

# Trade Profile

## Mobile Crane Operator



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# Trade profile

## MOBILE CRANE OPERATOR



# Structure of the Trade Profile

This profile has two sections that provide a snapshot of the trade's description, and all trade activities as they are organized in the Red Seal Occupational Standard:

**Description of the Mobile Crane Operator trade:** an overview of the trade's duties, work environment, job requirements, similar occupations and career progression

**Task Matrix:** a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard

**Major Work Activity (MWA):** the largest division within the standard that is comprised of a distinct set of trade activities

**Task:** distinct actions that describe the activities within a major work activity

**Sub-task:** distinct actions that describe the activities within a task

# DESCRIPTION OF THE MOBILE CRANE OPERATOR TRADE

“Mobile Crane Operator” is this trade’s official Red Seal occupational title approved by the CCDA. This standard covers tasks performed by mobile crane operators.

Mobile crane operators operate mobile cranes to lift, move, position and place materials and equipment. They perform pre-operational inspections. They calculate crane capacities, determine load weight, and set up, position and stabilize the crane before the lift. Mobile crane operators have the additional responsibilities of disassembling, traveling and transporting mobile cranes. They may also participate in rigging procedures. They also perform some routine maintenance and housekeeping of the crane equipment such as lubricating and cleaning.

Mobile cranes are used in many industry sectors. They are very commonly used in the construction of buildings and the assembly of large equipment. They are used in locations such as construction sites, warehouses, factories, mines, oil rigs, refineries, railway yards, ships, windmill farms and ports. Mobile crane operators may be employed by rental companies, construction firms, manufacturers, public utilities, transport sector companies, ship builders, cargo-handlers, airports, railways, mines and in the forestry, marine, residential, oil and gas sectors.

Mobile cranes come in different types such as crawlers, floating platform-mounted, ring-mounted, truck-mounted, rough-terrain (RT) and all-terrain (AT). The boom of the crane may be lattice or telescopic. Some mobile cranes are fitted with equipment, including piledriver, clamshell, dragline, wrecking ball, magnet and personnel basket, which can perform specialized functions. They may be outfitted with heavy lift attachments, tower attachments and jibs.

Some mobile crane operators specialize in different crane functions. In some cases, an operator may work for years on a single large site, operating a single type and size of mobile crane. Mobile crane operators working for rental companies may rarely work on the same site more than once and may routinely perform a variety of tasks with different types and sizes of mobile cranes.

The majority of the work in this trade is outdoors. Key attributes for people entering the trade are strong communication skills, mechanical aptitude, mathematical ability, excellent visual and depth perception and a high degree of hand-foot-eye coordination. The operation of some mobile cranes is physically demanding as is the handling of accessories.

Mobile crane operators interact with other tradespeople, contractors and customers.

The skills of mobile crane operators are transferable to operating other heavy equipment. With experience, mobile crane operators may move into careers such as business owners, supervisors, trainers and job coordinators.

# MOBILE CRANE OPERATOR TASK MATRIX

## A – Performs common occupational skills

6%

<b>Task A-1</b> <b>Performs safety-related functions</b> <b>61%</b>	<b>A-1.01 Maintains a safe work environment</b>	<b>A-1.02 Uses personal protective equipment (PPE) and safety equipment</b>	<b>A-1.03 Uses documentation</b>
<b>Task A-2</b> <b>Uses communication and mentoring techniques</b> <b>39%</b>	<b>A-2.01 Uses communication techniques</b>	<b>A-2.02 Uses mentoring techniques</b>	

## B – Performs hoisting calculations

18%

<b>Task B-3</b> <b>Determines load weights</b> <b>29%</b>	<b>B-3.01 Identifies weight</b>	<b>B-3.02 Calculates weight</b>
<b>Task B-4</b> <b>Calculates crane capacity</b> <b>40%</b>	<b>B-4.01 Determines radius and crane configuration</b>	<b>B-4.02 Interprets load charts</b>
<b>Task B-5</b> <b>Performs rigging calculations</b> <b>31%</b>	<b>B-5.01 Performs sling angle calculations</b>	<b>B-5.02 Performs working load limit (WLL) calculations</b>

# C – Inspects and maintains crane

**13%**

**Task C-6**  
**Performs pre-operational checks and regular inspections**  
**41%**

<b>C-6.01 Inspects engine systems</b>	<b>C-6.02 Inspects air systems</b>	<b>C-6.03 Inspects electrical systems</b>
<b>C-6.04 Inspects hydraulic systems</b>	<b>C-6.05 Inspects chassis/ car body and running gear components</b>	<b>C-6.06 Inspects outriggers and counterweights</b>
<b>C-6.07 Inspects boom components and attachments</b>	<b>C-6.08 Inspects hoisting systems</b>	

**Task C-7**  
**Performs operational and continual checks**  
**39%**

<b>C-7.01 Checks operating controls</b>	<b>C-7.02 Inspects monitoring and warning systems</b>	<b>C-7.03 Monitors running lines, hoist ropes and standing ropes</b>
<b>C-7.04 Monitors gauges and warning systems</b>	<b>C-7.05 Monitors support base</b>	

**Task C-8**  
**Performs minor crane maintenance**  
**20%**

<b>C-8.01 Changes oil and filter</b>	<b>C-8.02 Greases crane</b>	<b>C-8.03 Lubricates wire ropes</b>
<b>C-8.04 Makes adjustments and replacements</b>		

