

# Hoisting & Rigging

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy  
under Contract DE-AC06-09RL14728



**P.O. Box 650  
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Mission Support Alliance

Date Published  
October 2016

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**APPROVED**

*By Janis D. Aardal at 10:24 am, Oct 15, 2015*

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Release Approval

Date

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# TRAINING PROGRAM DESCRIPTION

## TPD-0016

# HOISTING & RIGGING

Revision 25

Release Date: October 6, 2015

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HOISTING & RIGGING

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**HOISTING & RIGGING****Revision Status**

Rev No.	Description
Rev. 21	Updated Training Program Description.
Rev. 22	Added requirement for On-the-job Training documentation; clarified requirements for mobile crane inspection and maintenance personnel; added information for Below-the-Hook Lifting Device Operator training.
Rev. 23	Added training requirements for forklift spotters, Mobile Crane Assembly/Disassembly Director, and Mobile Crane Authorized Workers; clarified training requirement for Mobile Crane Inspection and Maintenance; clarified requirement for mobile crane spotter; and implemented requirement for mobile crane operator certification.
Rev. 24	Changed the filing requirements for the Forklift Attachments OJE forms. Removed the Equipment custodian requirement for Mobile Crane Assembly/Disassembly Directors, added clarification for mobile crane spotter and signaler qualifications, removed NCCCO as the only nationally recognized accrediting agency, removed the Fire extinguisher training requirements and added Appendix C; Hoisting and rigging site forms list
Rev. 25	Added a third Rigging OJE (sec 4.15) to accommodate those who rig loads to Mobile Equipment.  Added Load Chart & Load Moment Indicators course (042327) as a requirements for mobile crane maintenance personnel in Section 4.10 Mobile Crane Inspection and Maintenance

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**HOISTING & RIGGING**

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**1.0 PURPOSE**

This document implements requirements for the Hanford Site Hoisting and Rigging (H&R) Training Program. The program implements the training requirements contained in the source documents listed in Section 6.0.

**2.0 SCOPE**

The H&R Training Program Description (TPD) applies to Mission Support Alliance employees and its subcontractors whose assignments include performance of hoisting and rigging activities identified in DOE-RL-92-36, *Hanford Site Hoisting & Rigging Manual* (H&R Manual). This TPD also applies to those Hanford Site contractors and their subcontractors that have signed concurrence with the H&R training requirements contained in this document.

**3.0 RESPONSIBILITIES****3.1 DIRECTOR, HAMMER/HANFORD TRAINING**

The Director of HAMMER/Hanford Training is responsible for ensuring:

- Training is designed and developed using a performance-based, graded systematic approach.
- Formal site-wide training is implemented in accordance with current hoisting and rigging training standards and regulatory drivers.
- Training materials are approved prior to implementation.
- Evaluations of training activities and instructors are performed as needed, and feedback from these evaluations is used to improve training.
- Auditable copies of training documentation are maintained by Training Records.

**3.2 HANFORD CONTRACTOR TRAINING MANAGERS**

Hanford Contractor Training Managers signatory to this document are responsible for reviewing, validating, and processing training equivalency documentation for hoisting and rigging training.

**3.3 MANAGERS**

Managers of hoisting and rigging activities are responsible for:

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- Ensuring employee's training identified in the H&R TPD is completed prior to operation or assignment of activities involving forklifts, hoists & cranes, or hoisting and rigging equipment.
- Ensuring qualified personnel maintain the required proficiency for their assigned tasks.
- Ensuring On-The-Job Training (OJT) and On-The-Job Evaluations (OJE) are conducted by individuals qualified in accordance with this TPD.
- Determining if personnel who have not performed work or operated equipment for which they were trained and qualified for 12 continuous months need to be re-evaluated.

**4.0 TRAINING REQUIREMENTS****4.1 GENERAL TRAINING PROCESS**

Qualification training activities may include:

- Classroom instruction or computer based training
- Written examinations
- On-The-Job Training (OJT)
- On-The-Job Evaluation (OJE).

**4.1.1 Equivalencies for Previous Training or Experience**

Documented evidence of previous training or experience may be accepted to meet training requirements. Previous training or experience may include:

- a. Certificates of training from a vendor or equipment manufacturer where the training has been reviewed and determined to meet the training requirements of the H&R Manual
- b. Completion of an applicable trade union training program
- c. Journeyman status in an applicable trade
- d. A degree or accreditation from a college or trade school.

Equivalencies for previous training or experience will not be granted for Basic Crane & Rigging Safety (040784) or OJEs. A challenge exam is available for the Basic Crane & Rigging Safety course.

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A list of approved equivalencies is provided in Appendix A.

#### 4.1.2 Qualification

Personnel shall be considered qualified when they:

- a. Complete the training course(s) prescribed by this document; or meet the requirements of previous training or experience; or pass a written examination (challenge exam) of the knowledge requirements for the applicable activity identified in the H&R Manual.
- b. Complete OJT for the equipment/activity.
- c. Successfully complete the equipment/activity specific OJE/oral test listed in this document; or, for non-operator or rigger qualification, pass a written test.

All operators of mobile, locomotive, and cab- or pulpit-operated overhead cranes must also meet Physical Examination and Substance Abuse Testing requirements every 36 months, as identified in the H&R Manual, Chapter 4.0, Section 4.2.3.

#### 4.1.3 Requalification

Requalification shall consist of satisfactorily completing the training requirements for that activity or equipment as specified in the training activity sheet (TAS) for each course. Personnel shall be retrained when any of the following occurs:

- Acquisition of equipment with new operating characteristics
- Modification of existing equipment, changing the operating characteristics
- Personnel receive an unsatisfactory OJE
- Changes in standards or requirements that could affect safety
- Personnel are directly involved in a documented incident that compromises safety of personnel, equipment, or the environment in the performance of hoisting and rigging activities
- Personnel performance is determined to be unsatisfactory or diminished skill level is observed

**Note:** It is highly recommended that personnel be re-evaluated when they have not performed the work activity or operated the equipment for 12 continuous months.

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**4.1.4 Training Subjects**

The H&R Manual, Chapter 4.0, Personnel Qualifications and Training Requirements, Appendix A, contains a list of subjects, by qualification area, that should be included in the training process. Refer to the H&R Manual for detailed information. The course content will meet the requirements of applicable ASME or OSHA standards as a minimum. If two standards set forth inconsistent requirements, the standard containing the most stringent requirements shall be followed.

**4.1.5 Written Examinations**

Written examinations are used to document the employee's knowledge level of the subject matter and will have a minimum passing criterion of 80%.

Challenge examinations are available for some equipment and job assignments for individuals with previous experience or training. If an employee fails a challenge examination:

- a. The student will be informed upon failure to meet the passing standard.
- b. The student will be given the opportunity to review their graded examination.
- c. The student will be allowed to take a second, different, challenge examination at that time, or be rescheduled to complete the second challenge examination at a later time.
- d. If the student does not pass the second challenge examination or chooses not to perform the re-examination, the instructor will notify the training activity point of contact (POC), who then notifies the responsible manager and the student's company training manager to inform them of the student's status.
- e. The student will then be required to take the initial course for that equipment type or activity.

Web-based challenge examinations are available for some courses. Training managers can designate challenge examination proctors by completing site form A-6006-138, Hoisting and Rigging and Aerial Lift Challenge Exam Proctor Designation form. Instructions for proctoring web-based challenge examinations are located in Appendix B.

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**4.2 ON-THE-JOB TRAINING**

On-the-Job Training (OJT) provides instruction and practice under the direct supervision of a qualified operator, or a qualified H&R On-the-Job Evaluator, in an appropriate work environment, using standardized performance criteria. The OJT shall be based on the equipment manufacturer's operating instructions, typical tasks, operating environment, and facility or contractor-specific procedures.

- Hoisting equipment operators must meet the qualification requirements of this TPD.
- H&R On-the-Job Evaluators shall complete qualification requirements per section 4.3.1.
- The completion of OJT must be documented. Acceptable documentation includes one of the following:
  - OJT documentation identified by a course number and submitted to Training Records.
  - OJT documentation for which there is no course number and either retained with the employee's manager or supervisor or submitted with the applicable on-the-job evaluation documentation.
  - OJT documented as either "Completed" or "Previous experience assessed and determined adequate" whereby the employee and the employee's supervisor check and sign the appropriate block on the applicable On-the-Job Evaluation form.

**4.3 ON-THE-JOB EVALUATION**

On-the-Job Evaluations (OJE) are used to validate that personnel have the knowledge and skills to operate hoisting equipment safely, and perform the hoisting and rigging activities. Personnel must be evaluated for each type and class of equipment operated, or rigging activity performed. Personnel who pass an evaluation for a type and class of equipment are considered qualified on all equipment of the same type and class. The OJEs require a minimum passing score of 80%.

