

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Agency

Department of Public Safety

Subject

State Examining Board for Crane Operators

Inclusive Sections

§§ 29-223-1—29-223-26a

CONTENTS

Sec. 29-223-1—29-223-9. Repealed

Safety Code for the Operation and Maintenance of Cranes

Sec. 29-223-10—29-223-14. Repealed

Sec. 29-233-15—29-233-16. Repealed

Connecticut Examining Board for Crane Operators

Sec. 29-223-1a. Classifications of crane operator's licenses

Sec. 29-223-2a. Requirements for examination

Sec. 29-223-3a. Applicant qualifications

Sec. 29-223-4a. Procedures for issuance and renewal of licenses and apprentice certificates

Sec. 29-223-5a. Registration requirements

Safety Code for the Operation and Maintenance of Cranes

Sec. 29-223-6a. General provisions

Sec. 29-223-7a. Adopted standards

Sec. 29-223-8a. Connecticut Supplement to ASME B30.3-1996

Sec. 29-223-9a. Connecticut Supplement to ASME B30.4-1996

Sec. 29-223-10a. Connecticut Supplement to ASME B30.5-1994 and ASME B30.5a-1995

Sec. 29-223-11a. Connecticut Supplement to ASME B30.6-1995

Examining Board for Crane Operators

Sec. 29-223-12a. Special provisions for derricks

Hoisting Equipment Operators and Apprentices

Sec. 29-223-13a. Definitions

Sec. 29-223-14a. Operator and apprentice qualifications

Sec. 29-223-15a. Requirements for examination

Sec. 29-223-16a. Procedures for issuance and renewal of licenses and

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

- registrations
Sec. 29-223-17a. Training of apprentices

Hoisting Equipment Operator Safety Code

- Sec. 29-223-18a. Operating safety rules and practices. Operator responsibility
Sec. 29-223-19a. General lifting requirements
Sec. 29-223-20a. General signal requirements
Sec. 29-223-21a. Preventive maintenance. Maintenance procedures
Sec. 29-223-22a. Adjustments and repairs. Lubrication
Sec. 29-223-23a. General inspection requirements
Sec. 29-223-24a. Personnel lifting
Sec. 29-223-25a. Operating near electric power lines
Sec. 29-223-26a. Additional safety requirements

State Examining Board for Crane Operators

Sec. 29-223-1—29-223-9. Repealed

Repealed August 27, 1999.

Safety Code for the Operation and Maintenance of Cranes

Sec. 29-223-10—29-223-14. Repealed

Repealed August 27, 1999.

Sec. 29-233-15—29-233-16. Repealed

Repealed February 2, 2010.

Connecticut Examining Board for Crane Operators

Sec. 29-223-1a. Classifications of crane operator's licenses

The Crane Operators Examining Board, hereafter "the Board," may issue separate operator's licenses for individuals operating the following classifications of cranes: tower cranes, hydraulic cranes, derrick cranes, and mobile cable cranes.

(Adopted effective August 27, 1999)

Sec. 29-223-2a. Requirements for examination

(a) General Examination.

Each applicant for a crane operator's license shall, and each applicant for a renewal license may, be required to take a general written examination designed to test the applicant's knowledge of generally accepted safety standards.

(b) Operating Examination.

Each applicant who receives a passing score on the general examination shall also be required to successfully complete an operating examination designed to test his or her competence in the safe operation of a crane by performing certain tasks such as raising and lowering a load, raising and lowering the boom, swinging the crane with a suspended load, braking, and understanding hand signals.

(Adopted effective August 27, 1999)

Sec. 29-223-3a. Applicant qualifications

(a) Qualifications of Applicants Not Previously Licensed in Connecticut.

Applicants not previously licensed in Connecticut shall meet the following qualifications:

- (1) Each applicant shall be at least 18 years of age;
 - (2) Each applicant shall have at least two years of experience in the operation of a crane;
- and
- (3) Each applicant shall successfully complete both the general and operating examinations administered by the Board.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-4a

Department of Public Safety

(b) Apprentice's Certificate of Registration.

