Mobile Crane Operator
Guide to Course Content

2025

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Recognition:
To promote transparency and consistency, this document has been adapted from the 2021 Mobile Crane Operator Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at www.red-seal.ca

STRUCTURE OF THE GUIDE TO COURSE CONTENT

To facilitate understanding of the occupation, this guide to course content contains the following sections:

Task Matrix: a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard detailing the essential skills and the level of training where the content is covered.

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.

Training Profile Chart: a chart which outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training.

Technical Training Course Content for the Mobile Crane Operator trade: a chart which outlines the model for SATCC technical training sequencing.

TRAINING REQUIREMENTS FOR THE MOBILE CRANE OPERATOR TRADE

To graduate from each level of the apprenticeship program, an apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1800 hours each year. Total trade time required is 5400 hours and at least 3 years in the trade.

There are three levels of technical training delivered by the Western Trade Training Institute in various locations around the province:

Level One:	8 weeks equivalent (online and in-class) 3, 3, 3 and 4 days over 4 months
Level Two:	8 weeks equivalent (online and in-class) 3, 3, 3 and 4 days over 4 months
Level Three:	2 weeks equivalent (online and in-class) 11 successive days in-class

The information contained in this guide to course content details the technical training delivered for each level of apprenticeship. An apprentice spends approximately 15% of their apprenticeship term in a technical training institute learning the technical and theoretical aspects of the trade. The hours and percentages of technical and practical training may vary according to class needs and progress.

The content of the technical training components is subject to change without notice.

Entrance Requirements for Apprenticeship Training

Your grade twelve transcripts (with no modified classes) or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. In fact, employers prefer and recommend apprentices who have completed high school. This ensures the individual has all of the necessary skills required to successfully complete the apprenticeship program and receive journeyperson certification.

Individuals with “modified” or “general” classes in math or science do not meet our entry requirements. These individuals are required to take an entrance assessment prescribed by the SATCC.

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or “upgraders” must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).

Note: A CLB assessment is valid for a one-year period from date of issue.

Designated Trade Name	**Math Credit** at the Indicated Grade Level❶	**Science Credit** at Grade Level
Mobile Crane Operator	Grade 10	Grade 10

❶ - (One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre-calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable.).

*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.

For information about high school curriculum, including Math and Science course names, please see: http://www.curriculum.gov.sk.ca/

Individuals not meeting the entrance requirements will be subject to an assessment and any required training

MOBILE CRANE OPERATOR TASK MATRIX CHART

This chart outlines the major work activities, tasks and sub-tasks from the 2021 Mobile Crane Operator Red Seal Occupational Standard (RSOS). Each sub-task details the corresponding essential skill and level of training where the content is covered. *

* Sub-tasks with numbers in the boxes is where the content will be delivered in training. Harmonization for the Mobile Crane trade has been fully implemented for each level of technical training.

A - Performs Common Occupational Skills — 6%

A-1 Performs safety-related functions	**1.01 Maintains a safe work environment** **1,** **(2, 3 in context)**	**1.02 Uses personal protective equipment (PPE) and safety equipment** **1,** **(2, 3 in context)**	**1.03 Uses documentation** **1** **(2, 3 in context)**
A-2 Uses communication and mentoring techniques	**2.01 Use communication techniques** **1**	**2.02 Uses mentoring techniques** **3**	

B - Performs Hoisting Calculations — 18%

B-3 Determines load weights	**3.01 Identifies weight** **1, 2, 3**	**3.02 Calculates weight** **1, 2, 3**
B-4 Calculates crane capacity	**4.01 Determines radius and crane configuration** **1, 2, 3**	**4.02 Interprets load charts** **1, 2, 3**

B-5 Performs rigging calculations	5.01 Performs sling angle calculations 1, 2, 3	5.02 Performs working load limit (WLL) calculations 1, 2, 3

