

Oregon OSHA's Cranes and Derricks in Construction- Operator Qualification

February 2019

Text removed is in [~~brackets with line through~~].

Text added is in **bold and underline**.

437-003-0001 Adoption by Reference. In addition to, and not in lieu of, any other safety and health codes contained in OAR Chapter 437, the Department adopts by reference the following federal regulations printed as part of the Code of Federal Regulations, in the Federal Register:

(28) Subdivision CC – Cranes and Derricks in Construction.

(a) 29 CFR 1926.1400 Scope, published 4/11/14, FR vol. 79, no. 70, p. 20316; **amended with Oregon OSHA AO 3-2015, f. 10/9/15, ef. 1/1/16.**

(b) 29 CFR 1926.1401 Definitions, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(c) 29 CFR 1926.1402 Ground conditions, published 8/9/10, FR vol. 75, no. 152. Pp. 47906-48177.

(d) 29 CFR 1926.1403 Assembly/Disassembly – selection of manufacturer or employer procedures, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(e) 29 CFR 1926.1404 Assembly/Disassembly – general requirements (applies to all assembly and disassembly operations), published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(f) 29 CFR 1926.1405 Disassembly – additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures), published 8/9/10, FR vol. 75, no. 152. Pp. 47906-48177.

(g) 29 CFR 1926.1406 Assembly/Disassembly – employer procedures – general requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(h) 29 CFR 1926.1407 Power line safety (up to 350 kV) – assembly and disassembly, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(i) 29 CFR 1926.1408 Power line safety (up to 350 kV) – equipment operations, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(j) 29 CFR 1926.1409 Power line safety (over 35 kV), published 8/9/10, FR vol. 75, vol.

152, pp. 47906-48177.

(k) 29 CFR 1926.1410 Power line safety (all voltages) – equipment operations closer than the Table A zone, published [~~8/9/10~~] 4/11/14, FR vol. 7[~~5~~]9, no. [~~152~~]70, pp. [~~47906-48177~~]20316.

(l) 29 CFR 1926.1411 Power line safety – while traveling, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(m) 29 CFR 1926.1412 Inspections, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(n) 29 CFR 1926.1413 Wire rope – inspection, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(o) 29 CFR 1926.1414 Wire rope – selection and installation criteria, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(p) 29 CFR 1926.1415 Safety devices, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(q) 29 CFR 1926.1416 Operational aids, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(r) 29 CFR 1926.1417 Operation, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(s) 29 CFR 1926.1418 Authority to stop operation, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(t) 29 CFR 1926.1419 Signals – general requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(u) 29 CFR 1926.1420 Signals – radio, telephone or other electronic transmission of signals, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(v) 29 CFR 1926.1421 Signals – voice signals – additional requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(w) 29 CFR 1926.1422 Signals – hand signal chart, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(x) 29 CFR 1926.1423 Fall protection, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(y) 29 CFR 1926.1424 Work area control, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(z) 29 CFR 1926.1425 Keeping clear of the load, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(aa) 29 CFR 1926.1426 Free fall and controlled load lowering, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(bb) 29 CFR 1926.1427 Operator qualification and certification, published ~~[8/9/10]~~11/9/18, FR vol. ~~[75]~~83, no. ~~[152]~~218, p[~~p~~]. ~~[47906-48177]~~56198.

(cc) 29 CFR 1926.1428 Signal person qualifications, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(dd) 29 CFR 1926.1429 Qualifications of maintenance & repair employees, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(ee) 29 CFR 1926.1430 Training, published ~~[8/9/10]~~11/9/18, FR vol. ~~[75]~~83, no. ~~[152]~~218, p[~~p~~].~~[47906-48177]~~56198.

(ff) 29 CFR 1926.1431 Hoisting personnel, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(gg) 29 CFR 1926.1432 Multiple-crane/derrick lifts – supplemental requirements, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(hh) 29 CFR 1926.1433 Design, construction and testing, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(ii) 29 CFR 1926.1434 Equipment modifications, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(jj) 29 CFR 1926.1435 Tower cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(kk) 29 CFR 1926.1436 Derricks, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(ll) 29 CFR 1926.1437 Floating cranes/derricks and land cranes/derricks on barges, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(mm) 29 CFR 1926.1438 Overhead & gantry cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(nn) 29 CFR 1926.1439 Dedicated pile drivers, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(oo) 29 CFR 1926.1440 Sideboom cranes, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(pp) 29 CFR 1926.1441 Equipment with a rated hoisting/lifting capacity of 2,000 pounds [ef]or less, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(qq) 29 CFR 1926.1442 Severability, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(rr) Appendix A to Subdivision CC of 1926 – Standard Hand Signals, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(ss) Appendix B to Subdivision CC of 1926 – Assembly/Disassembly – Sample Procedures for Minimizing the Risk of Unintended Dangerous Boom Movement, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

(tt) Appendix C to Subdivision CC of 1926 – Operator Certification – Written Examination – Technical Knowledge Criteria, published 8/9/10, FR vol. 75, no. 152, pp. 47906-48177.

