



CCO

CANDIDATE HANDBOOK

- **LIFT DIRECTOR—MOBILE CRANES**
- **LIFT DIRECTOR—TOWER CRANES**

®



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Certification Policies

LIFT DIRECTOR

ELIGIBILITY

To be eligible for certification, candidates must:

- Be at least 18 years of age
- Pass written examination(s)
- Comply with CCO’s Substance Abuse Policy
- Comply with CCO's Code of Ethics

EXAMINATION FEES

For all exam and related fees, visit www.nccco.org/fees.

CCO WRITTEN EXAMINATIONS

The Lift Director Written Examination consists of a Core Examination and Specialty Examinations for the Lift Director—Mobile Cranes and Lift Director—Tower Cranes certifications. Each candidate must also successfully pass the respective operator exam and/or the Rigger Level II exam; however, currently CCO-certified operators are not required to take the corresponding operator exam, as long as they maintain their certification status in good standing. Similarly, those who are certified as Rigger Level II do not need to take the Rigger Level II written exam.

The Core Lift Director Exam contains 40 questions that must be completed in 60 minutes. The Lift Director—Mobile Cranes Specialty Exam contains 15 questions that must be completed in 120 minutes. The Lift Director—

Tower Cranes Specialty Exam contains 15 questions that must be completed in 60 minutes.

The table below details the exams necessary for each Lift Director certification.

Length of Test Day

CCO policy permits candidates to take written exams totaling up to 5.5 hours of test time for written exams at a single test administration. Candidates needing to take written exams totaling over 5.5 hours will need to schedule multiple test administrations.

CCO PRACTICAL EXAMINATIONS

The practical exam component of the lift director certification is incorporated in the written specialty exams through the use of scenario-based questions using custom-designed lift plans and crane load charts. These real-world scenarios test crane lift directors’ abilities to read, understand, and interpret documents commonly seen in the field.

CCO CERTIFICATION TIME FRAMES

CCO Lift Director certification is valid for five years. Candidates have 24 months after they pass their first exam to pass the remaining corresponding exam(s). For example, a candidate passing the Lift Director Core Exam in Decem-

IF YOU ARE SEEKING CERTIFICATION FOR:	TAKE THE CORRESPONDING WRITTEN EXAMS*:	
	LIFT DIRECTOR EXAMS	OPERATOR & RIGGER EXAMS**
Lift Director—Mobile Cranes	<ul style="list-style-type: none"> • Lift Director Core • Lift Director Mobile Crane Specialty 	<ul style="list-style-type: none"> • Mobile Crane Operator Core • Mobile Crane Operator Specialty TLL or TSS • Mobile Crane Operator Specialty LAT • Rigger Level II
Lift Director—Tower Cranes	<ul style="list-style-type: none"> • Lift Director Core • Lift Director Tower Crane Specialty 	<ul style="list-style-type: none"> • Tower Crane Operator • Rigger Level II
Lift Director—Mobile Cranes AND Lift Director—Tower Cranes	<ul style="list-style-type: none"> • Lift Director Core • Lift Director Mobile Crane Specialty • Lift Director Tower Crane Specialty 	<ul style="list-style-type: none"> • Mobile Crane Operator Core • Mobile Crane Operator Specialty TLL or TSS • Mobile Crane Operator Specialty LAT • Tower Crane Operator • Rigger Level II

* No practical exams are required for Lift Director certification.

**If you are currently CCO-certified as a mobile crane operator, you are not required to retake the Mobile Crane Operator Core and corresponding Specialty written exams. CCO-certified tower crane operators are not required to take the Tower Crane Operator written exam. CCO-certified Level II Riggers are not required to take the Rigger Level II written exam.

ber 2024 has until the end of December 2026 to pass the Lift Director—Mobile Cranes Specialty Exam.