Site forms used to document the OJE contain instructions to be followed during the performance, grading, and disposition of the evaluation. Site Forms can be found on the Hanford Intranet at <http://apweb01.rl.gov/siteforms/>.

**4.3.1 On-the-Job Evaluators**

H&R On-the-job Evaluators qualify employees to perform hoisting and rigging activities by providing an objective assessment of an

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individual's ability to operate equipment or systems, or perform designated rigging activities. H&R On-the-job Evaluators shall be designated by management and complete both technical and instructional competencies.

*4.3.1.1 Technical Competencies*

The H&R On-the-job Evaluator's technical competencies consist of evidence to substantiate the evaluator's knowledge about the rigging application, systems or equipment (including all lifting devices and/or special equipment options) for which they will be providing on-the-job evaluations. Acceptable evidence includes one of the following:

- Completion of the initial classroom training
- Successful completion of a challenge examination
- Qualification on a class of equipment in the equipment type, or in a rigging application

In addition, H&R On-the-job Evaluators conducting evaluations on forklifts or mobile cranes shall complete Propane Bottle Change-out (044674).

*4.3.1.2 Instructional Competencies*

The On-the-job Evaluator's instructional competencies consist of evidence to substantiate knowledge about the processes of evaluating the performance of an OJE. Evidence includes completion of all three of the following activities:

- a. On-the-Job Trainer Fundamentals (000396), or equivalent
- b. On-the-Job Evaluator Fundamentals (000397), or equivalent
- c. H&R On-the-Job Evaluator Instruction Qualification (003909) is documented using site form A-6005-468.

**Note:** Instructional competencies are not required to be repeated for each equipment type or class.

*4.3.1.3 Maintaining H&R On-the-job Evaluator Qualification*

To maintain H&R On-the-job Evaluator qualification, employees must complete both instructional and technical proficiency at the prescribed frequencies listed on the respective training activity sheets.

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- Technical proficiency is maintained by completing one of the technical competencies listed in Section 4.3.1.1
- Instructional proficiency is maintained by completing H&R On-the-Job Evaluator Instruction Qualification (003909)

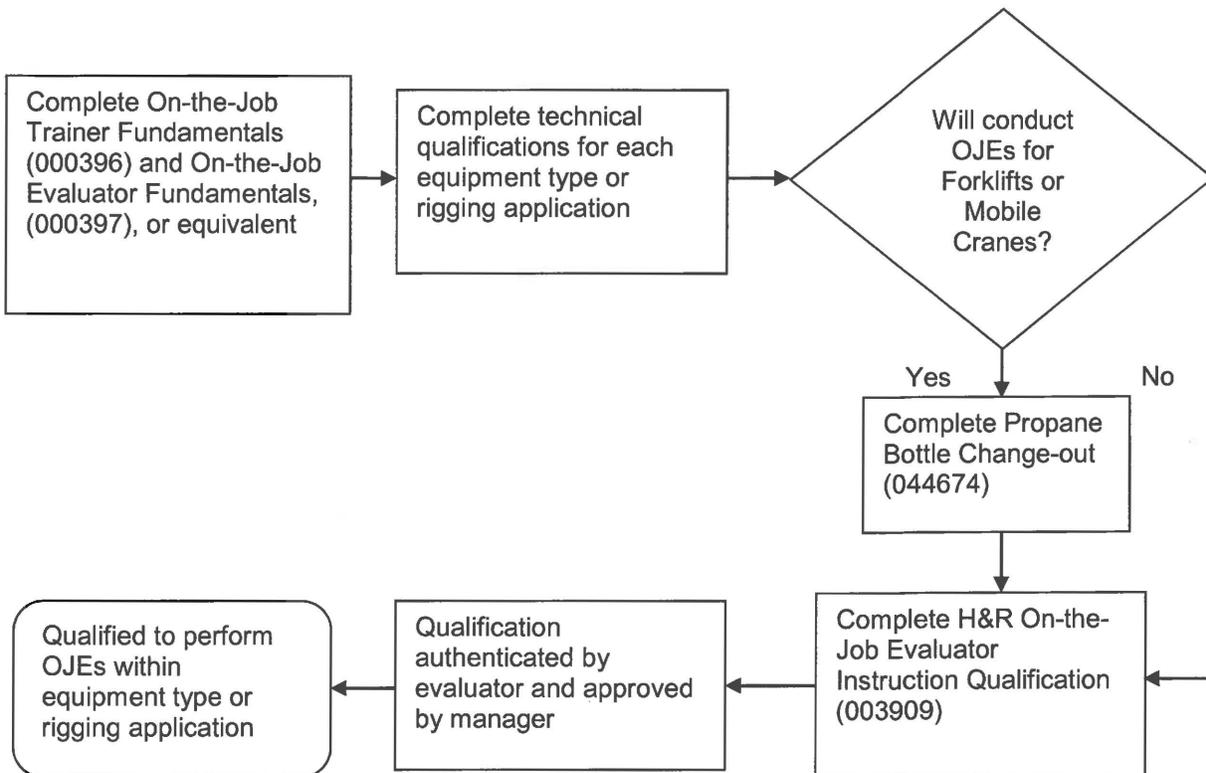


Figure 1: H&R On-the-Job Evaluator Qualification

#### 4.3.1.4 OJE Evaluator Qualification

H&R on-the-job evaluator qualification is authenticated by a qualified evaluator for the hoisting equipment type, or for the particular rigging activity, and approved by the employee's manager. HAMMER/Hanford Training has developed a report to aid in the verification of OJE Evaluator qualifications. The report is available at:

<http://wbt.rl.gov/admin/WET/hoistingRiggingOJEEvalForm.cfm>.

- Advanced Rigging
- Cab-Operated Overhead Cranes
- Floor-Operated Overhead Cranes

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- Forklifts
- Incidental Rigging
- Mobile Cranes
- Propane Bottle Change-out.

*4.3.1.5 Qualifications of Instructional Competency Evaluators*

Only personnel qualified as an H&R On-the-job Evaluator, per Section 4.3.1 of this TPD, may conduct evaluations of H&R On-the-job Evaluators performing an on-the-job evaluation.

**4.4 FORKLIFT OPERATORS**

The forklift operator qualification process requires the completion of classroom training, Forklift Operational Safety (044470) or the Forklift Operator Challenge Examination (041890). Upon successful completion of the classroom training, the individual shall be given OJT for each class of forklift the employee will operate. Where the operator and their supervisor/manager agree that the operator's previous forklift experience is sufficient, the operator can proceed to the OJE. This agreement is to be documented on the OJE form.

After the OJT has been completed, a qualified evaluator shall conduct an OJE. The evaluator shall document completion of the operator's OJE on the appropriate site forms per Table 1. Individuals assigned to operate multiple classes of forklifts shall complete and document an OJE for each class of forklift they will operate. Each completed on-the-job evaluation shall be signed by the employee and qualified evaluator, and forwarded to Training Records at MSIN G6-60.

Forklift operators maintain their qualification by completing an OJE on the class of forklift the employee is assigned to operate every 36 months. Operators that change out propane bottles on forklifts and On-the-job Evaluators for forklifts shall complete Propane Bottle Change-out (044674).

