

Carpenters International Certification Council

**Certified
Rigger & Signaler
(CRS)**

**Candidate
Information
Brochure**

UNITED BROTHERHOOD OF CARPENTERS
INTERNATIONAL TRAINING CENTER

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Carpenters International Certification Council

The Carpenters International Certification Council (CICC) is an independent entity created to oversee and manage all activities and operations related to certification programs for UBC members. The mission of the CICC is to improve performance, reduce workplace risk, and safeguard personnel by ensuring that only trained, skilled and qualified individuals complete the work. As part of this mission, the CICC has developed the Certified Rigger and Signaler (CRS) credential. The purpose of credentialing Rigging and Signaling personnel is to provide the public, contractors, and coworkers with confidence in the quality of the deliverables and the safety of the practices being employed. You can contact the CICC by emailing CICC@carpenters.org. You can learn more about the certification program by visiting the following website: www.UBCCertifications.org.

The CICC is composed of at least four (4) members.

The objectives of the CICC are to:

1. Establish certification programs designed to improve and enhance the skills of UBC members to meet the needs of the construction industry in Canada and the United States.
2. Maintain a systematic review of certification programs.
3. Modify or revise certification programs as warranted.
4. Review and act on disciplinary issues that may result in removal of certification.
5. Review and act on all candidate appeals.

Certified Rigger and Signaler Program

The CICC offers a certification and the CRS designation to those candidates who meet the ANSI Safety Requirements for Rigging Qualifications and Responsibilities in the Construction Industry and OSHA 1926 Subpart CC – Cranes and Derricks in Construction.

The eligibility requirements and test materials for the CRS certification program were developed based on a thorough practice analysis validation study of the scope of practice and current state of knowledge and skills required in the rigging and signaling trade. A practice analysis survey of UBC member riggers and signalers from across the United States and Canada was conducted in 2011 to define the scope of practice and determine the appropriate content areas for the CRS tests. The questionnaire was designed to identify the knowledge and skills necessary to complete the day-to-day tasks of rigging and signaling trade professionals.

A representative group of rigging and signaling experts reviewed the data derived from the questionnaire. They identified the scope of practice for riggers and signalers based on these data, thus ensuring that the content of the CRS exams reflects the day-to-day practice of riggers and signalers in the United States and Canada. The results of the validation study were organized into a comprehensive examination plan, including three knowledge dimensions and eight sub-dimensions that can be found on page six (6) of this document.

The CRS written examinations are created by test development psychometricians in close

concert with a panel of rigging and signaling experts who write and review all examination questions. Every question is also reviewed by a psychometrician, a trained expert in examination writing, prior to being selected for a written examination. Questions are selected for examinations on the basis of the content areas defined by the validated examination plan mentioned above.

After the written test has been administered to a sufficient number of candidates, the examination questions are analyzed statistically to identify any hidden flaws. Questions that appear to be flawed are discussed by CICC rigging and signaling experts to determine if credit should be given for more than one answer. After these issues are resolved, the test is scored.

The test question pool for the CRS certification program is updated on a regular basis to reflect current practices in rigging and signaling. Individual questions that have been shown by statistical analysis to be unclear or unfair are modified or deleted from the pool of examination questions.

The CRS certification written examinations have been designed to meet testing industry standards for validity and reliability. Validity is the degree to which the content of the test reflects the knowledge required to perform the duties of a rigger and signaler in a competent manner. Reliability is the consistency of the test results, i.e., the degree to which the test results are free from error.

The CRS practical examinations are developed as fair and objective assessments of the essential skills a CRS needs to safely work in rigging operations. The examinations are developed with rigging and signaling experts from various specialty areas (i.e., carpenters, millwrights, pile drivers) from across the United States and Canada.

The CICC worked closely with test development psychometricians to guide all CRS program activities. Test development psychometricians guided the CICC in establishing key elements of the program, including identifying essential knowledge and skills and linking those to rigging and signaling tasks, standardizing test conditions for the written and practical exam administrations, developing the scoring process, establishing consistency across test forms, and creating secure test administration procedures.

Certified Rigger and Signaler (CRS) designees are skilled in multiple areas including the following:

1. Inspects hardware, slings, and rigging equipment
2. Selects the proper hardware for hoisting operations (e.g., takes into account the effect of friction on synthetic slings or hardware)
3. Accounts for the effect of the configuration on the sling stress
4. Performs proper hardware installation and attachment techniques
5. Communicates movements to crane operator using the appropriate voice or hand signals
6. Takes into account the effect of voice or hand signals on the load and the crane
7. Recognizes hazards (e.g., extreme angles, pinch points, criteria for critical hoist)
8. Adjusts for the gross weight of the load in hoisting operations
9. Determines the load weight and center of gravity of symmetrical loads accurately
10. Takes into account how shifting centers of gravity affect load stability
11. Identifies proper attachment points based on center of gravity and hitch configuration
12. Determines types of knot to use based on material and application

Certification holders may state that they are Certified Riggers and Signalers and may use the CRS designation to market credentials on business cards, resumes, etc.