If a certified Lift Director—Mobile Cranes subsequently becomes certified as a Lift Director—Tower Cranes, the five-year certification period for Lift Director—Tower Cranes begins at the same time as he/she was originally certified (i.e., certifications for all Lift Director designations expire on the same date, regardless of when in the five-year certification period the candidate passed them). If the new designation is added within the final 24 months of his/her certification period, the certificant is exempt from recertifying for the new designation after five years; after that, however, certificants must recertify for all designations during the 12 months prior to their certifications' expiration date. This ensures that all of the certificant's Lift Director designations maintain the same expiration date.

RECERTIFICATION REQUIREMENTS

CCO certification is valid for five years. *Recertification candidates must complete all requirements during the 12 months prior to their certification's expiration date. There is no grace period after their certification expires.* Regardless of the date of the exams within that one-year period, the new five-year certification period begins from the date of expiration of the candidate's initial certification.

Recertificants must:

- Pass the applicable written examination(s)
 - Lift Director—Mobile Crane Written Exam *and* Mobile Crane Operator Core Written Exam
 - Lift Director—Tower Crane Written Exam *and* Tower Crane Operator Written Exam
- Comply with CCO's Substance Abuse Policy
- Comply with CCO's Code of Ethics

Currently CCO-certified operators (TLL, TSS, LAT, or TWR) are not required to take the corresponding operator written exam(s) as long as they maintain their certification status in good standing. Lift Director recertification candidates who are not currently CCO-certified in the corresponding operator category(ies) are required to take and pass the corresponding operator written exam(s) at recertification.

To add an additional Lift Director specialty, see the table on page 2 for which operator exams are required to add a Lift Director specialty (e.g., if adding Lift Director Mobile Crane specialty to Lift Director Tower Crane certification, candidates must take and pass the Mobile Crane Operator Core Exam and two Specialty Exams, TLL or TSS and LBC or LBT). The Rigger Level II written exam is not required for either recertification or adding a Lift Director specialty.

NOTE: Candidates who recertify more than 12 months prior to their expiration date will have their new certification period begin immediately, not from the end of their current certification period.

CERTIFICATION CARDS

Certified operators receive a laminated photo ID card at no cost when they certify. CCO certification cards feature a unique QR code for each certificant that links directly to their certification record in the Verify CCO Online (VCO) system. Those needing to verify current certification status can scan the QR code to access the candidate's record, or they can go to www.verifycco.org and manually enter the candidate's CCO ID number.

IF YOU ARE SEEKING RECERTIFICATION FOR:	TAKE THE CORRESPONDING WRITTEN EXAMS:	
	LIFT DIRECTOR EXAMS	OPERATOR EXAMS*
Lift Director—Mobile Cranes	• Lift Director Mobile Crane	• Mobile Crane Operator Core
Lift Director—Tower Cranes	• Lift Director Tower Crane	• Tower Crane Operator

**Currently CCO-certified mobile crane operators are not required to retake the Mobile Crane Operator Written Core Exam for recertification. Currently CCO-certified tower crane operators are not required to retake the Tower Crane Operator Written Exam for recertification. Current Lift Director certificants are not required to retake the Rigger Level II exam for recertification.*



Written Examination Outline

LIFT DIRECTOR—CORE EXAMINATION

40 QUESTIONS/60 MINUTES (CALCULATOR NOT PERMITTED)

The Core examination portion of the CCO Lift Director Written Examination tests the following knowledge areas relating to mobile and tower cranes:

Domain 1: Site

- Approximately 20% of test

Domain 2: Roles, Responsibilities, and Qualifications

- Approximately 17.5% of test

Domain 3: Lifting Operations

- Approximately 20% of test

Domain 4: Lift Plans

- Approximately 5% of test

Domain 5: Rigging

- Approximately 25% of test

Domain 6: Signals

- Approximately 12.5% of test

DOMAIN 1: SITE

1. Know how to identify and address hazards related to ground/surface conditions during lifting operations, such as:
 - a. Subsurface (voids, tanks, utilities)
 - b. Ground conditions (slopes, drainage, soil type)
 - c. Traffic control
2. Know how to identify and address hazards related to site access/transportation, such as:
 - a. Clearance/obstructions
 - b. Slopes
 - c. Compaction
 - d. Ground bearing
 - e. Traffic control
3. Know how to determine appropriate matting/cribbing. Elements of concern include, but are not limited to:
 - a. Types
 - b. Materials
 - c. Sizing (PSI vs. PSF, mat size adjustment for ground condition)
4. Know how to identify and address hazards associated with power lines or transmitter/communication towers, such as:
 - a. Defined lift zone vs. non-defined lift zone
 - b. During operations (>350kV, <350kV, working closer than Table A)