C – Inspects and Maintains Crane 13%

C-6 Performs pre-operational checks and regular inspections	6.01 Inspects engine systems 1, 2, 3	6.02 Inspects air systems 1, 2, 3	6.03 Inspects electrical systems 1, 2, 3	6.04 Inspects hydraulic systems 1, 2, 3	6.05 Inspects chassis/car body and running gear components 1, 2, 3
	6.06 Inspects outriggers and counterweights 1, 2, 3	6.07 Inspects boom components and attachments 1, 2, 3	6.08 Inspects hoisting systems 1, 2, 3		
C-7 Performs operational and continual checks	7.01 Checks operating controls 1, 2, 3	7.02 Inspects monitoring and warning systems 1, 2, 3	7.03 Monitors running lines, hoist ropes and standing ropes 1, 2, 3	7.04 Monitors gauges and warning systems 1, 2, 3	7.05 Monitors support base 1, 2, 3
C-8 Performs minor crane maintenance	8.01 Changes oil and filters 1	8.02 Greases crane 1, 2, 3	8.03 Lubricates wire ropes 1, 2, 3	8.04 Makes adjustments and replacements 1, 2, 3	

D – Performs Rigging — 12%

D-9 Inspects, maintains and stores slings and hardware	9.01 Lubricates slings and hardware 1, 2	9.02 Identifies deficiencies in slings and hardware 1, 2	9.03 Disposes of damaged slings and hardware 1, 2	9.04 Stores slings and hardware 1, 2
D-10 Follows rigging procedures	10.01 Selects required rigging 1, 2, 3	10.02 Rigs loads 1, 2, 3	10.03 Monitors rigging 1, 2, 3	

E – Plans Lift, Prepares Site and Sets Up Crane — 15%

E-11 Performs pre-lift planning	11.01 Participates in routine, engineered and specialty lift planning 1, 2, 3	11.02 Evaluates risks and hazards 1, 2, 3	
E-12 Sets up crane	12.01 Performs final site inspection 1, 2, 3	12.02 Positions crane 1, 2, 3	12.03 Completes setup 1, 2, 3

F – Assembles, Disassembles and Transports Crane — 13%

F-13 Loads and unloads components for transport	13.01 Loads crane and components 1, 3	13.02 Unloads and crane and components 1, 3

F-14 Drives cranes on public roadways	**14.01 Performs pre-trip planning** 1	**14.02 Prepares crane for transport** 1	**14.03 Drives cranes** 1		
F-15 Assembles and disassembles lattice boom cranes	**15.01 Installs tracks on car body (lattice boom)** 1	**15.02 Installs superstructure/ upperworks (lattice boom)** 1	**15.03 Installs outrigger boxes (lattice boom)** 1	**15.04 Installs boom base (lattice boom)** 1	**15.05 Installs counterweights (lattice boom)** 1, 3
	15.06 Assembles main boom, tip and boom attachments (lattice boom) 1, 2, 3	**15.07 Installs hook blocks and overhaul ball (lattice boom)** 1, 2, 3	**15.08 Removes hook blocks and overhaul ball (lattice boom)** 1, 2, 3	**15.09 Disassembles main boom, tip and boom attachments (lattice boom)** 1, 2, 3	**15.10 Removes counterweights (lattice boom)** 1, 3
	15.11 Removes boom base (lattice boom) 1	**15.12 Removes superstructure/ upperworks (lattice boom)** 1	**15.13 Removes tracks from car body (lattice boom)** 1	**15.14 Removes outrigger boxes (lattice boom)** 1	
F-16 Assembles and disassembles telescopic boom cranes	**16.01 Installs tracks on car body (telescopic boom)** 1	**16.02 Installs outrigger boxes (telescopic boom)** 1	**16.03 Installs superstructure/ upperworks (telescopic boom)** 3	**16.04 Installs main boom (telescopic boom)** 1	**16.05 Installs hook blocks and overhaul ball (telescopic boom)** 1, 2, 3
	16.06 Installs counterweights (telescopic boom) 1	**16.07 Installs jibs and inserts (telescopic boom)** 1, 2, 3	**16.08 Removes jibs and inserts (telescopic boom)** 1, 2, 3	**16.09 Removes counterweights (telescopic boom)** 1	**16.10 Removes hook blocks and overhaul ball (telescopic boom)** 1, 2, 3
	16.11 Removes main boom (telescopic boom) 1	**16.12 Removes outrigger boxes (telescopic boom)** 1	**16.13 Removes tracks from car body (telescopic boom)** 1	**16.14 Removes superstructure/upperworks (telescopic boom)** 3	

F-17 Assembles and disassembles specialty equipment and attachments	17.01 Assembles specialty equipment and attachments 3	17.02 Disassembles specialty equipment and attachments 3