Additionally, each CRS receives a certificate and their credentials are posted on a wallet-sized verification card. The verification card has a Quick Response (QR) code that links to an electronic database of certification and qualification records. The certificates and electronic records contain the name, date of expiration, and the unique membership identification number of every individual who has successfully completed the CRS assessments.

Certification Eligibility and Approval

To become a CRS, a candidate must be a UBC member and must successfully complete a knowledge-based written examination and a hands-on practical skills assessment. By passing these examinations, a candidate demonstrates competency in the knowledge and skills required to perform safely and effectively as a CRS.

Prerequisites

In order to qualify to sit for the CRS assessments, a candidate must first attend at least 29 hours of training that includes both knowledge transfer and practical safe application. Course content must be designed to add to the hands-on experience gained in the field using rigging techniques and hardware.

The course must include information about safety, wire rope, chain construction, slings, hardware, and knot-tying techniques. Additionally, the training must address rigging procedures, including common hitch configurations, hardware and sling attachments, working with different types of cranes, and directing crane movements with hand and voice signals used by riggers to signal crane operators.

The training must also include important safety precautions and practices as they apply to each activity. In any rigging operation, safety is of maximum importance. All riggers and operators on the jobsite are responsible for their own safety as well as the safety of others. Safety considerations include proper inspection and upkeep of rigging hardware and equipment. It is imperative that the training include detailed instructions on how to properly inspect (i.e., check for damage) and care for rigging equipment to ensure a long service life. There are many approved training providers; it is the candidate's responsibility to find the provider that fulfills the requirements of the CRS program.

Certification Application and Exam Registration Instructions

If you are a member

Contact your local center to schedule a session for the next certification administration date.

If you are not a member

Only UBC members are eligible for the CRS program. Contact the nearest UBC local union to join.

Materials to Bring

When reporting for the exam, candidates must present one (1) form of government-issued photo identification (e.g., Driver's License, State ID, Canadian ID, Military ID, or Passport) in order to sit for the exam. The government-issued photo identification must contain the candidate's date of birth.

Candidates should also bring work clothes, gloves, work boots, hard hat, paper, pencil, and a standard calculator (that includes a square root function) to the assessment.

Candidates cannot have access to electronic equipment in the testing room other than a standard calculator. Calculators may not have a QWERTY keyboard, camera, or access to the internet. Cell phones, laptop computers, notebooks/tablets and other electronic equipment cannot be used as a calculator.

Certification Renewal & Continuing Education

The CRS certification is valid for four years from the last day of the month that the certification was granted. Within one year of the certification expiration date, a CRS must document an additional 13 hours of training and pass a written test to renew their certification. The additional training must include information about safety, wire rope, chain construction, slings, hardware, knot-tying techniques, as well as rigging procedures, including common hitch configurations, hardware and sling attachments, working with different types of cranes, and directing crane movements with hand and voice signals used by riggers to signal crane operators.

If renewal is not completed within one year of the certification expiration date, candidates are not eligible to renew and must start the program from the beginning.

Security of Certification Records

All CRS candidates are recorded in a password-protected database under the UBC member's unique eight-digit membership ID number. Access to the records system is controlled. Only the CICC and certification program administrators can modify the records of CRS recipients.

CRS Examination Content

Written Examination

Candidates are provided three hours to complete the written examination. The content of the examination follows the plan (detailed below), which was derived from an in-depth practice analysis validation effort that was completed in 2012.

The written examination has a total of 120 questions, which includes 20 experimental items throughout. These experimental items do not count against a candidate's exam score and are included to collect information on questions that may be incorporated into future test forms.

The table on the next page provides a detailed overview of the number of questions included on the examination for each test domain.

Dimension & Sub-Dimension	Number of Items on Exam
Rigging & Equipment Components	
Inspection	15
Selection	30
Rigging Procedures	
Hitch Configuration	14
Application	14
Signaling	7
Rigging Safety	
Critical Hoist/Planning	5
Site Awareness/ Personnel Safety	10
Load Stability	5
TOTAL	100

Practical Assessment

The assessment involves hands-on job simulation activities and is divided into the following three parts:

1. Making a hoist of the rigging prop using a three-point asymmetrical hitch using voice signals
2. Making a hoist of the rigging prop using a three-point asymmetrical hitch and transferring hand signals between two signalers and the crane operator
3. Making a one-point rollover hoist of the rigging prop using hand signals

This practical skills assessment simulates real-life situations in rigging and signaling. The rationales for including each assessment are provided below.