c. During travel

d. Emergency procedures

5. Know how to identify and address environmental conditions that adversely affect lifting operations, such as:

a. Weather (wind, lightning, snow/ice/frost, rain, fog, extreme temperatures)

b. Lighting conditions (artificial or natural)

6. Know how to identify and address hazards associated with lifting operations, such as:

a. Taglines

b. Non-standard rigging (specialty lifting devices)

DOMAIN 2: ROLES, RESPONSIBILITIES, AND QUALIFICATIONS

1. Know the roles, responsibilities, and qualifications of personnel involved in the lifting operations, such as:
 - a. Lift director
 - b. Site supervisor
 - c. Crane operator (mobile, tower)
 - d. Crane owner
 - e. Crane user
 - f. Signalperson
 - g. Rigger
 - h. Controlling entity
 - i. Dedicated spotter

DOMAIN 3: LIFTING OPERATIONS

1. Know how to identify and address hazards associated with special lifting operations, such as:
 - a. Critical lifts
 - b. Personnel lifting
 - c. Multi-crane lifts
 - d. Multiple load line lifts
 - e. Pick and carry
 - f. Assembly/disassembly
 - g. Lifting on, from or to water (e.g., barges, trestles, docks, launching)
 - h. Duty cycle operations
 - i. Demolition
2. Know and understand the requirements for communications during lifting operations

DOMAIN 4: LIFT PLANS

1. Know when and how to conduct pre-lift meetings
2. Know how to read, interpret, and communicate lift plans
3. Know how to recognize and address deviations from the lift plan prior to or during a lift, including items such as:
 - a. Site / environmental (tail swing, clearance to structures)
 - b. Crane configuration/location
 - c. Personnel
 - d. Load
 - e. Rigging
4. Know how to plan for contingencies (i.e., emergency lay down, shutdown, securing, personnel rescue)

DOMAIN 5: RIGGING

1. Understand inspection standards and regulations
2. Understand non-inspection standards and regulations
3. Know the proper application of rigging
4. Know how to select the proper rigging equipment

DOMAIN 6: SIGNALS

1. Know standard method signals for:
 - a. Hand signals
 - b. Voice signals
 - c. New signals
2. Understand crane dynamic principles and limitations
3. Know signaling regulations and requirements
4. Know how to determine safe load paths and movements

For operator and rigger exam outlines, refer to the appropriate candidate handbooks available at nccco.org/handbooks-forms.



Written Examination Outline

**LIFT DIRECTOR MOBILE CRANES SPECIALTY EXAM:
15 QUESTIONS/120 MINUTES (CALCULATOR PERMITTED)**

**LIFT DIRECTOR TOWER CRANES SPECIALTY EXAM:
15 QUESTIONS/60 MINUTES (CALCULATOR PERMITTED)**

The lift scenario questions found on the Lift Director Specialty Exams are designed to evaluate a candidate's ability to comprehend the presented information and apply knowledge of lift planning and directing in circumstances that may be found in real life situations. During the exam administration, candidates will be provided a supplementary booklet that includes simulated lift plans intended to replicate real work conditions. These documents will be used to answer a series of scenario-based questions relating to the information on the plans.

As in actual work conditions, lift plans are made and approved using the best information available to those drafting those plans. However, actual site conditions are constantly changing, or mistakes may have been made during the initial design process and upon arrival at a site, a lift director often must make adjustments based on actual site conditions. Many of the lift scenario questions contained within the exam are specifically designed to test a candidate's ability to understand and adjust to these changing circumstances.