These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: APD Admin. Order 5-1989, f. 3/31/89, ef. 5/1/89 (temp).
APD Admin. Order 8-1989, f. 7/7/89, ef. 7/7/89 (perm).
APD Admin. Order 14-1989, f. 7/20/89, ef. 8/1/89 (temp).
APD Admin. Order 15-1989, f. 9/13/89, ef. 9/13/89 (perm).
APD Admin. Order 16-1989 (temp), f. 9/13/89, ef. 9/13/89.
OR-OSHA Admin. Order 2-1989, f. 10/17/89, ef. 10/17/89.
OR-OSHA Admin. Order 3-1990, f. 1/19/90, ef. 1/19/90 (temp).
OR-OSHA Admin. Order 7-1990, f. 3/2/90, ef. 3/2/90 (perm).
OR-OSHA Admin. Order 8-1990, f. 3/30/90, ef. 3/30/90.
OR-OSHA Admin. Order 13-1990, f. 6/28/90, ef. 8/1/90 (temp).
OR-OSHA Admin. Order 19-1990, f. 8/31/90, ef. 8/31/90 (perm).
OR-OSHA Admin. Order 27-1990, f. 12/12/90, ef. 2/1/91.
OR-OSHA Admin. Order 6-1991, f. 3/18/91, ef. 4/15/91.
OR-OSHA Admin. Order 7-1991, f. 4/25/91, ef. 4/25/91.
OR-OSHA Admin. Order 15-1991, f. 12/13/91, ef. 12/13/91.
OR-OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.
OR-OSHA Admin. Order 6-1992, f. 5/18/92, ef. 5/18/92.
OR-OSHA Admin. Order 11-1992, f. 10/9/92, ef. 10/9/92.
OR-OSHA Admin. Order 1-1993, f. 1/22/93, ef. 1/22/93.
OR-OSHA Admin. Order 16-1993, f. 11/1/93, ef. 11/1/93 (Lead).
OR-OSHA Admin. Order 1-1994, f. 4/27/94, ef. 4/27/94.
OR-OSHA Admin. Order 4-1994, f. 8/4/94, ef. 8/4/94 (HazCom).
OR-OSHA Admin. Order 6-1994, f. 9/30/94, ef. 9/30/94.
OR-OSHA Admin. Order 1-1995, f. 1/19/95, ef. 1/19/95 (DOT markings, placards & labels).
OR-OSHA Admin. Order 3-1995, f. 2/22/95, ef. 2/22/95 (Haz Waste).
OR-OSHA Admin. Order 4-1995, f. 3/29/95, ef. 3/29/95 (Asbestos).
OR-OSHA Admin. Order 5-1995, f. 4/6/95, ef. 4/6/95 (HazCom).
OR-OSHA Admin. Order 6-1995, f. 4/18/95, ef. 6/1/95 (Fall Protection).
OR-OSHA Admin. Order 8-1995, f. 8/25/95, ef. 8/25/95 (Asbestos).
OR-OSHA Admin. Order 5-1996, f. 11/29/96, ef. 11/29/96.
OR-OSHA Admin. Order 6-1996, f. 11/29/96, ef. 11/29/96.
OR-OSHA Admin. Order 2-1997, f. 3/12/97, ef. 3/12/97.
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.
OR-OSHA Admin. Order 6-1997, f. 5/2/97, ef. 5/2/97.
OR-OSHA Admin. Order 7-1997, f. 9/15/97, ef. 9/15/97 (Fall Protection).
OR-OSHA Admin. Order 8-1997, f. 11/14/97, e. 11/14/97 (Methylene Chloride).
OR-OSHA Admin. Order 1-1998, f. 2/13/98, e. 2/13/98 (Methylene Chloride).

OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98 (Respiratory Protection).
OR-OSHA Admin. Order 6-1998, f. 10/15/98, ef. 10/15/98 (Slings 3/H).
OR-OSHA Admin. Order 7-1998, f. 12/28/98, ef. 12/28/98 (Asbestos).
OR-OSHA Admin. Order 1-1999, f. 3/22/99, e. 3/22/99 (Methylene Chloride).
OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.
OR-OSHA Admin. Order 6-1999, f. 5/26/99, ef. 5/26/99.
OR-OSHA Admin. Order 3-2000, f. 2/8/00, ef. 2/8/00.
OR-OSHA Admin. Order 3-2001, f. 2/5/01, ef. 2/5/01 (Fall Protection/Oregon Exceptions).
OR-OSHA Admin. Order 3-2002, f. 4/15/02, ef. 4/18/02 (Steel Erection).
OR-OSHA Admin. Order 5-2002, f. 6/28/02, ef. 10/1/03 (GFCI 3/K).
OR-OSHA Admin. Order 6-2002, f. 7/19/02, ef. 7/19/02 (Fall Protection/Steel Erection).
OR-OSHA Admin. Order 1-2003, f. 1/30/03, ef. 4/30/03 (3/Q Masonry Wall Bracing).
OR-OSHA Admin. Order 2-2003, f. 1/30/03, ef. 1/30/03 (3/G).
OR-OSHA Admin. Order 7-2003, f. 12/5/03, ef. 12/5/03 (3/O).
OR-OSHA Admin. Order 8-2003, f. 12/30/03, ef. 1/1/04 (3/R).
OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05 (3/D and 3/Z).
OR-OSHA Admin. Order 2-2006, f. 4/28/06, ef. 4/28/06 (3/R).
OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.
OR-OSHA Admin. Order 5-2006, f. 8/7/06, ef. 1/1/07.
OR-OSHA Admin. Order 6-2006, f. 8/30/06, ef. 8/30/06.
OR-OSHA Admin. Order 10-2006, f. 11/30/06, ef. 11/30/06.
OR-OSHA Admin. Order 6-2007, f. 9/26/07, ef. 9/26/07 (3/O).
OR-OSHA Admin. Order 5-2008, f. 5/1/08, ef. 5/15/08 (PPE).
OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.
OR-OSHA Admin. Order 3-2010, f. 6/10/10, ef. 6/15/10.
OR-OSHA Admin. Order 1-2011, f. 2/9/11, ef. 2/9/11.
OR-OSHA Admin. Order 4-2011, f. 12/8/11, ef. 12/8/11.
OR-OSHA Admin. Order 5-2011, f. 12/8/11, ef. 7/1/12.
OR-OSHA Admin. Order 1-2012, f. 4/10/12, ef. 4/10/12.
OR-OSHA Admin. Order 5-2012, f. 9/25/12, ef. 9/25/12.
OR-OSHA Admin. Order 1-2013, f. 2/14/13, ef. 2/14/13.
OR-OSHA Admin. Order 2-2013, f. 2/15/13, ef. 4/1/13.
OR-OSHA Admin. Order 4-2013, f. 7/19/13, ef. 7/19/13.
OR-OSHA Admin. Order 5-2013, f. 9/13/13, ef. 9/13/13.
OR-OSHA Admin. Order 6-2013, f. 10/9/13, ef. 10/9/13.
OR-OSHA Admin. Order 7-2013, f. 12/12/13, ef. 12/12/13.
OR-OSHA Admin. Order 6-2014, f. 10/28/14, ef. 5/1/15.
OR-OSHA Admin. Order 7-2014, f. 11/7/14, ef. 11/9/14.
OR-OSHA Admin. Order 3-2015, f. 10/9/15, ef. 1/1/16.
OR-OSHA Admin. Order X-XXXX, f. XX/XX/XX, ef. XX/XX/XX.