Voice Signals – Asymmetrical Hitch with a Live Leg

This evaluation represents lifting an object that has an offset center of gravity. To successfully complete this assessment, the

candidate must attach and adjust the required hardware to lift the prop so that it remains level. Using the proper voice signals, the candidate will direct the crane operator to lift the prop and relocate the prop at a specified location while maintaining control, level, and elevation of the prop during the hoist.

Transferring Hand Signals – Making a Three-Point Hoist of the Rigging Prop: Hand Signals with Two Signalers

This evaluation represents lifting an object when the crane operator cannot see the designated signal person and requires a transfer signaler. The designated signaler must use hand signals to signal a transfer signaler, and the transfer signaler must transfer the hand signals to the operator.

Hand Signals – Making a One-Point Rollover Hoist of the Rigging Prop

This is the method used to lift long objects and change the orientation of their long axis from horizontal to vertical and return to horizontal from vertical. This hands-on evaluation requires the candidate to use hand signals to direct the operation of hoisting the rigging prop from a horizontal plane to a vertical plane, and return to a horizontal plane.

Development of the Written and Practical Assessment

The design and administration of the examination meets the most rigorous test validation and development standards for certification programs. Activities and meetings were conducted to provide an examination and scoring process that meets the requirements set forth by the National Commission for Certifying Agencies (NCCA)

Standards for the Accreditation of Certification Programs (ICE, 2005). Examination questions for the Rigger and Signaler certification program were written to target the required information listed in the ANSI A10.42 -2000 (R2010) and OSHA 29 CFR 1926 Section CC Standards to ensure that assessments are consistent with the published purpose of the certification. The examination has been designed based on the evaluations of expert riggers and signalers regarding the most important parts of the profession. There are specific links from the ANSI standards to the written and practical examinations.

Preparing for the Examination

The following reference list provides suggested materials that could assist you in preparing for the examination. This is not an open book examination; candidates are not allowed to bring reference materials into the test administration site.

1. Bob's Rigging and Crane Handbook
2. Construction Safety Rigging Manual of Ontario
3. IPT Crane and Rigging Manual
4. OSHA 1926 Construction Standards
5. UBC Rigging Training Manual

Alternate Test Forms

To maintain a high-quality, defensible certification program, new examination questions are continuously created such that each alternate form of the examination contains a subset of new items. Not only is this volume necessary to ensure the examinations contain high-caliber updated items, but it also ensures a sufficient number

of new items to avoid them being overexposed or compromised over time. In addition to upholding exam security, new items facilitate efforts toward statistically ensuring each examination pass point is set to be equally as difficult as any other examination form. Thus, your likelihood of passing any form of the examination is statistically identical even though the questions on the examination may change.

Cut Score or Passing Point

A cut score serves as a decision point in the certification standard-setting process. In essence, a cut score (or passing point) makes a pass-fail decision. Cut scores for the CRS exams are never determined in an arbitrary manner. Each item on the exam is analyzed through a rigorous process to determine the cut score for each exam. These predetermined cut scores screen out candidates who do not possess the required proficiency needed to perform effectively as a CRS. A cut score can be thought of as the interpretation of the standard of competence for the certification program.

Written Examination

With multiple test forms, it is not appropriate to set a specific pass point. For this reason, the pass point for each exam is changed statistically based on the difficulty of the questions on a test.

Specifically, the differences in exam difficulty among different administrations are calculated and then the pass points of the new examination forms are adjusted, so the same benchmark standard can be used for each exam. By accounting for differences in difficulty across examination forms, all candidates have a comparable opportunity to

pass the examination, regardless of when they take it.

For example, if the new examination is more difficult relative to previous examinations, the percent correct necessary to pass the exam will be lowered to equal the benchmark standard. On the other hand, if a new examination turns out to be easier, the percent correct necessary to pass will be increased to equal the benchmark standard. Candidates who do not meet the benchmark standard on the written examination will not achieve certification.

Practical Assessment

The hands-on practical skills assessment was developed to ensure objectivity of the criteria used to assess candidate performance and ensure consistency across evaluators. The materials used during administration of the assessment help reduce differences between evaluators.

The practical assessment includes 15 scoring units, comprised of 5-point components that range from 1 (Does Not Meet Expectations) to 5 (Exceeds Expectations). The validated standard for the practical assessment is scoring a minimum of 45 out of a possible 75 points that are captured across the three assessments of 1) voice signals – asymmetrical hitch with a live leg, 2) transferring hand signals - making a three-point hoist of the rigging prop: hand signals with two signalers, and 3) hand signals – making a one-point rollover hoist of the rigging prop.