The Lift Director Specialty Exams contain questions related to standard load chart usage, as well as questions using single-crane and multiple-crane lift plans. Many of the questions require the use of one or more load charts, and it is recommended that candidates become familiar with the charts prior to taking the examinations.

The Lift Director—Mobile Cranes Specialty Exam uses the following load charts:

- Grove (Rough Terrain) TLL
- Manitowoc LBC

The Lift Director—Tower Cranes Specialty Exam uses the following load charts:

- Tower Crane (Hammerhead) Chart D
- Tower Crane (Luffing Boom) Chart F

These load charts can be viewed and downloaded as PDFs from the Lift Director Load Charts page on the CCO website (nccco.org/LDloadcharts).

The content domains in the outline for the Specialty Exams represent the knowledge areas that are generally relevant to load chart usage or lift planning. However, no specific percentage breakdown for the individual content domains has been generated, since multiple knowledge areas may be addressed in a single question.

Each Specialty Exam includes 15 multiple-choice questions broken down into three sections, each having five different scenarios:

- Load Chart Interpretations and Calculations (5 questions)
- Single-Crane Lift Plan (5 questions)
- Multi-Crane Lift Plan (5 questions)

LOAD CHARTS

1. Know how to read and interpret load charts for mobile and tower cranes, including how to:
 - a. Determine net capacity with a given configuration (including limiting factors)
 - b. Determine maximum/minimum radius using a known load weight
 - c. Determine crane configuration to optimize lifting capacity
 - d. Calculate and apply percentage of rated capacity used

LIFT PLANS

1. Apply knowledge of requirements for single crane and multi-crane lifts, including:
 - a. Critical lifts
 - b. Pick and carry operations
 - c. Duty cycle operations
 - d. On rubber lifts
 - e. Personnel lifting
2. Apply knowledge of site factors which may affect lift plans and operations, including:
 - a. Obstructions and clearances
 - b. Ground conditions
 - c. Environment/weather
 - d. Power lines
 - e. Site controls (e.g. pedestrians, vehicle traffic)
3. Apply knowledge of crane factors which may affect lift plans and operations, including:
 - a. Crane set-up (e.g. placement, outrigger spread, blocking/cribbing)
 - b. Crane configuration

4. Apply knowledge of personnel requirements which may affect lift plans and operations, including:
 - a. Qualifications and responsibilities
 - b. Communications
 - c. Traffic controls
 - d. Placement of personnel
5. Apply knowledge of factors which may affect lift plans and operations, including:
 - a. Load weight
 - b. Unusually shaped loads
 - c. Use of taglines
 - d. Load paths and movements
 - e. Load elevation and placement
6. Know how to recognize and address deviations from the lift plan prior to or during the lift.
7. Know how to plan for contingencies (e.g. emergency lay down, shutdown, securing, personnel rescue)



Reference List

LIFT DIRECTOR

The latest versions of the following reference materials are used by CCO's Lift Director Exam Management Committee to verify the accuracy of CCO test questions.

OSHA References

1. OSHA 1926 Subpart CC – Cranes and Derricks in Construction
2. OSHA 1910.180 – Crawler Locomotive and Truck Cranes
3. OSHA 1910.184 – Slings
4. OSHA 1926.251 – Rigging Equipment for Material Handling

www.osha.gov

ASME References

1. ASME B30.3 – Tower Cranes (for Tower Specialty)
2. ASME B30.5 – Mobile and Locomotive Cranes (for Mobile Specialty)
3. ASME B30.9 – Slings
4. ASME B30.10 – Hooks
5. ASME B30.26 – Rigging Hardware

www.asme.org

For operator and rigger exam reference materials, refer to relevant candidate handbooks available at www.nccco.org/handbooks-forms.



CCO Policies

MOBILE CRANE OPERATOR

Code of Ethics

www.nccco.org/coe

Disciplinary Policy

www.nccco.org/discipline

Substance Abuse Policy

www.nccco.org/abuse

Testing Accommodations

www.nccco.org/accommodations

Test Security

www.nccco.org/security

Information Release Policy

www.nccco.org/inforelease



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