~~[437-003-0081 Crane Operator Training Requirements.~~

~~(1) The employer shall establish written procedures for the safe operation of all cranes used in construction.~~

~~(2) The employer shall see that employees who operate cranes are properly trained, have sufficient practical experience, and follow operating procedures for the safe operation of the crane.~~

~~(3) The level of training and experience received by the employee as meeting OAR 437-003-0081(2) shall be recorded in writing.~~

~~(4) The employer shall maintain all written records of the crane operator's safety training and experience as set forth in OAR 437-003-0081, and shall make such records available for review by the Oregon Occupational Safety and Health Division (OR-OSHA) upon request.~~

~~(5) In addition to the basic training and experience required by OAR 437-003-0081(2), all employees engaged in construction work who operate cranes of 5 ton capacity or greater shall have additional training and experience as set forth in Appendices OR-A through OR-E of this Subdivision, and shall possess a valid crane operator's safety training card issued by a training provider or employer.~~

~~(a) OAR 437-003-0081(5) does not apply to hoists, wreckers, line trucks, cranes used by railroads on railroad right-of-ways, or to cranes while used for handling logs.~~

~~NOTE: The term "line truck" means a truck used to transport workers, tools, and material, and is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material or personnel.~~

~~(b) An employee with prior training and experience having a minimum of 1500 hours of prior crane experience on a specific type or type(s) of crane shall be deemed to have met the requirements of OAR 437-003-0081(5) if that person has written records of such training and experience.~~

~~(c) Upon receipt and verification of such written records of experience, the employer may issue a crane operator's card to the employee.~~

~~(d) After January 1, 1992, all operators of cranes of 5 ton or greater capacity that are used in construction shall comply with OAR 437-003-0081(5) by successfully completing a training course which meets the provisions of OAR 437-003-0081(2) and Appendices OR-A through OR-E of this Subdivision.~~

~~(e) A crane operator's safety training card, as required by OAR 437-003-0081(5), need not be in any particular form, but at a minimum shall specify the type or types and size of cranes the operator is trained to operate, a picture of the operator, the original issue date, expiration date, name, signature of the operator, and the name and signature of the training provider or employer.~~

~~(f) All cards issued after January 1, 1992, shall be laminated in clear plastic to prevent tampering. All cards issued prior to January 1, 1992, shall be laminated in plastic and shall have the operator's picture on the card by April 1, 1992.~~

~~(g) The crane operator's safety training card required by OAR 437-003-0081(5) shall be renewed and signed every three years by a training institution or employer upon:~~

~~(A) Verification that the employee has read the current OR-OSHA rules on cranes contained in Division 3, Construction, Subdivision N, Cranes, Derricks, Hoists, Elevators and Conveyors; and~~

~~(B) Completion of crane operator safety training refresher training consisting of 4 hours at a minimum.~~

~~(6) Persons who are in training either through a recognized apprenticeship program, or any other properly supervised program may operate a crane under visual supervision of a crane operator who possesses a current operator's safety training card for that type of crane.~~

~~(7) Any person from another state wishing to operate a crane of 5 ton capacity or greater for the purpose of construction work may be issued an operator's safety training card by the employer or training provider upon:~~

~~(a) Verification of a minimum of 1500 hours experience on a specific type or types of cranes being operated and is being trained in Oregon for the purpose of operating this type of crane. This temporary operator's safety training card shall be valid for 30 days from the date of issue; or~~

~~(b) Presenting a valid crane operator's safety training card issued in a state which has crane operator's safety training standards equal to or greater than those listed in Appendices OR-A through OR-E of this Subdivision.~~

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: ~~OR-OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.~~

~~OR-OSHA Admin. Order 6-1994, f. 9/30/94, ef. 9/30/94.~~

~~OR-OSHA Admin. Order 3-2002, f. 4/15/02, ef. 4/18/02.]~~

~~[APPENDIX OR-A Classroom Training.~~

~~Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Basic and Specialty~~

~~Basic Core Training Curriculum~~

Unit of Study	Instruction
SAFETY	Overview of causes of crane accidents and training in managing the work environment safely.
OR-OSHA CRANE RULES	Familiarity with OR-OSHA'S Division 3, Construction, Subdivision N, Cranes, Derricks, Hoists, Elevators, and Conveyors.
CRANES AND COMPONENTS	Types of cranes, names of crane components, selection of cranes for job.
DEFINITIONS OF TERMS	Center of gravity, radius, gross and net load, static load and dynamic load(s), effective weights, ultimate strength and rated strength, safety factors, stowed and stored, tipping axis, jib angle to ground.

TECHNICAL DATA	Leverage: when using the crane in general, the hook, block and the boom hoist. Changes in leverage, rate of tipping, forward stability, backward stability, crane failures, gantries, live and high masts, counterweights, effect of boom angle, effects of jib angle, jib as a boom extension, effect of load on booms, production lifts, rope safety factors.
QUADRANTS OF OPERATION	DEFINITIONS — Over the rear, over the side, 360 degree rotation.
WEIGHT OF THE LIFT	Sources of weight data, calculating weights, principles examples, lifting in water, tests lifts, check lifts.
CONDITIONS & CAPACITIES	Summary of conditions affecting crane capacities: off-level, wind, eccentric reeving, swingout, sidelading, impact loading, outrigger position, ground conditions, counterweights, gantries and high masts, equipment condition, swing bearing wear, tire condition and inflation, boom pad wear, outrigger and pad condition, bent chords and lacings.
MULTIPLE CRANE LIFTS	Types of equalizer beams, pivot points in lines, pivot points not in-line, load as an equalizer beam, necessary calculations.
CALCULATIONS	Crane capacities: results of over loading, division of load charts, gross and net capacity, gross and net load, radius between values, boom length between values, boom angle between values, parts of line; calculating capacities: on the boom, on the pinned section, on the extension, on the jib.
PREPARING FOR A LIFT	Boom assembly and disassembly, reasons to repair/scrap boom sections, Wire rope installation, reeving, wedge sockets, telescoping booms, setting-up, measuring radius, radius over boom angle, outrigger set-up, block outriggers, leveling methods.
CONDITIONS DURING LIFTS	Swingout, slack rope on drums, pick and carry, lifting on tires, protection of personnel around high voltage and results of making contact, working in the vicinity, effects of electrical current, hitting booms, boom over back, causes of two blocking, shift of center of gravity, cold weather operation, tipping over backwards.
LEAVING CRANES UNATTENDED	Short periods, extended periods.
RESPONSIBILITIES	Management and operator responsibilities.