Candidates who do not meet the 45-point standard for the practical assessment will not achieve certification.

Scheduling Procedures

Local centers maintain schedules for all offerings, and each individual center has their own cancellation policy.

Special Testing Accommodations

The Carpenters International Certification Council (CICC) complies with the Americans with Disabilities Act (ADA) of 1990 or other applicable disability discrimination laws. To ensure equal opportunities for all candidates, CICC will make reasonable testing accommodations for candidates when appropriate and consistent with such legal requirements. The CICC will consider requests for special testing accommodations related to the CRS exams from candidates who require such accommodations under applicable disability discrimination law (“accommodation”).

A physician or other qualified medical care professional who has made an individualized assessment related to the candidate’s request for an accommodation must provide the required information concerning the candidate’s requested accommodation. A qualified medical care professional is a licensed or otherwise properly-credentialed individual who possesses medical expertise for evaluating any requested accommodation. The information and any documentation that the candidate provides regarding the need for accommodation(s) will be treated as confidential.

The CICC requires that each candidate requesting a special testing accommodation complete and submit the form available online at www.ubccertifications.org by mail, fax, or email **at least 45 days** prior to testing. The Testing Accommodation Coordinator will send confirmation to the candidate that the request was received within five (5) business

days of receipt. The confirmation will include the latest date when the candidate will receive notification of a decision. The Testing Accommodation Coordinator will respond with a final decision via email not more than 30 days after receipt of the request. For reasons of confidentiality, information regarding the granting or denial of testing accommodations will not be released by telephone. All approved testing accommodation requests will be communicated to the Single Point of Contact at the test center and are valid only for the written test date and/or practical test date indicated on the request form

Forty-five (45) days advance notice is required for all testing accommodation requests.

Complaints, Disciplinary Policies and Appeals

When an accident occurs

Accidents and incidents perceived to be a result of negligence on the part of a CRS should be reported to the Carpenters International Certification Council (CICC), 6801 Placid Street, Las Vegas, NV 89119. The CICC Discipline/Ethics committee will review accident and incident reports to determine the appropriate action. In the event that a certificant is found to be at fault for the accident or incident, the CICC has the authority to void the certification.

Policy/Ethical Violations

In the event that a certified individual, or an individual attempting to obtain certification, violates CRS policy or ethics by engaging in dishonest activities or demonstrating a lack of integrity, misrepresents his/her identity or eligibility status, gives or receives unauthorized assistance on the exam, or engages in other violations of established

policies, the CICC has the authority to void the certification and/or to bar the individual from being certified through the CICC indefinitely.

Disciplinary Procedures

All accidents, incidents, and policy/ethical violations will be documented thoroughly and succinctly for the CICC Discipline/Ethics Review panel. The alleged violator will be provided with documentation stating they are under review and can provide a written statement for consideration by the Discipline/Ethics Review committee. The panel will then convene to hear all documented versions of what occurred - from the alleged violator, test proctor, witness(es), etc. The Discipline/Ethics Review panel will then review all materials and determine the necessary/appropriate action. Appropriate actions that the CICC is authorized to make include, but are not limited to, the following:

- No action required
- Require partial re-evaluation to maintain certification
- Require full re-evaluation to maintain certification
- Void certification or prevent future attempts at certification
- Bar individual from CICC certifications for a certain period of time
- Bar individual from CICC certifications indefinitely

Disciplinary Appeals

A hard-copy letter will be provided to the alleged violator outlining the CICC's action(s). The action of the CICC may be appealed by the CRS or the appellant by sending a letter to the CICC explaining why the action should be changed. The appeal letter can be sent via ground mail or email to CICC@carpenters.org or 6801 Placid Street, Las Vegas, NV 89119.

The CICC will review all appeal letters and research the candidate allegations. The CICC

will report its finding to the candidate in writing within 90 days of the date the candidate's letter is received by the CICC.

Other Appeals

Forms are available for appeals regarding the following situations: 1) eligibility status, 2) contesting content covered in the examinations or scoring disputes, or 3) certification status. If a candidate believes he or she has been falsely denied eligibility to sit for the assessments, believes a written exam question or practical exam task is unclear or has been scored in error, or believes his or her credentialing status has been falsely terminated, the candidate may request information regarding the appeal procedure and obtain the appropriate appeal form online at www.UBCCertifications.org or by contacting the CICC at CICC@carpenters.org or 6801 Placid Street, Las Vegas, NV 89119.

Re-taking the Certification Examination

When a member does not meet the written examination requirements, he/she may retake the test at any time after 30 days from the date of the failed test. There is no waiting period to re-take the practical test.