G – Operates Crane 23%

G-18 Performs common craning operations	18.01 Configures load moment indicator (LMI) 1, 2, 3	18.02 Mobilizes crane on jobsite 1, 2, 3				
G-19 Operates friction drive lattice boom cranes	19.01 Operates friction drive crawler-mounted lattice boom cranes 1, 2, 3	19.02 Operates friction drive truck-mounted lattice boom cranes 1, 2, 3				
G-20 Operates hydraulic drive lattice boom cranes	20.01 Operates hydraulic drive crawler-mounted lattice boom cranes 1, 2, 3	20.02 Operates hydraulic drive truck-mounted lattice boom cranes 1, 2, 3				
G-21 Operates telescopic boom cranes	21.01 Operates crawler-mounted telescopic cranes 1, 2, 3	21.02 Operates rubber tire-mounted telescopic cranes 1, 2, 3				
G-22 Performs specialty craning operations	22.01 Operates crane with piledriving equipment 3	22.02 Performs duty cycle operations 3	22.03 Operates cranes on floating platforms 3	22.04 Performs multi-crane lifts 2, 3	22.05 Uses personnel hoisting equipment 3	

G-23 Secures crane	23.01 Secures crane for short-term	23.02 Secures crane for long-term
	1, 2, 3	1, 2, 3

TRAINING PROFILE CHART

This Training Profile Chart represents Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training at the topic level.

Mobile Crane Operator technical training for levels 1 and 2 are provided in alternative delivery. This method uses a combination of in-class training and at-home course work between training sessions. As a result, hours are listed below for a specific training level, but not for individual courses.

Technical training for levels 1 and 2 are both equivalent to 8 weeks in length, while level 3 is a 2 week in-class session.

Level One	Hours
Safety and Communication	
Basic Rigging	
Introduction to Load Weight Calculations	
Introduction to Load Charts	
Introduction to Load Weight Calculations	
Introduction to Load Charts	
Introduction to Mobile Crane Operations	
	240

Level Two	Hours
Advanced Rigging	
Advanced Load Weight Calculations	
Advanced Load Charts	
Operational Checks, Inspections and Maintenance	
Mobile Crane Set-up	
Advanced Mobile Crane Operations	
	240

Level Three	Hours
Safety/Tools and Equipment for Specialty Operations	
Pre-operational Checks, Inspections and Maintenance for Specialty Equipment	
Load Weight and Rigging Calculations for Specialty Equipment	
Load Charts for Specialty Equipment	
Specialty Mobile Crane Setup and Lift Planning	
Mobile Crane Operations for Specialty Equipment	
	80

TECHNICAL TRAINING COURSE CONTENT

This chart outlines the model for Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) technical training sequencing.

Level One — 8 Weeks Equivalent — 240 hours

Safety and Communication

- hazards and describe workplace safety and health regulations
- procedures associated with electrical contact
- knowledge of safe work practices
- types and uses of fire extinguishers
- techniques for effective verbal and non-verbal communication
- environmental and occupational hazards including handling, transport and disposal of hazardous materials (WHIMIS)
- types of personal protective equipment (PPE) and clothing and describe their applications, limitations
- lubricant characteristics and uses
- hand, power and measuring tools and describe their applications, procedures for use
- retaining devices and describe their applications and procedures to install and remove

RSOS topics covered in this section of training:

A-1 Performs safety related functions
A-1.01 Maintains safe work environment
A-1.02 Uses personal protective equipment (PPE) and safety equipment

A-2 Use communication and mentoring techniques
A-2.01 Uses communication techniques

E-11 Performs pre-lift planning
E-11.02 Evaluates risks and hazards

Basic Rigging

- codes, standards and regulations pertaining to wire ropes, rigging hardware and slings
- procedures used to select, install and connect wire ropes, rigging hardware and slings
- procedures used to troubleshoot issues with wire rope, slings and rigging components
- procedures used to dispose of damaged rigging components
- information pertaining to rigging and hoisting found on drawings and specifications
- procedures used to calculate sling angles and their effect on sling capacities
- procedures used to determine the appropriate sling size for a given load
- considerations and calculations used to determine WLLs

RSOS topics covered in this section of training:

B-5 Performs rigging calculations
B-5.01 Performs sling angle calculations
B-5.02 Performs working load limit (WLL) calculations

D-9 Inspects, maintains and stores slings and hardware
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

D-10 Follows rigging procedures
D-10.01 Selects required rigging
D-10.02 Rigs loads
D-10.03 Monitors rigging