MISCELLANEOUS	Signals, composition of wire rope, rope strengths, tables of rates and capacities, determine sling loadings, using blocks and tackle.
CRANE CHECKLIST	Operator's daily checklist.
ERECTION, DISMANTLING, TRANSPORT	Erection checklist, bolting procedures, bolting.
INSPECTION AND TESTING	Frequency of inspections, testing maintenance, and storage of crane components.

NOTE: Complete program includes at least one crane specific class in addition to basic core.

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: ~~OR OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.]~~

~~[APPENDIX OR-B Training (Crane Specific).~~

~~Minimum Training Required for Operating Cranes of 5-Ton Capacity or Greater~~

~~Hydraulic Cranes~~

Unit of Study	Instruction
INTRODUCTION	Hydraulic cranes: 5 ton to 50 ton.
ACCIDENTS/SAFETY	Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE	Type of cranes, industrial hydraulic crane (carry deck), commercial mounted boom truck, hydraulic rough terrain crane (exploded view), characteristics, name of components, transporting, erecting & dismantling, hydraulic crane operator checklist (daily inspection).
MACHINE CONDITION	Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices, annual inspection.
SAFE OPERATING PRACTICES	Quadrants of operation: over the front, over the rear, over the side, over the outriggers; mobile and rubber-tired cranes; weight of the lift; load charts; calculating capacities.
CONDITIONS & CAPACITIES	Land based, barge mounted.

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: ~~OR OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.]~~

[APPENDIX OR-C Training.

Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater, Tower and Whirley Cranes

Unit of Study	Instruction
ACCIDENTS/SAFETY	Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE	Type of cranes, characteristics, name of components.
TOWER & WHIRLEY OPERATOR CHECKLIST	
MACHINE CONDITION	Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices.
TOWER CRANE CLIMBING	
SAFE OPERATING PRACTICES	Quadrants of operation, weight of the lift, load charts, calculating capacities.
CONDITIONS AFFECTING CAPACITIES	

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: OR-OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.]

[APPENDIX OR-D Training.

Minimum Training Required for Operating Cranes of 5 Ton Capacity or Greater

Conventional Cranes

Unit of Study	Instruction
ACCIDENTS/SAFETY	Overview of crane accidents and safety awareness.
CRANE NOMENCLATURE	Type of cranes, truck cranes, crawler, characteristics, name of components, transporting, erecting and dismantling, conventional crane operator checklist (daily inspection).
MACHINE CONDITION	Configuration, repairs/modifications, swing assembly, cab/controls, fluid levels, boom/load hoist, boom/jib extensions, wire rope/load blocks, safety devices, annual inspection.
SAFE OPERATING PRACTICES	Quadrants of operation for mobile and rubber-tired cranes: over the rear, over the side, over the outriggers, over the front. Quadrants of operation for crawler cranes: over the

	side, ends, 360 degree rotation; weight of the lift; load charts; calculating capacities.
CONDITIONS & CAPACITIES	Land base, barge mounted.

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: ~~OR OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.~~]

~~[APPENDIX OR-E Practical Experience.~~

~~Minimum Training Required for Operating Cranes of 5-Ton Capacity or Greater~~

~~This are is meant to have an operator demonstrate a minimum acceptable level of competency in the listed areas as appropriate to the specific type of crane being operated.~~

~~(1) Method and sequence of checks to be conducted on cranes prior to operation.~~

~~(2) Procedures for assembling and dismantling cranes and their transportation.~~

~~(3) Crane Set-Up:~~

~~(a) Site preparation~~

~~(b) Counterweights~~

~~(c) Outriggers~~

~~(d) Rigging methods and materials~~

~~(4) Crane Operation:~~

~~(a) Safe operating procedures~~

~~(b) Principles of leverage and power transmission~~

~~(c) Purpose and use of load charts and boom angles~~

~~(d) Picking loads~~

~~(e) Adjacent hazards~~

~~(5) Frequency, sequence and methods of inspections.~~

~~(6) Maintenance.~~

~~(7) Effect of overloading, instability, and structural or functional failure.~~

~~(8) Procedures for Tower Crane climbing (as applicable).~~

~~(9) Familiarity with OR-OSHA Crane rules and Manufacturer's Operating Manuals.~~

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: ~~OR-OSHA Admin. Order 16-1991, f. 12/16/91, ef. 1/1/92.]~~

~~[APPENDIX OR-F Curriculum for Crane Safety Refresher Training.~~

Unit of Study	Instruction
OR-OSHA REQUIREMENTS	Division 3, Subdivision N.
RESPONSIBILITIES	Site supervisor's responsibilities. Crane owner's responsibilities. Operator's responsibilities.
CENTER OF GRAVITY	Crane center of gravity. Load center of gravity. Combined center of gravity. Effect of boom position on combined center of gravity.
RADIUS	Changes in load, boom angle and rotation point.
LOAD	Load on lattice boom cranes. Load on hydraulic cranes. Load on hydraulic crane boom extensions. Load on the jib of lattice and hydraulic boom cranes. Gross capacity vs. net capacity. Static and dynamic loads.
TIPPING AXIS	Rough terrain cranes: Tipping axis. Crawler mounted cranes: Tipping axis.
CALCULATIONS	Overloads and tipping. Division of load charts. Main boom capacity — lattice booms. Values of boom angle, boom length and load radius between chart listings. Parts of line. Crane capacities. Range diagrams.
ACCIDENT PREVENTION	Common causes of tower whirley accidents. Rigging the load. Handling the load. Electrical hazards. Review/analysis of known incidents/accidents.

Stat. Auth.: ORS 654.025(2) and 656.726(3).

Hist: ~~OR-OSHA Admin. Order 6-1994, f. 9/30/94, ef. 9/30/94.]~~

~~[1926.1427 Operator qualification and certification.~~

~~(a) The employer must ensure that, prior to operating any equipment covered under subpart GC, the person is operating the equipment during a training period in accordance with paragraph (f) of this section, or the operator is qualified or certified to operate the equipment in accordance with the following:~~

~~(1) When a non-military government entity issues operator licenses for equipment~~

covered under subpart CC, and that government licensing program meets the requirements of paragraphs (e)(2) and (j) of this section, the equipment operator must either be:

- (i) licensed by that government entity for operation of equipment within that entity's jurisdiction; or
- (ii) qualified in compliance with paragraph (d) of this section.