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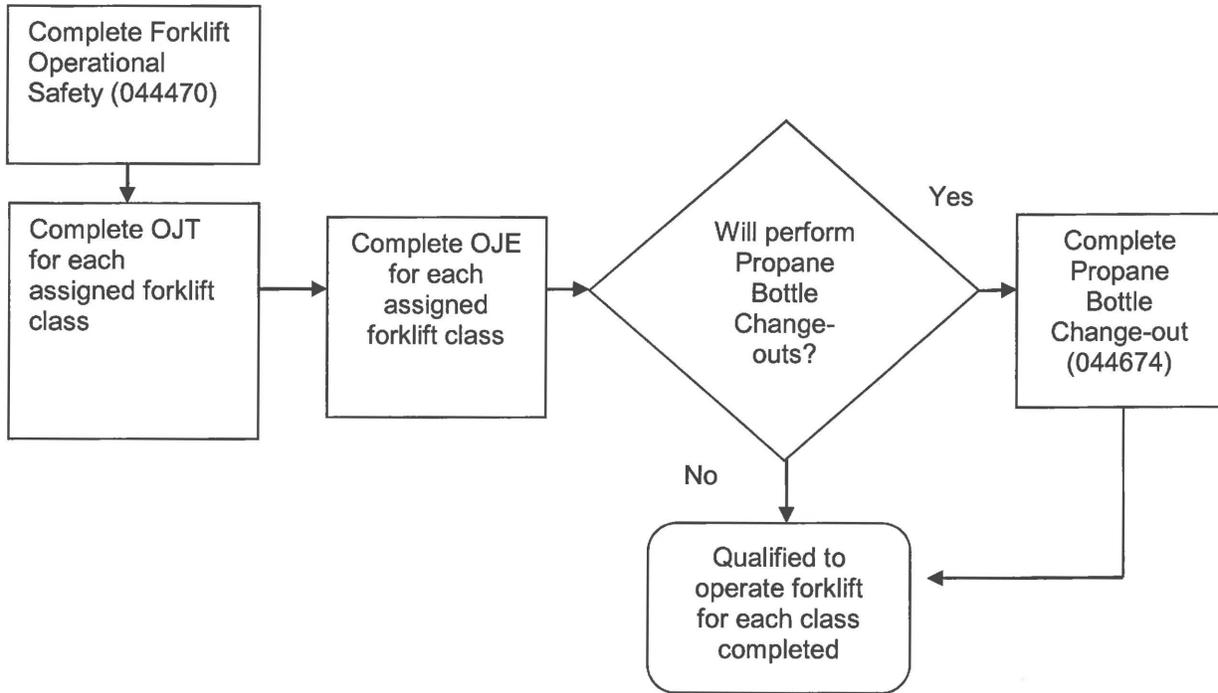


Figure 2: Forklift Qualification

Table 1: Forklift Operator OJE Site Forms

Forklift Operator Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
Class 1 & 2 Electric Counter Balance and Electric Narrow Aisle	044672	A-6002-764	A-6002-763
Class 3 Electric Hand Trucks	04467B		
Class 4, 5, & 7 Internal Combustion, Solid and Pneumatic Tires, and Rough Terrain, Straight Mast	044673		
Class 6 Tractor	04467E		
Class 8 Rough Terrain, Telescopic Boom	044676	A-6004-378	A-6004-379
Propane Bottle Change-out (As applicable)	044674	A-6002-954	A-6002-953

If the operator is required to utilize equipment attachments, a qualified forklift OJE evaluator shall document the evaluation on site form A-6004-380, Equipment Attachment – On-the-Job Evaluation Addendum. These forms shall be kept in a file that is retrievable.

**HOISTING & RIGGING****4.4.1 Forklift Spotters**

Spotters for forklift operations are required to be trained to recognize the hazards involved in the activity.

- Training for spotters working near electrical power lines is met with course 044605, Equipment Operation Near Power Lines.
- Training for spotters in all other forklift operations can be met with the web-based course 600078, CHPRC Vehicle Spotter Awareness Training, or equivalent.

**4.5 FORKLIFT INSPECTORS**

Forklift inspectors shall be qualified to perform documented periodic inspections of forklifts to determine if any damage, failure, deformation, or condition exists that could impair safe operation per the H&R Manual, applicable ASME, ANSI/ITSDF, NFPA, and OSHA standards. Qualification includes completing the forklift operator requirements of Section 4.4, Forklift Inspection (041885), and the applicable forklift OJE for each class of forklift to be inspected. See Table 1.

**4.6 FLOOR-OPERATED OVERHEAD CRANES**

Floor-operated overhead crane qualification requires the completion of Basic Crane & Rigging Safety (040784), or the Basic Crane & Rigging Safety Challenge Exam (040788). Upon successful completion, the individual may be given on-the-job training (OJT) on the class of floor-operated overhead crane and hoist the employee will operate. Management may allow previously qualified or experienced personnel to bypass the OJT and proceed to the OJE.

After completing the OJT, an OJE, conducted by a qualified evaluator, shall be completed. The evaluator shall document completion of the employee's OJE on the appropriate Site Forms per Table 2. Facilities can designate and use activity numbers 044691, 04469A, 04469B, or 04469C to track qualifications for specific facility floor-operated overhead cranes and hoists. Each facility or project may also have additional required forms.

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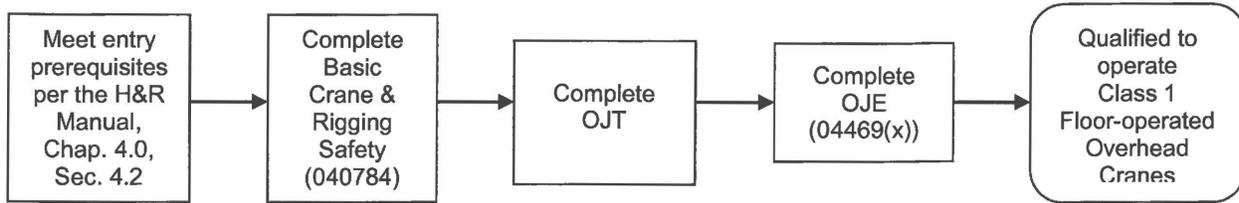


Figure 3: Floor-Operated Overhead Crane Qualification

Table 2: Class 1 Floor-Operated Overhead Crane OJE Site Forms

Floor-Operated Overhead Crane Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
Class 1 Floor-Operated Overhead Crane – General	044691	A-6002-752	A-6002-751
Class 1 Floor-Operated Overhead Crane Facility Specific - A	04469A		
Class 1 Floor-Operated Overhead Crane Facility Specific - B	04469B		
Class 1 Floor-Operated Overhead Crane Facility Specific - C	04469C		

Crane operators maintain their qualifications by completing an OJE on a floor-operated overhead crane or hoist every 60 months.

**4.7 CAB-OPERATED OVERHEAD CRANES**

Prospective cab-operated overhead crane operators must pass a physical examination per the H&R Manual prior to pursuing qualifications as a cab-operated overhead crane operator. Cab-operated overhead crane qualification requires the completion of Basic Crane & Rigging Safety (040784). Upon successful completion of the classroom training and examination, the individual may be given on-the-job training (OJT) conducted at the project or facility on the cab-operated overhead crane the employee will operate. Management may allow previously qualified or experienced personnel to bypass the OJT and proceed to an OJE.

After the completing OJT, an OJE, conducted by a qualified evaluator, shall be completed. The evaluator shall document completion of the employee’s OJE (044701) for Class 2 Cab-Operated Crane/Hoist on the appropriate site forms per Table 3. Each completed on-the-job evaluation shall be signed by the employee and the qualified evaluator, and then forwarded to Training Records.

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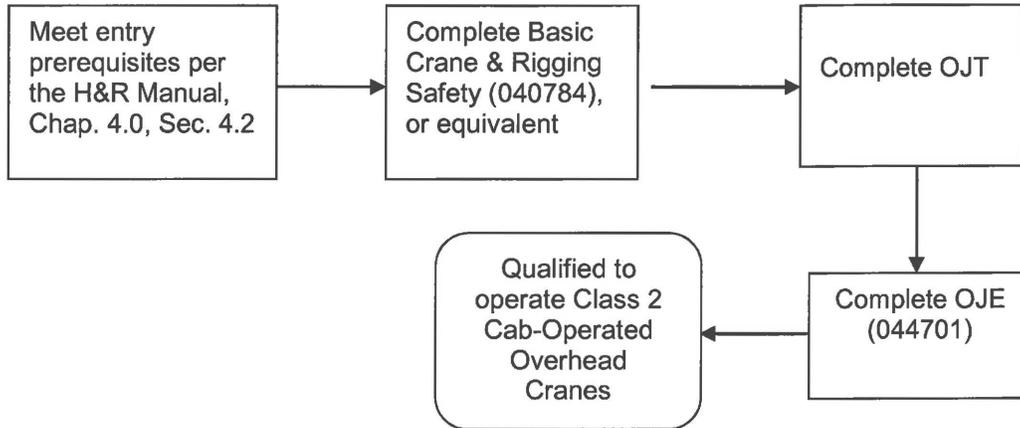


Figure 4: Cab-Operated Overhead Crane Qualification

Table 3: Class 2 Cab-Operated Overhead Crane OJE Site Forms

Overhead Crane Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
Class 2 Cab-Operated Crane/Hoist Equipment Specific Evaluation	044701	A-6002-755	A-6002-754

Cab-operated overhead crane operators maintain their qualification by completing the OJE (044701) on the specific crane to be operated every 60 months.

4.8 ADJUNCT STAFF

4.8.1 Designated Leader (DL)

Designated leaders direct hoisting and rigging field activities as identified in the H&R Manual Section 2, *Responsibilities*, and in Appendix A, Section K, *Designated Leader*. Designated leaders shall be trained and knowledgeable about the equipment operation and rigging activities to be performed. Designated leader qualification is based upon the equipment and/or rigging activity being directed, and shall meet the training requirements listed in Table 4 for each type of equipment, and/or rigging activities being directed.