Introduction to Load Weight Calculations

- procedure to determine weight of basic-shaped loads
- procedure to determine center of gravity
- lifting theory and forces

RSOS topics covered in this section of training:

B-3 Determines load weights
B-3.01 Identifies weight
B-3.02 Calculates weight

Introduction to Load Charts

- basic load charts, their characteristics and applications
- crane capacity, crane component capacity and working radius for basic lifting operations
- units of measure and symbols regarding lifting plans and load charts

RSOS topics covered in this section of training:

B-4 Calculates crane capacity
B-4.01 Determines radius and crane configuration
B-4.02 Interprets load charts

Introduction to Mobile Crane Operations

- procedures used to perform pre/post-operational inspections
- Crane setup and job planning
- basic crane types, operations, applications and components
- crane computers and integrated computerized components, their applications and procedures for use
- procedures used to plan and organize job tasks
- load securement and transport procedures

RSOS topics covered in this section of training:

A-1 Performs safety related functions
A-1.03 Uses documentation

C-6 Performs pre-operational checks and regular inspections
C-6.01 Inspects engine systems
C-6.02 Inspects air systems
C-6.03 Inspects electrical systems
C-6.04 Inspects hydraulic systems
C-6.05 Inspects chassis/car body and running gear components
C-6.06 Inspects outriggers and counterweights
C-6.07 Inspects boom components and attachments
C-6.08 Inspects hoisting systems

C-7 Performs operational and continual checks
C-7.01 Checks operating controls
C-7.02 Inspects monitoring and warning systems
C-7.03 Monitors running line, hoist ropes, and standing ropes
C-7.04 Monitors gauges and warning systems
C-7.05 Monitors support base

C-8 Performs minor crane maintenance
C-8.01 Changes oil and filter
C-8.02 Greases crane
C-8.03 Lubricates wire ropes
C-8.04 Makes adjustments and replacements

E-11 Performs pre-lift planning
E-11.01 Participates in routine, engineered and specialty lift planning
E-11.02 Evaluates risks and hazards

E-12 Sets up crane
E-12.01 Perform final site inspection
E-12.02 Positions crane
E-12.03 Completes setup

F-13 Loads and unloads components for transport
F-13.01 Loads crane and components
F-13.02 Unloads crane and components

F-14 Drives crane on public roadways
F-14.01 Performs pre-trip planning
F-14.02 Prepares crane for transport
F-14.03 Drives crane

F-15 Assembles and disassembles lattice boom cranes
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)
F-15.04 Installs boom base (lattice boom)
F-15.05 Installs counterweights (lattice boom)
F-15.06 Assembles main boom, tip and boom attachments (lattice boom)
F-15.07 Installs hook blocks and overhaul ball (lattice boom)
F-15.08 Removes hook blocks and overhaul ball (lattice boom)
F-15.09 Disassembles main boom, tip and boom attachments (lattice boom)
F-15.10 Removes counterweights (lattice boom)
F-15.11 Removes boom base (lattice boom)
F-15.12 Removes superstructure/upperworks (lattice boom)
F-15.13 Removes tracks from car body (lattice boom)
F-15.14 Removes outrigger boxes (lattice boom)

F-16 Assembles and disassembles telescopic boom cranes
F-16.01 Installs tracks on car body (telescopic boom)
F-16.02 Installs outrigger boxes (telescopic boom)
F-16.04 Installs main boom (telescopic boom)
F-16.05 Installs hook blocks and overhaul ball (telescopic boom)
F-16.06 Installs counterweights (telescopic boom)
F-16.07 Installs jibs and inserts (telescopic boom)
F-16.08 Removes jibs and inserts (telescopic boom)
F-16.09 Removes counterweights (telescopic boom)
F-16.10 Removes hook blocks and overhaul ball (telescopic boom)
F-16.11 Removes main boom (telescopic boom)
F-16.12 Removes outrigger boxes (telescopic boom)
F-16.13 Removes tracks from car body (telescopic boom)

G-18 Performs common craning operations
G-18.01 Configures electronic operational aids
G-18.02 Mobilizes crane on jobsite

G-19 Operates friction-drive lattice boom crane
G-19.01 Operates friction drive crawler-mounted lattice boom cranes
G-19.02 Operates friction drive truck-mounted lattice boom cranes

G-20 Operates hydraulic drive lattice boom cranes
G-20.01 Operates hydraulic drive crawler-mounted lattice boom cranes
G-20.02 Operates hydraulic drive truck-mounted lattice boom cranes