~~(2) Where paragraph (a)(1) of this section is not applicable, the certification or qualification must comply with one of the options in paragraphs (b) through (d) of this section.~~

~~(3) Exceptions: Operator qualification or certification under this section is not required for operators of derricks (see 1926.1436), sideboom cranes (see 1926.1440), or equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 pounds or less (see 1926.1441).~~

~~(4) Whenever operator qualification or certification is required under 1926.1427, the employer must provide the qualification or certification at no cost to operators who are employed by the employer on November 8, 2010.~~

~~(b) Option (1): Certification by an accredited crane operator testing organization.~~

~~(1) For a testing organization to be considered accredited to certify operators under this subpart, it must:~~

~~(i) Be accredited by a nationally recognized accrediting agency based on that agency's determination that industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel have been met.~~

~~(ii) Administer written and practical tests that:~~

~~(A) Assess the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.~~

~~(B) Provide different levels of certification based on equipment capacity and type.~~

~~(iii) Have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.~~

~~(iv) Have testing procedures for re-certification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.~~

~~(v) Have its accreditation reviewed by the nationally recognized accrediting agency at least every three years.~~

~~(2) An operator will be deemed qualified to operate a particular piece of equipment if the operator is certified under paragraph (b) of this section for that type and capacity of~~

~~equipment or for higher capacity equipment of that type. If no accredited testing agency offers certification examinations for a particular type and/or capacity of equipment, an operator will be deemed qualified to operate that equipment if the operator has been certified for the type/capacity that is most similar to that equipment and for which a certification examination is available. The operator's certificate must state the type/capacity of equipment for which the operator is certified.~~

~~(3) A certification issued under this option is portable and meets the requirements of paragraph (a)(2) of this section.~~

~~(4) A certification issued under this paragraph is valid for 5 years.~~

~~(c) Option (2): Qualification by an audited employer program. The employer's qualification of its employee must meet the following requirements:~~

~~(1) The written and practical tests must be either:~~

~~(i) Developed by an accredited crane operator testing organization (see paragraph (b) of this section); or~~

~~(ii) Approved by an auditor in accordance with the following requirements:~~

~~(A) The auditor is certified to evaluate such tests by an accredited crane operator testing organization (see paragraph (b) of this section).~~

~~(B) The auditor is not an employee of the employer.~~

~~(C) The approval must be based on the auditor's determination that the written and practical tests meet nationally recognized test development criteria and are valid and reliable in assessing the operator applicants regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.~~

~~(D) The audit must be conducted in accordance with nationally recognized auditing standards.~~

~~(2) Administration of tests.~~

~~(i) The written and practical tests must be administered under circumstances approved by the auditor as meeting nationally recognized test administration standards.~~

~~(ii) The auditor must be certified to evaluate the administration of the written and practical tests by an accredited crane operator testing organization (see paragraph (b) of this section).~~

~~(iii) The auditor must not be an employee of the employer.~~

~~(iv) The audit must be conducted in accordance with nationally recognized auditing standards.~~

~~(3) The employer program must be audited within 3 months of the beginning of the program and at least every 3 years thereafter.~~

~~(4) The employer program must have testing procedures for re-qualification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section. The re-qualification procedures must be audited in accordance with paragraphs (c)(1) and (2) of this section.~~

~~(5) Deficiencies. If the auditor determines that there is a significant deficiency (“deficiency”) in the program, the employer must ensure that:~~

~~(i) No operator is qualified until the auditor confirms that the deficiency has been corrected.~~

~~(ii) The program is audited again within 180 days of the confirmation that the deficiency was corrected.~~

~~(iii) The auditor files a documented report of the deficiency to the appropriate Regional Office of the Occupational Safety and Health Administration within 15 days of the auditor’s determination that there is a deficiency.~~

~~(iv) Records of the audits of the employer’s program are maintained by the auditor for three years and are made available by the auditor to the Secretary of Labor or the Secretary’s designated representative upon request.~~

~~(6) A qualification under this paragraph is:~~

~~(i) Not portable. Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.~~

~~(ii) Valid for 5 years.~~

~~(d) Option (3): Qualification by the U.S. military.~~

~~(1) For purposes of this section, an operator who is an employee of the U.S. military is considered qualified if he/she has a current operator qualification issued by the U.S. military for operation of the equipment. An employee of the U.S. military is a federal employee of the Department of Defense or Armed Forces and does not include employees of private contractors.~~

~~(2) A qualification under this paragraph is:~~

~~(i) Not portable. Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.~~

~~(ii) Valid for the period of time stipulated by the issuing entity.~~

~~(e) Option (4): Licensing by a government entity.~~

~~(1) For purposes of this section, a government licensing department/office that issues operator licenses for operating equipment covered by this standard is considered a government accredited crane operator testing organization if the criteria in paragraph (e)(2) of this section are met.~~

~~(2) Licensing criteria.~~

~~(i) The requirements for obtaining the license include an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.~~

~~(ii) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.~~

~~(iii) The government authority that oversees the licensing department/office, has determined that the requirements in paragraphs (e)(2)(i) and (ii) of this section have been met.~~

~~(iv) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.~~

~~(3) A license issued by a government accredited crane operator testing organization that meets the requirements of this option:~~

~~(i) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity.~~

~~(ii) Is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.~~

~~(f) Pre-qualification/certification training period. An employee who is not qualified or certified under this section is permitted to operate equipment only as an operator-in-training and only where the requirements of this paragraph are met.~~

~~(1) The employer must provide each operator-in-training with sufficient training prior to operating the equipment to enable the operator-in-training to operate the equipment safely under limitations established by this section (including continuous monitoring) and any additional limitations established by the employer.~~

~~(2) The tasks performed by the operator-in-training while operating the equipment must be within the operator-in-training's ability.~~

~~(3) Trainer. While operating the equipment, the operator-in-training must be continuously monitored by an individual ("operator's trainer") who meets all of the following requirements:~~

~~(i) The operator's trainer is an employee or agent of the operator-in-training's employer.~~