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Table 4: Designated Leader Training Requirements by Equipment Type or Rigging Activity

Equipment or Rigging Activity	Initial Training	Retraining
Cab- and Floor-Operated Overhead Cranes	Basic Crane & Rigging Safety (040784)	Basic Crane & Rigging Safety Refresher (040786) for exempt personnel <b>OR</b> Overhead crane OJE for craft personnel
Mobile Cranes	Basic Crane & Rigging Safety (040784) <b>AND</b> either:  Advanced Rigging Techniques (042310) <b>OR</b> Mobile Crane Operation & Setup (042321) and Load Charts and Load Moment Indicators (042327)	Advanced Rigging Techniques (042310) <b>OR</b> Advanced Rigging qualification via OJE (042865) <b>OR</b> Mobile-Crane Operation & Set-up (042321) and Load Charts and Load Moment Indicators (042327) <b>OR</b> Mobile Crane Operator qualification via OJE
Forklift (when using a forklift to conduct a critical lift)	Forklift Operational Safety (044470)	Forklift Operational Safety (044470) <b>OR</b> Forklift Operator qualification via OJE
Incidental Rigging and/or Rigging to Mobile Equipment	Basic Crane & Rigging Safety (040784)	Basic Crane & Rigging Safety Refresher (040786) for exempt personnel <b>OR</b> Incidental Rigging OJE for craft personnel <b>OR</b> Rigging to Mobile Equipment <b>OR</b> Overhead Crane OJE for craft personnel
Advanced Rigging	Basic Crane & Rigging Safety (040784) <b>AND</b> Advanced Rigging Techniques (042310)	Advanced Rigging Techniques (042310) <b>OR</b> Advanced Rigging qualification via OJE (042865)

## 4.8.2 Designated Leader/Lift Director for Critical Lifts

In addition to the qualifications in section 4.8.1 above, employees that are assigned as designated leaders, or lift director, for critical lifts shall complete Designated Leader for Critical Lifts Qualification

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(170666). The qualification is a combination of required reading, observing or conducting a pre-lift meeting, and an interview with the employee's manager. Site Form A-6004-434 contains a training completion record, the required reading material, and a guide with questions for conducting the interview. Requalification is required every 60 months by completing training activity 170666. Designated Leaders for critical lifts should have a strong hoisting and rigging background and experience working with a critical lift crew.

#### 4.8.3 Hoisting & Rigging Supervisor/Manager

This section applies to those supervisors and managers directly responsible for assigning employees to be designated leaders, supervise hoisting and rigging operations, conduct sling, wire rope, rigging hardware or hoisting equipment inspections, and conduct maintenance, and/or repair of hoisting and rigging equipment and components. Supervisors and managers shall complete Hoisting and Rigging Manual Overview (170664), or equivalent. Requalification shall be completed as prescribed for each course. Refer to the H&R Manual, Chapter 4, Personnel Qualifications and Training Requirements, Appendix A, Section L, Supervisor, for additional information that should be covered during the training process for supervisors.

#### 4.8.4 Equipment Custodians

Equipment custodians are individuals designated by management who have custodial responsibility for cranes, hoists, forklifts, and other H&R equipment that requires scheduled maintenance, inspection, and record keeping, per the H&R Manual, Section 2.2.8. Initial and requalification requires completion of Equipment Custodian Training (042870) every 60 months.

#### 4.8.5 Lift Procedure Technical Approver

Lift Procedure Technical Approvers perform technical reviews of hoisting and rigging lift plans/procedures (including critical lift plans/procedures). Employees assigned to review and approve lift procedures shall complete Basic Crane & Rigging Safety (040784) and Critical and Special Lifts (044900), and requalify every 60 months. Lift Procedure Technical Approvers responsible for critical lift procedures for forklifts or mobile cranes shall also meet the training requirements listed in Table 5 for each type of equipment.

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Table 5: Lift Procedure Technical Reviewer Qualification

Equipment Type	Qualification Activities
Mobile Cranes	Mobile Crane Operation & Setup (042321) Load Charts Load Moment Indicators (042327) Advanced Rigging Techniques (042310)
Forklifts, when using a forklift to conduct a critical lift	Forklift Operational Safety (044470)

### 4.8.6 Safety Oversight

Individuals performing safety oversight of hoisting and rigging activities should be knowledgeable of the activities being performed, the responsibilities of the personnel engaged, and the pertinent safety related requirements for personnel and equipment that must be met to perform those activities in accordance with the H&R Manual. Employees who provide safety oversight of hoisting and rigging activities shall complete the Hoisting and Rigging Manual Overview course (170664). Requalification shall be completed every 60 months by retaking course (170664).

### 4.8.7 Buyer Technical Representatives

Employees who are involved with writing statements-of-work or purchasing goods or services that involve hoisting and rigging activities or equipment shall complete the Hoisting and Rigging Overview (170664). Requalification shall be completed every 60 months by retaking course (170664).

### 4.8.8 Classroom Instructors

Classroom instructors that present training on subjects identified in this TPD will complete Trainer's Training (170011), or equivalent, to ensure instructional competency. Classroom instructors shall meet previous training requirements identified in the H&R Manual Chapter 4.0, Section 4.3.1; have documentation of experience in the subject area; and approval of the H&R training program manager to instruct.

### 4.8.9 Rigging Engineer

In order to meet the qualifications for Rigging Engineer, employees are required to complete the following courses, or equivalent:

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- Basic Crane & Rigging Safety, 040784
- Mobile Crane Operation & Set-up, 042321
- Load Charts & Load Moment Indicators, 042327
- Advanced Rigging Techniques, 042310
- Forklift Operational Safety, 044470
- Equipment Operation Near Power Lines, 044605
- Critical and Special Lifts, 044900.

**4.8.10 Mobile Crane Assembly/Disassembly Director**

The Assembly/Disassembly (A/D) Director performs the responsibilities for assembly and disassembly of mobile cranes as required by 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction. The Assembly/Disassembly (A/D) Director qualification requires the successful completion of prerequisite courses and the Mobile Crane A/D Director Examination (044910). Prerequisite courses for the A/D Director include:

- 020147, Fall Hazard Recognition and Prevention
- 040784, Basic Crane & Rigging Safety
- 042310, Advanced Rigging Techniques
- 042321, Mobile Crane Operation & Set-up
- 042327, Load Charts & Load Moment Indicators
- 042820, Wire Rope and Rigging Hardware Inspection
- 044605, Equipment Operation Near Power Lines

**4.8.11 Mobile Crane Authorized Workers**

Authorized workers that are neither qualified riggers nor qualified mobile crane operators, but are essential to the safe movement of a load, i.e., Nuclear Chemical Operators (NCOs), Radiological Control Technicians (RCTs), Industrial Hygiene Technicians (IHTs), etc., shall complete the computer-based training course 044625, Mobile Crane Hazard Awareness.

**4.9 WIRE ROPE AND RIGGING HARDWARE INSPECTION**

Wire rope and rigging hardware inspection and maintenance is divided into the equipment categories below:

- Wire ropes

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- Slings
- Hooks
- Rigging hardware
- Below-the-hook lifting devices
- A-frames and trolleys
- Portable Automotive Lifting Devices.

Employees who perform wire rope and rigging hardware inspections shall be qualified by completing Basic Crane and Rigging Safety (040784) and Wire Rope & Rigging Hardware Inspection - Initial (042820). Completing these training requirements qualifies an employee to perform wire rope and rigging hardware inspections on all equipment categories listed above.

To maintain their qualification status, inspectors shall complete Wire Rope and Rigging Hardware Inspection Requalification (042822) and any applicable on-the-job evaluations (OJEs), every 60 months.

**4.10 MOBILE CRANE INSPECTION AND MAINTENANCE**

Mobile crane maintenance personnel who perform crane inspections shall complete the following training:

1. Basic Crane and Rigging Safety (040784)
2. Wire Rope & Rigging Hardware Inspection (042820)
3. Mobile Crane Inspection (042930)

Inspection and maintenance personnel, when required to operate a mobile crane for the performance of their work, shall also complete the following training activities:

1. Mobile Crane Operation & Set-up (042321)
2. Equipment Operation Near Power Lines (044605)
3. Load Charts and LMI Initial Training (042327)
4. Complete the crane-specific Mobile Crane Maintenance OJT (site form A-6005-516)
5. Complete an OJE, limited to those crane functions necessary to verify crane performance, as provided in Table 6.