G-21 Operates telescopic boom cranes
G-21.01 Operates crawler-mounted telescopic cranes
G-21.02 Operates rubber tire-mounted telescopic cranes

G-23 Secure crane
G-23.01 Secures crane for short term
G-23.02 Secures crane for long term

Advanced Rigging

- calculating the safe working load of various bridle configurations
- use of unequal slings to lift irregular objects
- non-routine rigging and lifts, their applications, limitations and procedures
- advanced rigging hardware and lift techniques

RSOS topics covered in this section of training:

B-5 Performs rigging calculations
B-5.01 Performs sling angle calculations
B-5.02 Performs working load limit (WLL) calculations

D-9 Inspects, maintains and stores slings and hardware
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

D-10 Follows rigging procedures
D-10.01 Selects required rigging
D-10.02 Rigs loads
D-10.03 Monitors rigging

Advanced Load Weight Calculations

- procedure to determine weight of irregular shaped loads
- multi-crane lifts and procedures
- calculating the SWL for wire rope
- identifying the centre of gravity for complex objects

RSOS topics covered in this section of training:

B-3 Determines load weights
B-3.01 Identifies weight
B-3.02 Calculates weight

G-22 Performs specialty craning operations
G-22.04 Performs multi-crane lifts

Advanced Load Charts

- load charts, their characteristics and applications
- influence of wind on operations
- line parts and their components

RSOS topics covered in this section of training:

B-4 Calculates crane capacity
B-4.01 Determines radius and crane configuration
B-4.02 Interprets load charts

Pre-operational Checks, Inspections and Maintenance

- various crane systems, components, their purpose and operation
- procedures used to inspect, maintain and troubleshoot engines and drive systems
- procedures used to inspect, maintain and troubleshoot electrical systems and their components
- procedures used to inspect, maintain and troubleshoot pneumatic and hydraulic systems and their components
- procedures used to inspect, maintain and troubleshoot mechanical systems and their components
- procedures used to inspect, maintain and troubleshoot steering systems and their components
- procedures to inspect, maintain and troubleshoot chassis and structural components
- procedures to inspect, maintain and troubleshoot hoisting systems and their components
- procedures used to perform continual checks

RSOS topics covered in this section of training:

C-6 Performs pre-operational checks and regular inspections
C-6.01 Inspects engine systems
C-6.02 Inspects air systems
C-6.03 Inspects electrical systems
C-6.04 Inspects hydraulic systems
C-6.05 Inspects chassis/car body and running gear components
C-6.06 Inspects outriggers and counterweights
C-6.07 Inspects boom components and attachments
C-6.08 Inspects hoisting systems

C-7 Performs operational and continual checks
C-7.01 Checks operating controls
C-7.02 Inspects monitoring and warning systems
C-7.03 Monitors running lines, hoist ropes and standing ropes
C-7.04 Monitors gauges and warning systems
C-7.05 Monitors support base

C-8 Performs minor crane maintenance
C-8.02 Greases crane
C-8.03 Lubricates wire ropes
C-8.04 Makes adjustments and replacements

Mobile Crane Set-up

- procedures used for the assembly and disassembly of lattice boom cranes and their components
- procedures used for the assembly and disassembly of telescopic boom cranes and their components
- procedures used to determine crane positioning and setup
- procedures used to prepare worksite for crane operations

RSOS topics covered in this section of training:

E-11 Performs pre-lift planning
E-11.01 Participates in routine, engineered and specialty lift planning
E-11.02 Evaluates risks and hazards

E-12 Sets up crane
E-12.01 Performs final site inspection
E-12.02 Positions crane
E-12.03 Completes setup

F-15 Assembles and disassembles lattice boom cranes
F-15.06 Assembles main boom, tip and boom attachments (lattice boom)
F-15.07 Installs hook blocks and overhaul ball (lattice boom)
F-15.08 Removes hook blocks and overhaul ball (lattice boom)
F-15.09 Disassembles main boom, tip and boom attachments (lattice boom)

F-16 Assembles and disassembles telescopic boom cranes
F-16.05 Installs hook blocks and overhaul ball (telescopic boom)
F-16.07 Installs jibs and inserts (telescopic boom)
F-16.08 Removes jibs and inserts (telescopic boom)
F-16.10 Removes hook blocks and overhaul ball (telescopic boom)