~~(ii) The operator's trainer is either a certified operator under this section, or has passed the written portion of a certification test under one of the options in paragraphs (b) through (e) of this section, and is familiar with the proper use of the equipment's controls.~~

~~(iii) While monitoring the operator-in-training, the operator's trainer performs no tasks that detract from the trainer's ability to monitor the operator-in-training.~~

~~(iv) For equipment other than tower cranes: the operator's trainer and the operator-in-training must be in direct line of sight of each other. In addition, they must communicate verbally or by hand signals. For tower cranes: the operator's trainer and the operator-in-training must be in direct communication with each other.~~

~~(4) Continuous monitoring. The operator-in-training must be monitored by the operator's trainer at all times, except for short breaks where all of the following are met:~~

~~(i) The break lasts no longer than 15 minutes and there is no more than one break per hour.~~

~~(ii) Immediately prior to the break the operator's trainer informs the operator-in-training of the specific tasks that the operator-in-training is to perform and limitations to which he/she must adhere during the operator trainer's break.~~

~~(iii) The specific tasks that the operator-in-training will perform during the operator trainer's break are within the operator-in-training's abilities.~~

~~(5) The operator-in-training must not operate the equipment in any of the following circumstances unless the exception stated in paragraph (f)(5)(v) of this section is applicable:~~

~~(i) If any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone (see 1926.1408(a)(1)), could get within 20 feet of a power line that is up to 350kV, or within 50 feet of a power line that is over 350 kV.~~

~~(ii) If the equipment is used to hoist personnel.~~

~~(iii) In multiple-equipment lifts.~~

~~(iv) If the equipment is used over a shaft, cofferdam, or in a tank farm.~~

~~(v) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training skills are sufficient for this high-skill work.~~

~~(g) Under this section, a testing entity is permitted to provide training as well as testing services as long as the criteria of the applicable accrediting agency (in the option selected) for an organization providing both services are met.~~

~~(h) Language and Literacy Requirements.~~

~~(1) Tests under this section may be administered verbally, with answers given verbally, where the operator candidate:~~

~~(i) Passes a written demonstration of literacy relevant to the work.~~

~~(ii) Demonstrates the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the candidate is seeking certification.~~

~~(2) Tests under this section may be administered in any language the operator candidate understands, and the operator's certificate must note the language in which the test was given. The operator is qualified under paragraph (b)(2) of this section to operate equipment that is furnished with materials required by this subpart that are written in the language of the certification. The operator may only operate equipment furnished with such materials.~~

~~(i) [Reserved.]~~

~~(j) Certification criteria. Qualifications and certifications must be based, at a minimum, on the following:~~

~~(1) A determination through a written test that:~~

~~(i) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:~~

~~(A) The controls and operational/performance characteristics.~~

~~(B) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.~~

~~(C) Procedures for preventing and responding to power line contact.~~

~~(D) Technical knowledge similar to the subject matter criteria listed in Appendix C of this subpart applicable to the specific type of equipment the individual will operate. Use of the Appendix C criteria meets the requirements of this provision.~~

~~(E) Technical knowledge applicable to:~~

~~(1) The suitability of the supporting ground and surface to handle expected loads.~~

~~(2) Site hazards.~~

~~(3) Site access.~~

~~(F) This subpart, including applicable incorporated materials.~~

~~(ii) The individual is able to read and locate relevant information in the equipment~~

~~manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.~~

~~(2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following:~~

~~(i) Ability to recognize, from visual and auditory observation, the items listed in 1926.1412(d) (shift inspection).~~

~~(ii) Operational and maneuvering skills.~~

~~(iii) Application of load chart information.~~

~~(iv) Application of safe shut-down and securing procedures.~~

~~(k) Phase in.~~

~~(1) The provisions of this section became applicable November 8, 2010, except for paragraphs (a)(2) and (f) which are applicable November 10, 2017.~~

~~(2) When 1926.1427(a)(1) is not applicable, all of the requirements in paragraphs (k)(2)(i) and (ii) of this section apply until November 10, 2017:~~

~~(i) The employer must ensure that operators of equipment covered by this standard are competent to operate the equipment safely.~~

~~(ii) Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employer must train that employee prior to operating the equipment. The employer must ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.~~

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 1-2011, f. 2/9/11, ef. 2/9/11.

OR-OSHA Admin. Order 7-2014, f. 11/7/14, ef. 11/9/14.]

1926.1427 Operator training, certification, and evaluation.

(a) General requirements for operators. The employer must ensure that each operator is trained, certified/licensed, and evaluated in accordance with this section before operating any equipment covered under Subpart CC, except for the equipment listed in paragraph (a)(2) of this section.

(1) Operation during training. An employee who has not been certified/licensed and evaluated to operate assigned equipment in accordance with this section may only operate the equipment as an operator-in-training under supervision in accordance with the requirements of paragraph (b) of this section.

(2) Exceptions. Operators of derricks (see §1926.1436), sideboom cranes (see § 1926.1440), or equipment with a maximum manufacturer-rated hoisting/ lifting

capacity of 2,000 pounds or less (see §1926.1441) are not required to comply with §1926.1427. Note: The training requirements in those other sections continue to apply (for the training requirement for operators of sideboom cranes, follow section 1926.1430(c)).

(3) Qualification by the U.S. military.

(i) For purposes of this section, an operator who is an employee of the U.S. military meets the requirements of this section if he/she has a current operator qualification issued by the U.S. military for operation of the equipment. An employee of the U.S. military is a Federal employee of the Department of Defense or Armed Forces and does not include employees of private contractors.

(ii) A qualification under this paragraph is:

(A) Not portable: Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.

(B) Valid for the period of time stipulated by the issuing entity.

(b) Operator training. The employer must provide each operator-in-training with sufficient training, through a combination of formal and practical instruction, to ensure that the operator-in-training develops the skills, knowledge, and ability to recognize and avert risk necessary to operate the equipment safely for assigned work.

(1) The employer must provide instruction on the knowledge and skills listed in paragraphs (j)(1) and (2) of this section to the operator-in-training.

(2) The operator-in-training must be continuously monitored on site by a trainer while operating equipment.

(3) The employer may only assign tasks within the operator-in-training's ability. However, except as provided in paragraph (b)(3)(v) of this section, the operator-in-training shall not operate the equipment in any of the following circumstances unless certified in accordance with paragraph (c) of this section:

(i) If any part of the equipment, load line, or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone (see §1926.1408(a)(1)), could get within 20 feet of a power line that is up to 350 kV, or within 50 feet of a power line that is over 350 kV.