An apprentice's certificate of registration may be issued to an individual who is not eligible for licensing because he or she does not have two years of experience operating a crane. Such certificate shall entitle the holder to operate a crane under the general supervision of a licensed crane operator.

(Adopted effective August 27, 1999)

Sec. 29-223-4a. Procedures for issuance and renewal of licenses and apprentice certificates

(a) Applications for New Licenses.

Each applicant for licensing shall complete an application form and pay an examination fee of \$50. If such candidate meets the age and experience requirements, the Board shall schedule a general examination. If the applicant receives a passing score on the general examination, the Board shall schedule an operating examination. If the applicant receives a passing score on the operating examination, the Board shall issue a two-year license upon payment of the licensing fee and submission of a passport-sized photograph.

(b) Licensing Fees.

The fee for both the initial two-year operator's license and each renewal thereof shall be \$50.

(c) Apprentice's Certificates of Registration.

Each applicant for an apprentice's certificate shall complete an application form, pay an initial application fee of \$25, provide a passport-sized photograph and submit a letter from an employer or training officer stating that the individual will receive training under the supervision of a licensed crane operator.

(d) Renewals and Replacements.

(1) The holder shall submit a renewal application, together with a passport-sized photograph and payment of the renewal fee.

(2) An application for renewal of a crane operator's license shall be made within one year of the expiration date of the license, unless such requirement would cause undue hardship. Any application for license renewal received more than one year after expiration of the operator's current license shall be processed as an application for initial licensing, which shall require that the applicant successfully complete the general and practical examinations.

(3) The holder of a valid license or apprentice's certificate may, upon application and payment of a \$5 fee, obtain a duplicate license or certificate in the event that the originally issued license or certificate is lost or mutilated.

(Adopted effective August 27, 1999)

Sec. 29-223-5a. Registration requirements

(a) The annual fee for initial registration of a crane shall be \$40.

(b) The annual fee for initial registration of a crane owned by a dealer shall be \$40. Such

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-7a

registrations may be affixed to a crane being delivered to a buyer or made available to someone other than its owner as part of a rental agreement or for demonstration purposes. Information sufficient to identify the lessee or recipient of such demonstration shall be provided to the Board upon request. For the purposes of this section, “dealer” means a person, firm or corporation engaged in the business of selling or leasing cranes.

(c) Renewal registrations shall be issued upon application and the payment of a \$25 annual fee, provided such application is received within 30 days of the expiration of the current registration. Any renewal application received more than 30 days after the expiration of the current registration shall be processed as an initial registration.

(d) The registration certificate shall be affixed to the crane in the principal operating location.

(Adopted effective August 27, 1999)

Safety Code for the Operation and Maintenance of Cranes

Sec. 29-223-6a. General provisions

(a) Safety Protection Required.

Each owner, lessee, employer or contractor responsible for the operation of a crane subject to the requirements of Sections 29-223-6a to 29-223-11a, inclusive, shall ensure that such crane is operated in accordance with the provisions of Sections 29-223a-6a to 29-223-11a, inclusive.

(b) General Requirements of Competency.

The installation and maintenance of any device required by Sections 29-223a-6a to 29-223-11a, inclusive, shall be performed by a person experienced in the operation, maintenance and repair of cranes, as defined in Section 29-221 of the Connecticut General Statutes.

(c) Condition of Equipment and Safeguards.

(1) No owner, lessee, employer or contractor shall require or permit an employee to operate any crane in violation of the provisions of Sections 29-223a-6a to 29-223-11a, inclusive.

(2) All cranes shall be operated in accordance with the manufacturer’s requirements for safe lifting and the specific requirements of Sections 29-223-6a to 29-223-11a, inclusive.

(3) The safety of any modification affecting the structural stability of a crane shall be certified by the manufacturer or a licensed professional engineer. Structural welding shall only be performed by a welder certified by the American Welding Society.