Advanced Mobile Crane Operations

- hydraulic telescopic boom cranes, their applications and operation
- friction drive lattice boom cranes, their applications and operation
- procedures used to perform pick and carry operations

RSOS topics covered in this section of training:

G-18 Performs common craning operations
G-18.01 Configures electronic operational aids
G-18.02 Mobilizes crane on jobsite

G-19 Operates friction drive lattice boom cranes
G-19.01 Operates friction drive lattice boom cranes
G-19.02 Operates friction drive truck-mounted lattice boom cranes

G-20 Operates hydraulic drive lattice boom cranes
G-20.01 Operates hydraulic drive crawler-mounted lattice boom cranes
G-20.02 Operates hydraulic drive truck-mounted lattice boom cranes

G-21 Operates telescopic boom cranes
G-21.01 Operates crawler-mounted telescopic cranes
G-21.02 Operates rubber tire-mounted telescopic cranes

G-22 Performs specialty craning operations
G-22.04 Performs multi-crane lifts

G-23 Secure crane
G-23.01 Secures crane for short term
G-23.02 Secures crane for long term

Level Two topics from the RSOS that are taught in context:

A-1 Performs safety related functions

For details regarding the In Context Topic, see page 23

Level Three — 8 Weeks Equivalent — 80 hours

Specialty Safety/Tools and Equipment for Specialty Operations

- safety equipment, their applications, maintenance and procedures for use
- safe work practices and regulatory requirements pertaining to safety
- effective communication practices
- communication devices, their operation and the procedures used to communicate during hoisting operations
- procedures used to operate cranes near high voltage electrical equipment
- procedures used to complete documentation
- tools and equipment, their applications, maintenance and procedures for use
- fasteners and retaining devices, their applications and procedures for use

RSOS topics covered in this section of training:

A-2 Uses communication and mentoring techniques
A-2.02 Uses mentoring techniques

C-8 Performs minor crane maintenance
C-8.02 Greases crane
C-8.03 Lubricates wire ropes
C-8.04 Makes adjustments and replacements

E-11 Performs pre-lift planning
E-11.02 Evaluates risks and hazards

Load Weight Calculations for Specialty Equipment

- procedures to determine weight of irregular shaped loads
- procedures to determine center of gravity

RSOS topics covered in this section of training:

B-3 Determines load weights
B-3.01 Identifies weight
B-3.02 Calculates weight

Specialty Rigging

- wire ropes, their applications, limitations and procedures for use
- procedures used to install, monitor, inspect, maintain, store and dispose of wire ropes and rigging hardware
- rigging hardware, their applications, limitations and procedures for use
- rigging and hoisting applications and techniques
- sling configurations, their characteristics and applications
- working load limits (WLL)
- non-routine rigging and lifts, their applications, limitations and procedures
- non-routine rigging and lift techniques
- methods and equipment used for reeving operations
- procedures used for multi-crane lifts

C-8 Performs minor crane maintenance
C-8.02 Greases crane
C-8.03 Lubricates wire ropes
C-8.04 Makes adjustments and replacements

D-10 Follows rigging procedures
D-10.01 Selects required rigging
D-10.02 Rigs loads
D-10.03 Monitors rigging

G-22 Performs specialty craning operations
G-22.04 Performs multi-crane lifts

Load Charts for Specialty Equipment

- load charts, their characteristics and applications
- crane component capacity and working radius for lift operations

RSOS topics covered in this section of training:

B-4 Calculates crane capacity
B-4.01 Determines radius and crane configuration
B-4.02 Interprets load charts

Pre-operational Checks, Inspections and Maintenance for Specialty Equipment

- engines and drive systems, their purpose, components and operation
- procedures used to inspect, maintain and troubleshoot engines, drive systems and their components
- procedures used to inspect, maintain and troubleshoot mechanical systems and their components
- hydraulic systems and components, their purpose and operation
- procedures used to inspect, maintain and troubleshoot hydraulic systems and their components
- procedures used to perform continual checks

RSOS topics covered in this section of training:

C-6 Performs pre-operational checks and regular inspections
C-6.01 Inspects engine systems
C-6.02 Inspects air systems
C-6.03 Inspects electrical systems
C-6.04 Inspects hydraulic systems
C-6.05 Inspects chassis/car body and running gear components
C-6.06 Inspects outriggers and counterweights
C-6.07 Inspects boom components and attachments
C-6.08 Inspects hoisting systems