(ii) If the equipment is used to hoist personnel.

(iii) In multiple-equipment lifts.

(iv) If the equipment is used over a shaft, cofferdam, or in a tank farm.

(v) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training's skills are sufficient for this high-skill work.

(4) The employer must ensure that an operator-in-training is monitored as follows when operating equipment covered by this subpart:

(i) While operating the equipment, the operator-in-training must be continuously monitored by an individual ("operator's trainer") who meets all of the following requirements:

(A) The operator's trainer is an employee or agent of the operator-in-training's employer.

(B) The operator's trainer has the knowledge, training, and experience necessary to direct the operator-in-training on the equipment in use.

(ii) While monitoring the operator-in-training, the operator's trainer performs no tasks that detract from the trainer's ability to monitor the operator-in-training.

(iii) For equipment other than tower cranes: The operator's trainer and the operator-in-training must be in direct line of sight of each other. In addition, they must communicate verbally or by hand signals. For tower cranes: The operator's trainer and the operator-in-training must be in direct communication with each other.

(iv) The operator-in-training must be monitored by the operator's trainer at all times, except for short breaks where all of the following are met:

(A) The break lasts no longer than 15 minutes and there is no more than one break per hour.

(B) Immediately prior to the break the operator's trainer informs the operator-in-training of the specific tasks that the operator-in-training is to perform and limitations to which he/she must adhere during the operator trainer's break.

(C) The specific tasks that the operator-in-training will perform during the operator trainer's break are within the operator-in-training's abilities.

(5) Retraining. The employer must provide retraining in relevant topics for each operator when, based on the performance of the operator or an evaluation of the operator's knowledge, there is an indication that retraining is necessary.

(c) Operator certification and licensing. The employer must ensure that each operator is certified or licensed to operate the equipment as follows:

(1) Licensing. When a state or local government issues operator licenses for

equipment covered under Subpart CC, the equipment operator must be licensed by that government entity for operation of equipment within that entity's jurisdiction if that government licensing program meets the following requirements:

(i) The requirements for obtaining the license include an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(ii) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel.

(iii) The government authority that oversees the licensing department/office has determined that the requirements in paragraphs (c)(1)(i) and (ii) of this section have been met.

(iv) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

(v) For the purposes of compliance with this section, a license is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.

(2) Certification. When an operator is not required to be licensed under paragraph (c)(1) of this section, the operator must be certified in accordance with paragraph (d) or (e) of this section.

(3) No cost to employees. Whenever operator certification/licensure is required under this section, the employer must provide the certification/licensure at no cost to employees.

(4) Provision of testing and training. A testing entity is permitted to provide training as well as testing services as long as the criteria of the applicable governmental or accrediting agency (in the option selected) for an organization providing both services are met.

(d) Certification by an accredited crane operator testing organization.

(1) For a certification to satisfy the requirements of this section, the crane operator testing organization providing the certification must:

(i) Be accredited by a nationally recognized accrediting agency based on that agency's determination that industry-recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel have been met.

(ii) Administer written and practical tests that:

(A) Assess the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(B) Provide certification based on equipment type, or type and capacity.

(iii) Have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.

(iv) Have testing procedures for recertification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

(v) Have its accreditation reviewed by the nationally recognized accrediting agency at least every 3 years.

(2) If no accredited testing agency offers certification examinations for a particular type of equipment, an operator will be deemed to have complied with the certification requirements of this section for that equipment if the operator has been certified for the type that is most similar to that equipment and for which a certification examination is available. The operator's certificate must state the type of equipment for which the operator is certified.

(3) A certification issued under this option is portable among employers who are required to have operators certified under this option.

(4) A certification issued under this paragraph is valid for 5 years.

(e) Audited employer program. The employer's certification of its employee must meet the following requirements:

(1) Testing. The written and practical tests must be either:

(i) Developed by an accredited crane operator testing organization (see paragraph (d) of this section); or

(ii) Approved by an auditor in accordance with the following requirements:

(A) The auditor is certified to evaluate such tests by an accredited crane operator testing organization (see paragraph (d) of this section).

(B) The auditor is not an employee of the employer.

(C) The approval must be based on the auditor's determination that the written and practical tests meet nationally recognized test development criteria and are valid and reliable in assessing the operator applicants regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(D) The audit must be conducted in accordance with nationally recognized auditing standards.

(2) Administration of tests.

(i) The written and practical tests must be administered under circumstances approved by the auditor as meeting nationally recognized test administration standards.

(ii) The auditor must be certified to evaluate the administration of the written and practical tests by an accredited crane operator testing organization (see paragraph (d) of this section).

(iii) The auditor must not be an employee of the employer.

(iv) The audit must be conducted in accordance with nationally recognized auditing standards.

(3) Timing of audit. The employer program must be audited within 3 months of the beginning of the program and at least every 3 years thereafter.

(4) Requalification. The employer program must have testing procedures for re-qualification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section. The re-qualification procedures must be audited in accordance with paragraphs (e)(1) and (2) of this section.

(5) Deficiencies. If the auditor determines that there is a significant deficiency (“deficiency”) in the program, the employer must ensure that:

(i) No operator is qualified until the auditor confirms that the deficiency has been corrected.

(ii) The program is audited again within 180 days of the confirmation that the deficiency was corrected.

(iii) The auditor files a documented report of the deficiency to the appropriate Regional Office of the Occupational Safety and Health Administration within 15 days of the auditor’s determination that there is a deficiency.

(iv) Records of the audits of the employer’s program are maintained by the auditor for 3 years and are made available by the auditor to the Secretary of Labor or the Secretary’s designated representative upon request.

(6) Audited-program certificates. A certification under this paragraph is:

(i) Not portable: Such a certification meets the requirements of paragraph (c) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the certification.

(ii) Valid for 5 years.

(f) Evaluation.

(1) Through an evaluation, the employer must ensure that each operator is qualified by a demonstration of:

(i) The skills and knowledge, as well as the ability to recognize and avert risk, necessary to operate the equipment safely, including those specific to the safety devices, operational aids, software, and the size and configuration of the equipment. Size and configuration includes, but is not limited to, lifting capacity, boom length, attachments, luffing jib, and counterweight set-up.