In addition, the following prerequisites are required every 36 months for all personnel operating mobile cranes:

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- Pass a crane operator physical examination (H&R Manual, Chapter 4.0, Section 4.2.3.1)
- Pass a substance abuse test (H&R Manual, Chapter 4.0, Section 4.2.3.2).

Mobile crane operations by inspection and maintenance personnel are limited to those crane functions necessary to perform maintenance work and to verify crane performance after maintenance or repair. Inspection and maintenance personnel will complete those portions of the OJEs that allow the limited operations required to perform their activities. Completion of the OJE does not qualify mobile crane inspection and maintenance personnel to lift loads.

Table 6: Mobile Crane Inspection and Maintenance OJE Site Forms

Mobile Crane Qualifications for Inspection and Maintenance Personnel	Activity No.	TCR/Evaluation Form	Answer Guide
Class 1 Lattice boom truck	04462A	A-6005-457	A-6005-458
Class 2 Lattice boom crawler	04462B	A-6005-469	A-6005-470
Class 3 Telescopic boom (Single Control Station)	04462C	A-6005-478	A-6005-477
Class 4 Telescopic boom truck (Multiple Control Stations)	04462D	A-6005-471	A-6005-472
Class 5 Commercial Truck – Mounted Crane – Telescoping Boom	04462E	A-6005-473	A-6005-474
Class 9 Telescoping Boom Fixed Control Station (Non-rotating cab)	04462F	A-6005-475	A-6005-476

To maintain their qualification status, mobile crane inspection and maintenance personnel shall complete the following activities every 60 months:

- Wire Rope and Rigging Hardware Inspection Requalification (042822)
- Mobile Crane Inspection Requalification OJE (042932), with documentation on Site Forms A-6006-343 and A-6006-344.
- Mobile crane OJE for each class of crane being operated, if required to operate the mobile crane.
- Mobile Crane Inspection Requalification OJE Evaluators will complete H&R On-the-Job Evaluator Instruction Qualification (003909)

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**4.11 OVERHEAD HOIST INSPECTORS**

Individuals who perform periodic inspections of electric, air, chain fall, or lever operated hoists shall be qualified by first completing Basic Crane & Rigging Safety (040784), and then completing the Overhead Manual and Electric Hoist Inspection (101100).

To maintain their qualification status, overhead hoist inspectors shall complete the Overhead Manual and Electric Hoist Inspection (101100) and any applicable on-the-job evaluations (OJEs), every 60 months.

**4.12 OVERHEAD CRANE MECHANICAL INSPECTORS**

Individuals who perform documented mechanical inspections of overhead cranes shall be qualified by completing:

- Basic Crane & Rigging Safety (040784)
- Overhead Crane Inspection – Mechanical (042830).

• If the inspector is required to operate an overhead crane as part of the inspection, then the inspector must complete an OJE for the class of overhead crane being inspected.

To maintain their qualification status, overhead crane mechanical inspectors shall complete Overhead Crane Inspection – Mechanical (042830), and the applicable overhead crane OJE every 60 months.

Inspectors that also inspect the wire rope of the overhead crane must complete Wire Rope & Rigging Hardware Inspection (042820) and requalify every 60 months with Wire Rope & Rigging Hardware Inspection-Requalification (042822).

**4.13 OVERHEAD CRANE ELECTRICAL INSPECTORS**

Individuals who perform documented electrical inspections of overhead cranes shall be qualified by completing:

- Basic Crane & Rigging Safety (040784)
- Overhead Crane Inspection – Electrical (043010)

If the inspector is required to operate an overhead crane as part of the inspection, then the inspector must complete an OJE for the class of overhead crane being inspected

To maintain their qualification status, overhead crane electrical inspectors shall complete the Overhead Crane Inspection – Electrical (043010) and the applicable overhead crane OJE every 60 months.

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### 4.14 INCIDENTAL RIGGING

Incidental rigging training is required for personnel rigging loads from overhead cranes. Incidental rigging initial qualification requirements are met by completing the Basic Crane and Rigging Safety course (040784). If the employee's job requires that they also operate an overhead crane, then they must also complete the Class 1 Floor-Operated Overhead Crane OJE (044691).

If an employee completes the Basic Crane & Rigging Safety Challenge Exam (040788) to get credit for Basic Crane & Rigging Safety, the employee is not qualified to perform any hoisting or rigging activities until they complete an OJE corresponding to their work assignment. In many cases additional prerequisite training is also required, i.e., Advanced Rigging, Mobile Crane Operator, Rigging to Mobile Equipment etc.

To maintain incidental rigging qualifications:

- If the employee performs incidental rigging activities only, then they need to complete the Incidental Rigging OJE (042860) found on site forms A-6002-904 and 905. At the supervisor's discretion, or at the employee's request, they may also complete the retraining requirement by retaking the Basic Crane & Rigging Safety course (040784).
- If the employee performs overhead crane operator activities, as well as incidental rigging activities, then they need to complete only the Class 1 Floor-Operated Overhead Crane OJE (044691) found on site forms A-6002-751 and 752.

If an employee completes the retraining by taking the Basic Crane & Rigging Safety Refresher (040786), or the challenge exam (040788), they are not qualified to perform overhead crane operator or incidental rigging activities until they also complete the corresponding OJE.

Table 7: Incidental Rigging OJE Site Forms

Incidental Rigging Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
On-the-Job Evaluation	042860	A-6002-905	A-6002-904

### 4.15 RIGGING TO MOBILE EQUIPMENT

Personnel who, for the purpose of hoisting, rig loads to mobile equipment require additional training. Rigging to mobile equipment initial qualification requirements are met by completing the Basic Crane and Rigging Safety course (040784) and the Rigging to Mobile Equipment OJE (042862). If the employee's job requires that they also operate the mobile equipment,

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then they must also complete the appropriate operators training for that piece of equipment.

If an employee completes the Basic Crane & Rigging Safety Challenge Exam (040788) to get credit for Basic Crane & Rigging Safety, the employee is not qualified to perform any hoisting or rigging activities until they complete an OJE corresponding to their work assignment. In many cases additional prerequisite training is also required, i.e., Advanced Rigging, Mobile Crane Operator, Forklift operator training, etc.

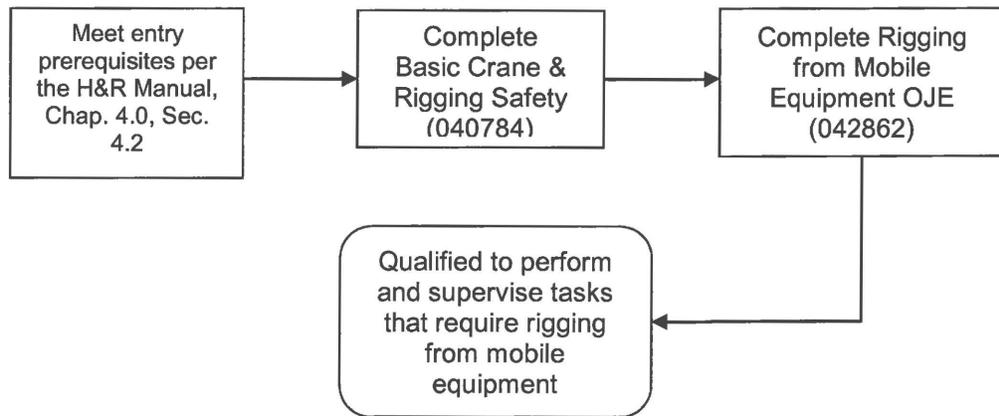


Figure 5: Rigging to Mobile Equipment Qualification

To maintain rigging to mobile equipment qualifications:

If the employee performs activities which require rigging to mobile equipment, then they need to complete the Rigging to Mobile Equipment OJE (042862) found on site forms A-6006-724 and A-6006-724i. At the supervisor’s discretion, or at the employee’s request, they may also complete the retraining requirement by retaking the Basic Crane & Rigging Safety refresher course (040786) and the Rigging to Mobile Equipment OJE (042862).

Table 8: Rigging to mobile equipment OJE Site Forms

<b>Incidental Rigging Qualification</b>	<b>Activity No.</b>	<b>TCR/Evaluation Form</b>	<b>Answer Guide</b>
On-the-Job Evaluation	042862	A-6006-724	A-6006-724i

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### 4.16 ADVANCED RIGGING

Advanced rigging training is required for personnel rigging loads from mobile cranes. Advanced rigging is the process of performing activities that involve any of the following hoisting and rigging functions:

- Calculating multi-leg sling loading using load angle factors, D/d ratios, and sling tension formulas
- Calculating load weights, and load on crane including manufacturer specified deductions
- Determining pick points
- Calculating the center of gravity and pick points for symmetrical and unsymmetrical loads
- Performing in-transit flagging, setup, and positioning of mobile cranes
- Working from suspended platforms
- Working near energized sources and power lines
- Assembling and disassembling lattice boom cranes and box-boom extensions and jibs
- Conducting critical lifts and special lifts
- Signaling mobile crane operators.