C-7 Performs operational and continual checks
C-7.01 Checks operating controls
C-7.02 Inspects monitoring and warning systems
C-7.03 Monitors running lines, hoist ropes and standing ropes
C-7.04 Monitors gauges and warning systems
C-7.05 Monitors support base

Specialty Mobile Crane Setup

- positioning, blocking and leveling operations and their applications
- procedures used for the assembly and disassembly of lattice boom cranes and their components
- procedures used for the assembly and disassembly of telescopic boom cranes and their components
- procedures used to transport cranes, their components and accessories
- steps required for pre-lift planning

- procedures used to determine crane positioning and setup
- procedures used to prepare worksite for crane operations

RSOS topics covered in this section of training:

E-11 Performs pre-lift planning
E-11.01 Participates in routine, engineered and specialty lift planning
E-11.02 Evaluates risks and hazards

E-12 Sets up crane
E-12.01 Performs final site inspection
E-12.02 Positions crane
E-12.03 Completes setup

F-13 Loads and unloads components for transport
F-13.01 Loads crane and components
F-13.02 unloads crane and components

F-15 Assembles and disassembles lattice boom cranes
F-15.05 Installs counterweights (lattice boom)
F-15.06 Assembles main boom, tip and boom attachments (lattice boom)
F-15.07 Installs hook blocks and overhaul ball (lattice boom)
F-15.08 Removes hook blocks and overhaul ball (lattice boom)
F-15.09 Disassembles main boom, tip and boom attachments (lattice boom)
F-15.10 Removes counterweights (lattice boom)

F-16 Assembles and disassembles telescopic boom cranes
F-16.03 Installs superstructure/upperworks (telescopic boom)
F-16.05 Installs hook blocks and overhaul ball (telescopic boom)
F-16.07 Installs jibs and inserts (telescopic boom)
F-16.08 Removes jibs and inserts (telescopic boom)
F-16.10 Removes hook blocks and overhaul ball (telescopic boom)
F-16.14 Removes superstructure/upperworks (telescopic boom)

F-17 Assembles and disassembles specialty equipment and attachments
F-17.01 Assembles specialty equipment and attachments
F-17.02 Disassembles specialty equipment and attachments

Mobile Crane Operations for Specialty Equipment

- lifting theory and forces
- units of measure and symbols relating to lifting plans and load charts
- procedures used to perform pre- and post-operational inspections
- procedures to perform crane operations
- crane computers, integrated computerized components, their applications and procedures for use
- procedures used to operate telescopic boom cranes and their attachments
- procedures used to operate hydraulic drive lattice boom cranes, hydraulic drive systems and their attachments
- procedures used to operate friction drive lattice boom cranes, friction drive systems and their attachments
- procedures used to perform specialty crane operations

RSOS topics covered in this section of training:

E-11 Performs pre-lift planning
E-11.01 Participates in routine, engineered and specialty lift planning

G-18 Performs common craning operations
G-18.01 Configures electronic operational aids
G-18.02 Mobilizes crane on jobsite

G-19 Operates friction drive lattice boom cranes
G-19.01 Operates friction drive lattice boom cranes
G-19.02 Operates friction drive truck-mounted lattice boom cranes

G-20 Operates hydraulic drive lattice boom cranes
G-20.01 Operates hydraulic drive crawler-mounted lattice boom cranes
G-20.02 Operates hydraulic drive truck-mounted lattice boom cranes

G-21 Operates telescopic boom cranes
G-21.01 Operates crawler-mounted telescopic cranes
G-21.02 Operates rubber tire-mounted telescopic cranes

G-22 Performs specialty craning operations
G-22.01 Operates crane with piledriving equipment
G-22.02 Performs duty cycle operations
G-22.03 Operates cranes on floating platforms
G-22.04 Performs multi-crane lifts
G-22.05 Uses personnel hoisting equipment

G-23 Secure crane
G-23.01 Secures crane for short term
G-23.02 Secures crane for long term

Level Three topics from the RSOS that are taught in context:

A-1 Performs safety related functions

For details regarding the In Context Topic, see page 23

In Context Topics

In context means learning that has already taken place and is being applied to the applicable task. Learning outcomes for in context topics are accomplished in other topics in that level.

A-1 Performs safety related functions
A-1.01 Maintains a safe work environment
A-1.02 Uses personal protective equipment (PPE) and safety equipment
A-1.03 Uses documentation