(ii) The ability to perform the hoisting activities required for assigned work, including, if applicable, blind lifts, personnel hoisting, and multi-crane lifts.

(2) For operators employed prior to December 10, 2018, the employer may rely on its previous assessments of the operator in lieu of conducting a new evaluation of that operator's existing knowledge and skills.

(3) The definition of "qualified" in §1926.32 does not apply to paragraph (f)(1) of this section: Possession of a certificate or degree cannot, by itself, cause a person to be qualified for purposes of paragraph (f)(1).

(4) The evaluation required under paragraph (f)(1) of this section must be conducted by an individual who has the knowledge, training, and experience necessary to assess equipment operators.

(5) The evaluator must be an employee or agent of the employer. Employers that assign evaluations to an agent retain the duty to ensure that the requirements in paragraph (f) are satisfied. Once the evaluation is completed successfully, the employer may allow the operator to operate other equipment that the employer can demonstrate does not require substantially different skills, knowledge, or ability to recognize and avert risk to operate.

(6) The employer must document the completion of the evaluation. This document must provide: The operator's name; the evaluator's name and signature; the date; and the make, model, and configuration of equipment used in the evaluation. The employer must make the document available at the worksite while the operator is employed by the employer. For operators assessed per paragraph (f)(2) of this section, the documentation must reflect the date of the employer's determination of the operator's abilities and the make, model and configuration of equipment on which the operator has previously demonstrated competency.

(7) When an employer is required to provide an operator with retraining under paragraph (b)(5) of this section, the employer must re-evaluate the operator with respect to the subject of the retraining.

(g) [Reserved].

(h) Language and literacy requirements.

(1) Tests under this section may be administered verbally, with answers given verbally, where the operator candidate:

(i) Passes a written demonstration of literacy relevant to the work.

(ii) Demonstrates the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the candidate is seeking certification.

(2) Tests under this section may be administered in any language the operator candidate understands, and the operator's certification documentation must note the language in which the test was given. The operator is only permitted to operate equipment that is furnished with materials required by this subpart, such as operations manuals and load charts, that are written in the language of the certification.

(i) [Reserved].

(j) Certification criteria. Certifications must be based on the following:

(1) A determination through a written test that:

(i) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:

(A) The controls and operational/performance characteristics.

(B) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.

(C) Procedures for preventing and responding to power line contact.

(D) Technical knowledge of the subject matter criteria listed in appendix C of this subpart applicable to the specific type of equipment the individual will operate. Use of the appendix C criteria meets the requirements of this provision.

(E) Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, site hazards, and site access.

(F) This subpart, including applicable incorporated materials.

(ii) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.

(2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following:

(i) Ability to recognize, from visual and auditory observation, the items listed in §1926.1412(d) (shift inspection).

(ii) Operational and maneuvering skills.

(iii) Application of load chart information.

(iv) Application of safe shut-down and securing procedures.

(k) Effective dates.

(1) Apart from the evaluation and documentation requirements in paragraphs (a) and (f), this section is effective on December 10, 2018.

(2) The evaluation and documentation requirements in paragraphs (a) and (f) are effective on February 7, 2019.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 1-2011, f. 2/9/11, ef. 2/9/11.

OR-OSHA Admin. Order 7-2014, f. 11/7/14, ef. 11/9/14.

OR-OSHA Admin. Order X-XXXX, f. XX/XX/XX, ef. XX/XX/XX.

1926.1430 Training. The employer must provide training as follows:

(a) Overhead powerlines. The employer must train each employee specified in 1926.1408(g) and 1926.1410(m) in the topics listed in 1926.1408(g).

(b) Signal persons. The employer must train each employee who will be assigned to work as a signal persons who does not meet the requirements of 1926.1428(c) in the areas addressed in that paragraph.

(c) Operators.

~~[(1) Operators in Training for equipment where certification or qualification is required by this subpart. The employer must train each operator in training in the areas addressed in 1926.1427(j). The employer must provide re-training if the operator in training does not pass a qualification or certification test.]~~

(1) The employer must train each operator in accordance with §1926.1427(a) and (b), on the safe operation of the equipment the operator will be using.

~~[(2) Transitional Period. During the four-year phase-in period for operator certification or qualification, as provided in 1926.1427(k), employers must train each operator who has not yet been certified or qualified in the areas addressed in 1926.1427(j).]~~

(2). The employer must train each operator covered under the exception of § 1926.1427(a)(2) on the safe operation of the equipment the operator will be using.

~~[(3) Operators excepted from the requirements of 1926.1427. The employer must train each operator excepted under 1926.1427(a) from the requirements of 1926.1427 on the safe operation of the equipment the operator will be using.]~~

~~[(4)]~~**(3)** The employer must train each operator of the equipment covered by this subpart in the following practices:

(i) On friction equipment, whenever moving a boom off a support, first raise the boom a short distance (sufficient to take the load of the boom) to determine if the boom hoist brake needs to be adjusted. On other types of equipment with a boom, the same practice is applicable, except that typically there is no means of adjusting the brake; if the brake does not hold, a repair is necessary. See 1926.1417(f) and (j) for additional requirements.

(ii) Where available, the manufacturer's emergency procedures for halting unintended equipment movement.

(d) Competent persons and qualified persons. The employer must train each competent person and each qualified person regarding the requirements of this subpart applicable to their respective roles.

(e) Crush/pinch points. The employer must train each employee who works with the equipment to keep clear of holes, and crush/pinch points and the hazards addressed in 1926.1424 (Work area control).

(f) Tag-out. The employer must train each operator and each additional employee authorized to start/energize equipment or operate equipment controls (such as maintenance and repair employees), in the tag-out and start-up procedures in 1926.1417(f) and (g).

(g) Training administration.

(1) The employer must evaluate each employee required to be trained under this subpart to confirm that the employee understands the information provided in the training.

(2) The employer must provide refresher training in relevant topics for each employee when, based on the conduct of the employee or an evaluation of the employee's knowledge, there is an indication that retraining is necessary.

(3) Whenever training is required under subpart CC, the employer must provide the training at no cost to the employee.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 1-2011, f. 2/9/11, ef. 2/9/11.

OR-OSHA Admin. Order X-XXXX, f. XX/XX/XX, ef. XX/XX/XX.