Employees that meet the program prerequisites per the H&R Manual and complete Basic Crane and Rigging Safety (040784), Advanced Rigging Techniques (042310), and Advanced Rigging On-the-Job Evaluation (042865) will be qualified to perform and supervise the advanced rigging activities listed above.

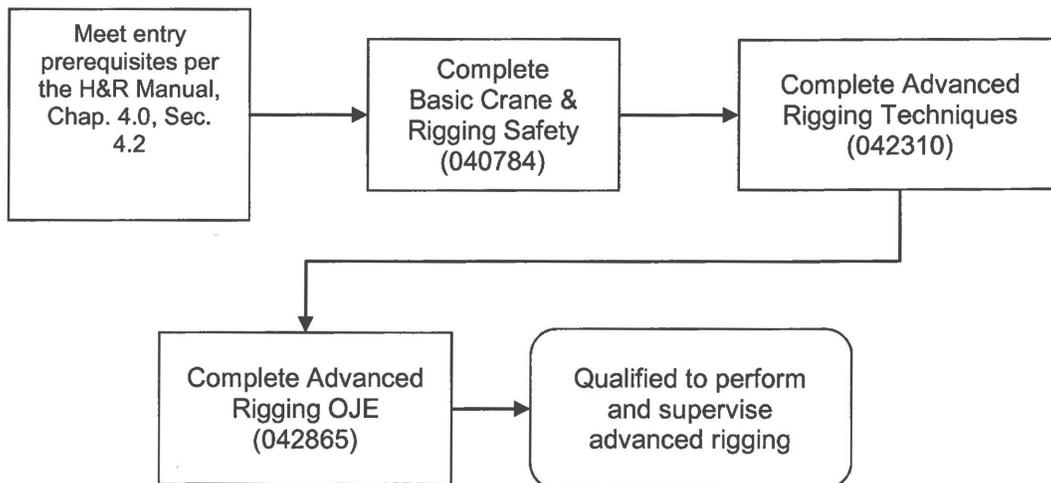


Figure 6: Advanced Rigging Qualification

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Table 9: Advanced Rigging OJE Site Forms

Advanced Rigging Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
On-the-Job Evaluation	042865	A-6002-908	A-6002-907

To maintain advanced rigging qualifications employees must complete one of the following every 60 months:

- Advanced Rigging Techniques (042310) or Advanced Rigging Techniques Challenge Examination (042315) for personnel not required to perform advanced rigging activities.
- Advanced Rigging OJE (042865) for personnel required to perform advanced rigging activities.

Personnel performing as a spotter for mobile cranes shall complete the Advanced Rigging OJE (042865) and course 044605, Equipment Operation Near Power Lines.

### 4.17 MOBILE CRANE OPERATORS

#### 4.17.1 Prerequisites

Per the H&R Manual the following prerequisites are required for Mobile Crane Operators every 36 months:

- Pass a crane operator physical examination (H&R Manual, Chapter 4.0, Section 4.2.3.1)
- Pass a substance abuse test (H&R Manual, Chapter 4.0, Section 4.2.3.2).

#### 4.17.2 Technical Training

Mobile crane operator qualification requires the completion of the following:

- Basic Crane and Rigging Safety (040784)
- Equipment Operation Near Power Lines (044605)
- Mobile Crane Operator Certification (044626), via completion of a nationally recognized accrediting agency. Based on industry criteria for written and practical testing materials. Credit is obtained by submitting a Training Equivalency Request (site form A-6001-885) and a copy of the certification.

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- Personnel meeting the technical training requirements above are also qualified to perform as a mobile crane signaler or spotter.

**4.17.3 On-the-Job Training and Evaluations**

Upon successful completion of the technical training, the employee may be given on-the-job training (OJT) on the mobile crane the employee will operate, see Mobile Crane Specific OJT, site form A-6005-516. Management may allow previously qualified or experienced personnel to proceed to the OJE. Management shall ensure the crane operator is familiar with the operating parameters of the assigned crane.

The OJE evaluator shall document completion of the employee's OJE on the appropriate site forms per Table 9. Each completed evaluation shall be signed by the employee and the qualified evaluator performing the evaluation, and forwarded to Training Records.

Personnel performing propane bottle change outs on mobile cranes, and on-the-job evaluators for mobile cranes, shall complete the Propane Bottle Change-out OJE (044674).

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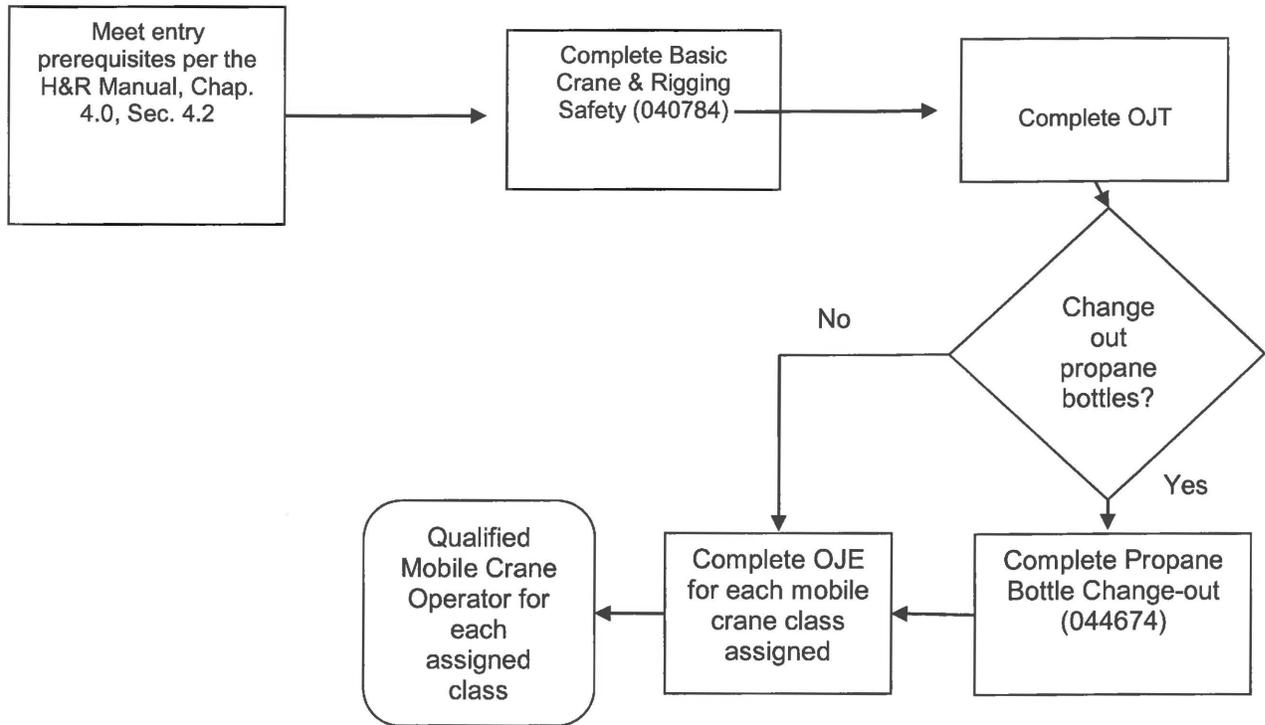


Figure 7: Mobile Crane Operator Qualification

Table 10: Mobile Crane Operator OJE Site Forms

Mobile Crane Operator Qualification	Activity No.	TCR/Evaluation Form	Answer Guide
Class 1 Lattice boom truck	044621	A-6002-942	A-6002-941
Class 2 Lattice boom crawler	044622	A-6002-945	A-6002-944
Class 3 Telescopic boom (Single Control Station)	044623	A-6002-948	A-6002-947
Class 4 Telescopic boom truck (Multiple Control Stations)	044624	A-6002-951	A-6002-950
Class 5 Commercial Truck – Mounted Crane – Telescoping Boom	044652	A-6004-388	A-6004-389
Class 9 Telescoping Boom Fixed Control Station (Non-rotating cab)	044656	A-6004-391	A-6004-392
Propane Bottle Change-out (As applicable)	044674	A-6002-954	A-6002-953

**Note:** Although other classes of mobile cranes are specified in the H&R Manual, there are no models of those classes currently in use at Hanford.

