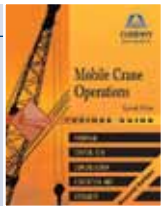




# Mobile Crane Operations

## L1 MOBILE CRANE OPERATIONS



LEVEL 1

### Curriculum Notes

- 147.5 Hours (Includes 72.5 hours of Core Curriculum which is a prerequisite for Level 1 completion and must be purchased separately. See p. 10 for ordering information.)
- Revised: 2004, Second Edition
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).
- A Spanish translation is available. Please see NCCER's online catalog for more information.

PAPERBACK	ISBN
Trainee Guide: \$65	<b>978-0-13-109864-0</b>
Instructor's Guide: \$65	<b>978-0-13-109865-7</b>

### Product Supplements

<b>PowerPoint® Presentation Slides</b> ISBN 978-0-13-602326-5	\$40
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### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

#### Orientation to the Trade (5 Hours)

Trainee \$19 ISBN 978-0-13-160065-2  
Instructor \$19 ISBN 978-0-13-160071-3  
(Module ID 21101-04) Provides an overview of the entire course and highlights the duties and responsibilities of a mobile crane operator. Discusses *ASME B30.5* and *OSHA 550*, as well as career opportunities and operator requirements.

#### Basic Principles of Cranes (15 Hours)

Trainee \$19 ISBN 978-0-13-160066-9  
Instructor \$19 ISBN 978-0-13-160072-0  
(Module ID 21102-04) Introduces mobile crane equipment with an in-depth discussion of terminology and nomenclature. Explains the basic scientific principles associated with mobile crane operation.

#### Rigging Practices (15 Hours)

Trainee \$19 ISBN 978-0-13-160067-6  
Instructor \$19 ISBN 978-0-13-160073-7  
(Module ID 21103-04) Presents the fundamentals of rigging. Discusses a variety of rigging gear, components, and configurations and their applications within the mobile crane industry.

#### Crane Safety (15 Hours)

Trainee \$19 ISBN 978-0-13-160068-3  
Instructor \$19 ISBN 978-0-13-160074-4  
(Module ID 21104-04) Introduces various safety aspects of mobile crane operation, including equipment inspection, site hazard identification, and required personal protective equipment. Explains how to work with site plans and specifications.

#### Operating a Crane (25 Hours)

Trainee \$19 ISBN 978-0-13-160070-6  
Instructor \$19 ISBN 978-0-13-160075-1  
(Module ID 21105-04) Describes the basic functions of a crane, as well as standard procedures for starting up and shutting down a crane. Provides an opportunity to become familiar with the actual operation of a crane and the functions of its controls.

## L2 MOBILE CRANE OPERATIONS

LEVEL 2

### Curriculum Notes

- 145 Hours
- Revised: 2004, Second Edition
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).

PAPERBACK	ISBN
Trainee Guide: \$94	<b>978-0-13-109866-4</b>
Instructor's Guide: \$94	<b>978-0-13-109867-1</b>

### Product Supplements

<b>PowerPoint® Presentation Slides</b> ISBN 978-0-13-602328-9	\$40
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### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

#### Communication (10 Hours)

Trainee \$19 ISBN 978-0-13-160076-8  
Instructor \$19 ISBN 978-0-13-160087-4  
(Module ID 21201-04) Examines the communication process, addressing obstacles such as abstractions, fear, and lack of experience as well as environmental factors. Covers methods of communication. Presents at the *ASME B30.5* hand signals, including the appropriate operator action when the signal is given and the expected machine movement.

#### Machine Power Flow (27.5 Hours)

Trainee \$19 ISBN 978-0-13-160077-5  
Instructor \$19 ISBN 978-0-13-160088-1  
(Module ID 21202-04) Discusses the power systems that enable cranes to perform. Discusses diesel and gasoline/propane engines and electrical/motor-generator, as well as mechanical, electrical, pneumatic, and hydraulic power systems.

#### Preventive Maintenance (22.5 Hours)

Trainee \$19 ISBN 978-0-13-160079-9  
Instructor \$19 ISBN 978-0-13-160089-8  
(Module ID 21203-04) Covers crane prevention maintenance and compliance inspections. Presents safety; procedure and equipment/materials considerations for inspections.

#### Wire Rope (25 Hours)

Trainee \$19 ISBN 978-0-13-160080-5  
Instructor \$19 ISBN 978-0-13-160090-4  
(Module ID 21204-04) Covers the components of wire rope and inspection requirements and procedures for wire rope, load blocks, and sheaves. Explains proper installation of wire rope, maintenance guidelines, and end terminations and preparations.

