load weight to suit. This will include such factors as weather conditions and ground conditions.
18. knowing basics of rigging procedures and ensuring that they are applied (this is possible only when the load is visible to the operator).
19. maintaining communication with signalpersons.
20. ensuring that the apprentice is in a safe place during operation.
21. operating in a smooth, controlled, and safe manner.
22. moving the crane.
23. shutting down and securing the machine properly when it is unattended.
24. exercising the right to refuse to operate the crane if there is cause to suspect the lift might be unsafe.

SITE SUPERVISION

Site supervision has overall responsibility for the lift. Supervision must plan all phases of operation, cooperating fully with the operator who has the final say regarding the safety of the operation.

Site supervision is specifically responsible for

1. verifying that the crane certification and inspection records are up to date before allowing the crane on the project.
2. organizing a pre-lift meeting and ensuring all the appropriate people are present.
3. establishing a lift plan and ensuring it is followed.
4. providing a well prepared working area for the crane before it arrives on the job. This involves ensuring that
 - a) access roads are adequately prepared.
 - b) there is room to erect and/or extend the boom.
 - c) blocking is available to support the boom while it is being assembled and dismantled.
 - d) operating locations are graded, level, and compacted.
 - e) blocking is always used under outriggers.
 - f) the crane supplier will be told if the ground is soft and if hardwood mats or cribbing are needed.
 - g) operating locations are far enough away from shoring, excavations, trenches, buried utilities, foundations, etc. to eliminate the risk of collapse.
 - h) operating locations are chosen to ensure the minimum clearances from powerlines. Otherwise, powerlines must be shut down, relocated, or specially insulated by the utility.
 - i) ropes or barricades are positioned to prevent entry into hazardous areas around and especially behind the crane
 - j) public access to the lift area is prohibited and barricades are available. Where the crane is to be set up on a city street or public road, site supervision must ensure that it is possible to use the required outrigger extension. This may require obtaining approval to shut off one or more lanes of traffic.
5. supervising all work involving the crane.
6. determining the correct load weight and radius, and informing the operator. (Site supervision should know the maximum radius, load weight and lift height of each lift before ordering the crane).

7. ensuring that the rigging crew is experienced and competent. They must be capable of establishing weights; judging distances, heights and clearances; selecting tackle and lifting gear suitable for the loads; and rigging the load safely and securely.
8. supervising the rigging crew.
9. ensuring that the load is properly rigged.
10. ensuring that the signalpersons are competent and capable of directing the crane and load to ensure the safety and efficiency of the operation. Knowing the international hand signals is a must.
11. designating signalpersons and ensuring that the operator knows who they are.
12. ensuring the safety of the rigging crew and all other personnel affected by the rigging operation.
13. keeping the public and all non-essential personnel clear of the crane and load during operation.
14. controlling the movements of all personnel within the area affected by the lift.
15. ensuring that all required safety precautions are taken when the lift is in the vicinity of powerlines.
16. ensuring that all personnel involved in the operation understand their jobs and responsibilities.
17. ensuring that an emergency response plan is in place and is communicated to all relevant personnel.