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Mobile crane operators maintain their qualification by passing a physical examination and substance abuse test and completing an OJE on each class of mobile crane assigned to the operator every 60 months.

**4.18 BELOW-THE-HOOK LIFTING DEVICE OPERATORS**

Operators of below-the-hook lifting devices shall be trained and qualified in accordance with ASME B30.20, Below-the-Hook Lifting Devices, Section 20-1.4.1 and 20-1.4.2. Operators shall demonstrate their ability to operate the below-the-hook lifting device prior to assuming responsibility for the use of the device. Hanford Site Form A-6006-230, Below-the-Hook Lifting Device On-the-Job Training, may be used to document the training.

**5.0 TRAINING RECORDS****5.1 TRAINING COMPLETION RECORDS**

Training completion records (TCR) shall:

- Be maintained by the issuing organization or employer for the duration of qualification
- Contain written examinations and on-the-job evaluations of knowledge skills
- If applicable, contain documentation supporting evaluation of previous training and qualifications
- Identify activity and/or equipment type and class qualification was issued on
- Contain the printed name of the qualified individual and date the qualification was issued
- Reflect the printed name and signature of the qualified instructors and students, including the date the evaluation was conducted
- Contains the printed name and signature of the evaluator, the person evaluated, and date the evaluation was conducted.

**5.2 QUALIFICATION CARDS**

Qualified personnel may be issued qualification cards that identify their equipment/activity qualifications. Information on the cards must be derived from, and supported by, training and qualification records per the H&R Manual, Section 4.6.1 *Training Completion Records*. If used, the qualification cards shall contain the following information:

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- Activity covered by qualification
- Type of equipment or activity
- Class of equipment
- Date of training and/or evaluation
- Printed names and signatures of qualified individual, the qualified OJT instructor, and the qualified on-the-job evaluator.

**6.0 REQUIREMENTS DOCUMENTS**

29 CFR 1910.179, *Overhead and Gantry Cranes*

29 CFR 1910.178, *Powered Industrial Trucks*

29 CFR 1910.180, *Crawler Locomotive and Truck Cranes*

29 CFR 1910.184, *Slings*

29 CFR 1926.251, *Rigging Equipment for Material Handling*

29 CFR 1926, Subpart CC, *Cranes and Derricks in Construction*

ASME Standards:

- B30.5, *Mobile and Locomotive Cranes*
- B30.2, *Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)*
- B30.9, *Slings*
- B30.10, *Hooks*
- B30.11, *Monorails and Underhung Cranes*
- B30.16, *Overhead Hoists (Underhung)*
- B30.17, *Overhead and Gantry Cranes (Top Bridge, Single Girder, Underhung Hoist)*
- B30.20, *Below-the-Hook Lifting Devices*
- B30.21, *Manually Lever Operated Hoists*
- B30.23, *Personnel Lifting Systems*
- B30.26, *Rigging Hardware*

ANSI/ITSDDT B56.1, *Safety Standard for Low Lift and High Lift Trucks*

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*ANSI/ITSDF B56.6, Safety Standard for Rough Terrain Forklift Trucks*

*DOE-RL-92-36, Hanford Site Hoisting & Rigging Manual*

*HM-FP-01, 3.2, Examination Preparation, Administration, and Control, Section 5.0, "Administering Written Examinations"*

**7.0 APPENDICES**

7.1 APPENDIX A: COURSE EQUIVALENCIES

7.2 APPENDIX B: WEB-BASED CHALLENGE EXAMINATION PROCTORING INSTRUCTIONS

7.3 APPENDIX C: HOISTING AND RIGGING SITE FORMS

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## 7.4 APPENDIX A: COURSE EQUIVALENCIES

The table below provides a listing of course equivalencies that have been reviewed and approved for use.

Course Title	Equivalency Course
040784, BASIC CRANE & RIGGING SAFETY	040788, Basic Crane & Rigging Safety Challenge Exam (Note: When a challenge exam is completed, craft personnel must still complete an OJE to perform work.)
040786, BASIC CRANE & RIGGING - REFRESHER (Note: Craft personnel must complete the applicable OJE rather than the Refresher.)	040788, Basic Crane & Rigging Safety Challenge Exam
042300, WELL DRILLER RIGGING SAFETY	040784, Basic Crane & Rigging Safety
042310, ADVANCED RIGGING TECHNIQUES	<ul style="list-style-type: none"> <li>• 042315, Advanced Rigging Techniques Challenge Exam</li> <li>• Journeyman card from a union with a rigging program that includes mobile crane operations</li> </ul>
042321, MOBILE CRANE OPERATION & SETUP	<ul style="list-style-type: none"> <li>• 042322, Mobile Crane Operation &amp; Set-up Challenge Exam</li> <li>• 044626, Mobile Crane Operator Certification</li> </ul>
042327, LOAD CHARTS & LOAD MOMENT INDICATORS	<ul style="list-style-type: none"> <li>• 042328, Load Charts &amp; Load Moment Indicators Challenge Exam</li> <li>• 044626, Mobile Crane Operator Certification</li> </ul>
042860 INCIDENTAL RIGGING	<ul style="list-style-type: none"> <li>• 042862 Rigging to mobile Equipment</li> <li>• 042865 Advanced Rigging</li> </ul>
042862 RIGGING TO MOBILE EQUIPMENT	<ul style="list-style-type: none"> <li>• 042865 Advanced Rigging</li> </ul>
042930, MOBILE CRANE INSPECTION	<ul style="list-style-type: none"> <li>• Washington State Mobile Crane Certifier</li> <li>• Mobile Crane Inspection Training, Industrial Training International</li> </ul>
044470, FORKLIFT OPERATIONAL SAFETY	041890, Forklift Operational Safety Challenge Exam
170664, HOISTING AND RIGGING MANUAL OVERVIEW	040784, Basic Crane & Rigging Safety

**Note:** A Training Equivalency Request Form (site form A-6001-885) must be submitted to the HAMMER Program Manager to obtain an equivalency for those classes that do not have a course number.

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**7.5 APPENDIX B: WEB-BASED CHALLENGE EXAMINATION  
PROCTORING INSTRUCTIONS****PURPOSE AND SCOPE**

The following describes the process for proctors to administer challenge examinations in the Hoisting & Rigging and Aerial Lift Training Programs.

**REQUIREMENTS AND RESPONSIBILITIES**

Training managers will designate personnel within their organizations to serve as proctors.

The HAMMER/Hanford Training Point of Contact will maintain the challenge examinations and web-based training system, and provide instructions to proctors on administering the examinations.

Proctors will administer challenge examinations in accordance with the following responsibilities:

1. Maintain examination security by establishing a secure location and ensuring no unauthorized access to the web-based challenge examination system.
2. If evidence exists that an examination has been compromised, notify the HAMMER/Hanford Training Point of Contact.
3. Ensure students have not failed the examination on two previous attempts. If a student fails an examination twice, they must attend the initial course for the equipment or activity.
4. Ensure that no unauthorized materials are available to students during the examination.

**Note:** Students who must maintain cell phone accessibility for possible emergency events must clear it through the proctor prior to testing.

5. Before proceeding, give students an opportunity to ask clarifying questions on how the examination is being administered.
6. Continuously monitor the examination environment. If a compromise is observed during the examination, take the following steps:
  - a. Stop the student's examination and direct them to wait outside the examination room.

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- b. At the earliest convenience, tell the student what was observed and direct them to report back to their manager.
  - c. Report the incident to the training manager, responsible manager, and HAMMER/Hanford Training Point of Contact.
  - d. The compromised examination shall be considered a failed examination.
7. Do not allow students to leave the testing room, unless there is an emergency.
8. Ensure the examination has been completed and scored. A minimum passing score of 80% is required.
9. If a student fails a challenge examination on the first attempt:
  - a. Inform the student of their failure to meet the passing standard
  - b. Give the student an opportunity to review their graded examination
  - c. If requested, give the student an opportunity to take a second examination.
10. If the student does not pass the second examination, or chooses not to perform the examination, notify the training manager and the responsible manager to inform them of the student's status. The student will then be required to take the initial course for that equipment type or activity.

The instructions for administering web-based challenge examinations are outlined below.