## D – Performs rigging

12%

<b>Task D-9</b> Inspects, maintains and stores slings and hardware 47%	D-9.01 Lubricates slings and hardware	D-9.02 Identifies deficiencies in slings and hardware	D-9.03 Disposes of damaged slings and hardware
	D-9.04 Stores slings and hardware		
<b>Task D-10</b> Follows rigging procedures 53%	D-10.01 Selects required rigging	D-10.02 Rigs loads	D-10.03 Monitors rigging

## E – Plans lift, prepares site and sets up crane

15%

<b>Task E-11</b> Performs pre-lift planning 53%	E-11.01 Participates in routine, engineered and specialty lift planning	E-11.02 Evaluates risks and hazards	
<b>Task E-12</b> Sets up crane 47%	E-12.01 Performs final site inspection	E-12.02 Positions crane	E-12.03 Completes setup

## F – Assembles, disassembles and transports crane

13%

<b>Task F-13</b> Loads and unloads components for transport 19%	F-13.01 Loads crane and components	F-13.02 Unloads crane and components	
<b>Task F-14</b> Drives cranes on public roadways 14%	F-14.01 Performs pre-trip planning	F-14.02 Prepares crane for transport	F-14.03 Drives cranes
<b>Task F-15</b> Assembles and disassembles lattice boom cranes 27%	F-15.01 Installs tracks on car body (lattice boom)	F-15.02 Installs superstructure/upperworks (lattice boom)	F-15.03 Installs outrigger boxes (lattice boom)

<b>F-15.04 Installs boom base (lattice boom)</b>	<b>F-15.05 Installs counterweights (lattice boom)</b>	<b>F-15.06 Assembles main boom, tip and boom attachments (lattice boom)</b>
<b>F-15.07 Installs hook blocks and overhaul ball (lattice boom)</b>	<b>F-15.08 Removes hook blocks and overhaul ball (lattice boom)</b>	<b>F-15.09 Disassembles main boom, tip and boom attachments (lattice boom)</b>
<b>F-15.10 Removes counterweights (lattice boom)</b>	<b>F-15.11 Removes boom base (lattice boom)</b>	<b>F-15.12 Removes superstructure/upperworks (lattice boom)</b>
<b>F-15.13 Removes tracks from car body (lattice boom)</b>	<b>F-15.14 Removes outrigger boxes (lattice boom)</b>	
<b>F-16.01 Installs tracks on car body (telescopic boom)</b>	<b>F-16.02 Installs outrigger boxes (telescopic boom)</b>	<b>F-16.03 Installs superstructure/upperworks (telescopic boom)</b>
<b>F-16.04 Installs main boom (telescopic boom)</b>	<b>F-16.05 Installs hook blocks and overhaul ball (telescopic boom)</b>	<b>F-16.06 Installs counterweights (telescopic boom)</b>
<b>F-16.07 Installs jibs and inserts (telescopic boom)</b>	<b>F-16.08 Removes jibs and inserts (telescopic boom)</b>	<b>F-16.09 Removes counterweights (telescopic boom)</b>
<b>F-16.10 Removes hook blocks and overhaul ball (telescopic boom)</b>	<b>F-16.11 Removes main boom (telescopic boom)</b>	<b>F-16.12 Removes outrigger boxes (telescopic boom)</b>
<b>F-16.13 Removes tracks from car body (telescopic boom)</b>	<b>F-16.14 Removes superstructure/upperworks (telescopic boom)</b>	
<b>F-17.01 Assembles specialty equipment and attachments</b>	<b>F-17.02 Disassembles specialty equipment and attachments</b>	

**Task F-16**  
**Assembles and disassembles telescopic boom cranes**  
**29%**

**Task F-17**  
**Assembles and disassembles specialty equipment and attachments**  
**11%**

# G – Operates crane

**23%**

<p><b>Task G-18</b> Performs common craning operations <b>20%</b></p>	<p><b>G-18.01</b> Configures load moment indicator (LMI)</p>	<p><b>G-18.02</b> Mobilizes crane on jobsite</p>
<p><b>Task G-19</b> Operates friction drive lattice boom cranes <b>10%</b></p>	<p><b>G-19.01</b> Operates friction drive crawler-mounted lattice boom cranes</p>	<p><b>G-19.02</b> Operates friction drive truck-mounted lattice boom cranes</p>
<p><b>Task G-20</b> Operates hydraulic drive lattice boom cranes <b>21%</b></p>	<p><b>G-20.01</b> Operates hydraulic drive crawler-mounted lattice boom cranes</p>	<p><b>G-20.02</b> Operates hydraulic drive truck-mounted lattice boom cranes</p>
<p><b>Task G-21</b> Operates telescopic boom cranes <b>21%</b></p>	<p><b>G-21.01</b> Operates crawler-mounted telescopic cranes</p>	<p><b>G-21.02</b> Operates rubber tire-mounted telescopic cranes</p>
<p><b>Task G-22</b> Performs specialty craning operations <b>17%</b></p>	<p><b>G-22.01</b> Operates crane with piledriving equipment</p>	<p><b>G-22.02</b> Performs duty cycle operations</p>
		<p><b>G-22.03</b> Operates cranes on floating platforms</p>
	<p><b>G-22.04</b> Performs multi-crane lifts</p>	<p><b>G-22.05</b> Uses personnel hoisting equipment</p>
<p><b>Task G-23</b> Secures crane <b>11%</b></p>	<p><b>G-23.01</b> Secures crane for short term</p>	<p><b>G-23.02</b> Secures crane for long term</p>