#### Computer Aids/Operator Aids (20 Hours)

Trainee \$19 ISBN 978-0-13-160081-2  
Instructor \$19 ISBN 978-0-13-160091-1  
(Module ID 21205-04) Provides information on load moment indicators, anti-two-block devices, load indicators, and other operator aids that are installed in cranes. Describes input devices associated with these operator aids and the information they provide.

#### Load Dynamics (15 Hours)

Trainee \$19 ISBN 978-0-13-160082-9  
Instructor \$19 ISBN 978-0-13-160092-8  
(Module ID 21206-04) Covers leverage and stability, operational quadrants, submerged lifts, non-centered lifts, and other factors that affect stability.

#### On-Site Equipment Movement (25 Hours)

Trainee \$19 ISBN 978-0-13-160083-6  
Instructor \$19 ISBN 978-0-13-160093-5  
(Module ID 21207-04) Covers site hazards and restrictions that could hinder on-site crane movement, safety considerations involved in crane movement over unlevel ground, pick-and-carry operations, and power line contact. Addresses flotation capacity.

## L3 MOBILE CRANE OPERATIONS

LEVEL 3

### Curriculum Notes

- 155 Hours (145 required; 10 elective/optional)
- Revised: 2005, Second Edition
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).

PAPERBACK	ISBN
Trainee Guide: \$94	<b>978-0-13-109868-8</b>
Instructor's Guide: \$94	<b>978-0-13-109870-1</b>

### Product Supplements

<b>PowerPoint® Presentation Slides</b> ISBN 978-0-13-602329-6	\$40
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### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

#### Load Charts (25 Hours)

Trainee \$19 ISBN 978-0-13-168282-5  
Instructor \$19 ISBN 978-0-13-168291-7  
(Module ID 21301-05) Discusses the importance of load charts and charts that apply to different configurations. Includes on-rubber, on-outrigger, jib, and deduction charts, as well as range diagrams and operational notes. Covers parts of line and capacity calculations.

#### Telescopic Boom Attachment Assembly and Disassembly (20 Hours)

Trainee \$19 ISBN 978-0-13-168283-2  
Instructor \$19 ISBN 978-0-13-168292-4  
(Module ID 21302-05) Covers the stowing and erection of the swing-away extension, A-frame jib, and auxiliary single-sheave boom head, as well as the assembly and removal of intermediate boom sections.



## Mobile Crane Operations Level 3 (continued)

### **Advanced Operational Techniques** (20 Hours)

Trainee \$19 ISBN 978-0-13-168284-9

Instructor \$19 ISBN 978-0-13-168293-1

(Module ID 21303-05) Covers multi-crane lifts, critical lifts, blind lifts, and demolition. Includes sections on how to use magnet and vacuum lifting devices and how to operate a mobile crane in cold weather.

### **Lift Planning** (20 Hours)

Trainee \$19 ISBN 978-0-13-168286-3

Instructor \$19 ISBN 978-0-13-168296-2

(Module ID 21304-05) Discusses lift plan implementation, including reference information, calculations, single- and multiple-crane lifting, critical lifts, and engineering considerations.

### **Hoisting Personnel** (20 Hours)

Trainee \$19 ISBN 978-0-13-168288-7

Instructor \$19 ISBN 978-0-13-168297-9

(Module ID 21305-05) Examines *ASME B30.23* and *29 CFR 1926.550(g)* requirements while presenting advanced operation techniques for hoisting personnel.

### **Lattice Boom Assembly and Disassembly**

(25 Hours)

Trainee \$19 ISBN 978-0-13-168289-4

Instructor \$19 ISBN 978-0-13-168298-6

(Module ID 21306-05) Provides a step-by-step look at short- and long-lattice boom assembly and disassembly.

### **Emergency Procedures** (15 Hours)

Trainee \$19 ISBN 978-0-13-168285-6

Instructor \$19 ISBN 978-0-13-168294-8

(Module ID 21307-05) Includes information on accident prevention and investigation, the hazards of power line contact, and failures that may occur during lifting operations.

### **Transporting Requirements** (10 Elective Hours)

Trainee \$19 ISBN 978-0-13-168290-0

Instructor \$19 ISBN 978-0-13-168299-3

(Module ID 21308-05) Discusses the proper handling, loading and unloading, and securing procedures for mobile cranes and their components. Presents information on driver requirements and requirements for securing the mobile crane for transporting.