Step	Action
1.	Log on to the <u>Qual Exam Web-based System</u> using the pre-assigned login and password obtained from the Hoisting & Rigging Training Point of Contact.
2.	Verify that the student has not made more than one failed attempt at the desired examination by selecting " <i>List specific student tests</i> " and enter the student's HID number, preceded by the "h", in the search engine. Then select " <i>Get student tests</i> ". If the student has two failed examinations for the same course, they are not eligible to take a third examination.
3.	If the student is eligible to take the challenge exam, select " <i>Main Menu</i> " and select " <i>Administer a test online</i> ".
4.	Choose the desired examination and select " <i>Proceed</i> ".
5.	Have student log in using their HID number and CACN, and then select " <i>Submit</i> ".

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6.	Student verifies that the Exam Name, Student HID and Name are correct, and then select " <i>Start the test</i> ".
7.	<p>Verify that no unauthorized materials are available to the student during the examination.</p> <p>Authorized materials include, pen or pencil, blank paper, and calculator.</p> <p><b>Note:</b> Students who must maintain cell phone accessibility for possible emergency events should clear it through the proctor prior to testing.</p>
8.	<p>Continuously monitor the examination environment. If a compromise is observed during the examination, the examination shall be considered failed. The proctor shall take the following steps:</p> <ol style="list-style-type: none"> <li>a. Stop the student's examination and direct them to wait outside the examination room.</li> <li>b. At the earliest convenience, tell the student what was observed and direct them to report back to their manager.</li> <li>c. Report the incident to the training manager and responsible manager.</li> <li>d. Report the incident to the HAMMER/Hanford Training Point of Contact and provide the student's name, HID, and CACN.</li> </ol>
9.	Do not allow students to leave the testing room unless there is an emergency.
10.	When the student is finished, select " <i>Grade the test</i> " and verify that the examination has been completed and scored.
11.	<p>A minimum passing score of 80% is required. Passing scores will automatically be submitted to Training Records; however, if a student fails their first attempt to complete a challenge examination:</p> <ol style="list-style-type: none"> <li>a. Inform the student of their failure to meet the passing standard</li> <li>b. Give the student an opportunity to review their graded examination <ol style="list-style-type: none"> <li>i. Proctor logs in using proctor ID and password.</li> <li>ii. Select "<i>Review a student's test</i>".</li> <li>iii. Set the date range (usually the current date), and then select "<i>Get tests</i>".</li> <li>iv. Choose the correct test and student HID number, and then selects "<i>Review test</i>".</li> <li>v. Verify the student name and test date/time, and then select "<i>Begin</i>".</li> <li>vi. Review each test question with the student before returning to the Main Menu.</li> </ol> </li> </ol>

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	<ul style="list-style-type: none"><li>c. Allow the student to take a second challenge examination, if desired.</li><li>d. If the student does not pass the second challenge examination or chooses not to perform the examination:<ul style="list-style-type: none"><li>i. Notify the training manager and the responsible manager to inform them of the student's status.</li><li>ii. The student will then be required to take the initial course for that equipment type or activity.</li></ul></li></ul>
12.	If requested, return to the Main Menu and print a copy of the completed examination results by selecting " <i>View/Print a student's results</i> "; enter the student's HID number, preceded by the "h" and select " <i>Continue</i> ". Print the results using the print option in the main toolbar. NEVER print any part of the examination.

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## 7.6 APPENDIX C: HOISTING AND RIGGING SITE FORMS

NUMBER	TITLE
A-6001-885	Training Equivalency Request Form
A-6006-138	Hoisting and Rigging and Aerial Lift Challenge Exam Proctor Designation
A-6002-751	EQUIPMENT SPECIFIC EVALUATION CLASS 1 FLOOR OPERATED OVERHEAD CRANE ANSWER GUIDE
A-6002-752	EQUIPMENT SPECIFIC EVALUATION CLASS 1 FLOOR OPERATED OVERHEAD CRANE
A-6002-754	EQUIPMENT SPECIFIC EVALUATION CLASS 2 CAB OPERATED OVERHEAD CRANE ANSWER GUIDE
A-6002-755	EQUIPMENT SPECIFIC EVALUATION CLASS 2 CAB OPERATED OVERHEAD CRANE
A-6002-763	EQUIPMENT SPECIFIC EVALUATION CLASSES 1 2 3 4 5 6 7 FORKLIFT ANSWER GUIDE
A-6002-764	EQUIPMENT SPECIFIC EVALUATION CLASSES 1 2 3 4 5 6 7 FORKLIFT
A-6002-775	EQUIPMENT SPECIFIC EVALUATION CLASS 1 2 3 AERIAL LIFT ANSWER GUIDE
A-6002-776	EQUIPMENT SPECIFIC EVALUATION CLASS 1 2 3 AERIAL LIFT
A-6002-793	EQUIPMENT SPECIFIC EVALUATION CLASS 4 AERIAL LIFT MANUALLY PROPELLED ELEVATING ANSWER GUIDE
A-6002-794	EQUIPMENT SPECIFIC EVALUATION CLASS 4 AERIAL LIFT MANUALLY PROPELLED ELEVATING
A-6002-799	EQUIPMENT SPECIFIC EVALUATION CLASS 5 AND 6 AERIAL LIFT ANSWER GUIDE
A-6002-800	EQUIPMENT SPECIFIC EVALUATION CLASS 5 AND 6 AERIAL LIFT
A-6002-904	ON-THE-JOB EVALUATION INCIDENTAL RIGGING ANSWER GUIDE
A-6002-905	ON-THE-JOB EVALUATION INCIDENTAL RIGGING
A-6002-907	ON-THE-JOB EVALUATION ADVANCED RIGGING ANSWER GUIDE
A-6002-908	ON-THE-JOB EVALUATION ADVANCED RIGGING
A-6002-923	AERIAL LIFT/DEVICE WORKPLACE HAZARD EVALUATION CHECKLIST
A-6002-924	FORKLIFT WORKPLACE HAZARD EVALUATION CHECKLIST
A-6002-925	OVERHEAD CRANE/HOIST WORKPLACE HAZARD EVALUATION CHECKLIST

## HOISTING &amp; RIGGING

A-6002-926	MOBILE CRANE WORKPLACE HAZARD EVALUATION CHECKLIST
A-6002-927	INCIDENTAL AND ADVANCED RIGGING WORKPLACE HAZARD EVALUATION CHECKLIST
A-6002-928	MOBILE CRANE PRE-USE INSPECTION CHECKLIST
A-6002-941	EQUIPMENT SPECIFIC EVALUATION CLASS 1 MOBILE CRANE ANSWER GUIDE
A-6002-942	EQUIPMENT SPECIFIC EVALUATION CLASS 1 MOBILE CRANE
A-6002-944	EQUIPMENT SPECIFIC EVALUATION CLASS 2 MOBILE CRANE ANSWER GUIDE
A-6002-945	EQUIPMENT SPECIFIC EVALUATION CLASS 2 MOBILE CRANE
A-6002-947	EQUIPMENT SPECIFIC EVALUATION CLASS 3 MOBILE CRANE ANSWER GUIDE
A-6002-948	EQUIPMENT SPECIFIC EVALUATION CLASS 3 MOBILE CRANE
A-6002-950	EQUIPMENT SPECIFIC EVALUATION CLASS 4 MOBILE CRANE ANSWER GUIDE
A-6002-951	EQUIPMENT SPECIFIC EVALUATION CLASS 4 MOBILE CRANE
A-6002-953	EQUIPMENT SPECIFIC EVALUATION PROPANE BOTTLE CHANGE ANSWER GUIDE
A-6002-954	EQUIPMENT SPECIFIC EVALUATION PROPANE BOTTLE CHANGE OUT EVALUATION
A-6004-378	EQUIPMENT SPECIFIC EVALUATION CLASS 8 FORKLIFTS
A-6004-379	EQUIPMENT SPECIFIC EVALUATION CLASS 8 FORKLIFT ANSWER GUIDE
A-6004-380	EQUIPMENT ATTACHMENT – ON THE JOB EVALUATION ADDENDUM
A-6004-388	EQUIPMENT SPECIFIC EVALUATION CLASS 5 MOBILE CRANE
A-6004-389	EQUIPMENT SPECIFIC EVALUATION CLASS 5 MOBILE CRANE ANSWER GUIDE
A-6004-391	EQUIPMENT SPECIFIC EVALUATION CLASS 9 MOBILE CRANE
A-6004-392	EQUIPMENT SPECIFIC EVALUATION CLASS 9 MOBILE CRANE ANSWER GUIDE
A-6004-434	TRAINING COMPLETION RECORD – DESIGNATED LEADER FOR CRITICAL LIFT QUALIFICATION
A-6002-724i	ON-THE-JOB EVALUATION RIGGING TO MOBILE EQUIPMENT ANSWER GUIDE
A-6002-724	ON-THE-JOB EVALUATION RIGGING TO MOBILE EQUIPMENT