(Adopted effective August 27, 1999)

Sec. 29-223-7a. Adopted standards

(a) The following standards promulgated by the American Society of Mechanical Engineers (ASME) are adopted by reference as regulations of the Department of Public Safety:

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-8a

Department of Public Safety

ASME B30.3-1996	Construction Tower Cranes;
ASME B30.3a-1997	Addenda, Construction Tower Cranes;
ASME B30.3b-1998	Addenda, Construction Tower Cranes;
ASME B30.4-1996	Portal, Tower and Pedestal Cranes;
ASME B30.4a-1998	Addenda, Portal, Tower and Pedestal Cranes;
ASME B30.5-1994	Mobile and Locomotive Cranes;
ASME B30.5a-1995	Addenda, Mobile and Locomotive Cranes;
ASME B30.5b-1996	Addenda, Mobile and Locomotive Cranes;
ASME B30.5c-1998	Addenda, Mobile and Locomotive Cranes;
ASME B30.6-1995	Derricks; and
ASME B30.6a-1998	Addenda, Derricks.

(b) The standards promulgated by the American Society of Mechanical Engineers are available by writing ASME at 345 East 47th Street, New York, NY 10017.

Note: A section or subsection in the Connecticut Supplement preceded by “Del” indicates the deletion of this section or subsection from the adopted referenced standard.

(Adopted effective August 27, 1999)

Sec. 29-223-8a. Connecticut Supplement to ASME B30.3-1996

ASME B30.3-1996, Construction Tower Cranes, is amended to meet the needs of Connecticut as follows:

CHAPTER 3-3

Operation

3-3.1: Qualifications for and Conduct of Operators and Operating Practices

(Del) 3-3.1.1 Operators

(Del) 3-3.1.2 Qualification for Operators

(Adopted effective August 27, 1999)

Sec. 29-223-9a. Connecticut Supplement to ASME B30.4-1996

ASME B30.4-1996, Portal, Tower, and Pedestal Cranes, is amended to meet the needs of Connecticut as follows:

CHAPTER 4-3

Operation

4-3.1: Qualifications for and Conduct of Operations and Operating Practices

(Del) 4-3.1.1 Operators

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-11a

(Del) 4-3.1.2 Qualification for Operators

(Adopted effective August 27, 1999)

Sec. 29-223-10a. Connecticut Supplement to ASME B30.5-1994 and ASME B30.5a-1995

(a) ASME B30.5-1994, Mobile and Locomotive Cranes, is amended to meet the needs of Connecticut as follows:

CHAPTER 5-3

Operation

5-3.1: Qualifications for and Conduct of Operators and Operating Practices

(Del) 5-3.1.1 Operators

(Del) 5-3.1.2 Qualifications for Operators

(b) ASME B30.5a-1995, Addenda, Mobile and Locomotive Cranes, is amended to meet the needs of Connecticut as follows:

CHAPTER 5-0

Scope, Definitions and References

5-0.2.2 General

(Del) qualified operator - an operator who has met the requirements of paras. 5-3.1.2(a), (b), and (c).

CHAPTER 5-3

Operation

5-3.1 Qualifications for and Conduct of Operators and Operating Practices

(Del) 5-3.1.1 Operators

(Del) 5-3.1.2 Qualifications for Operators

(Adopted effective August 27, 1999)

Sec. 29-223-11a. Connecticut Supplement to ASME B30.6-1995

ASME B30.6-1995, Derricks, is amended to meet the needs of Connecticut as follows:

CHAPTER 6-3

Operation

6-3.1 Qualifications for and Conduct of Director and Operating Practices

(Del) 6-3.1.1 Operation of Derricks

(Del) 6-3.1.2 Qualifications for Directors

6-3.2 Operator Qualifications and Operating Practices

(Del) 6-3.2.1 Operators

(Del) 6-3.2.2 Qualifications for Operators

(Adopted effective August 27, 1999)

Examining Board for Crane Operators

Sec. 29-223-12a. Special provisions for derricks

As circumstances require, the employer, the operator or both shall ensure the following:

(1) Bracing of foot blocks. The foot blocks of every derrick shall be securely supported and firmly anchored against movement in any direction.

(2) Guys.

(A) Number and spacing. The top of any guy derrick mast more than 25 feet in height shall be steadied by not less than six wire rope guys so spaced as to make angles between adjacent guys approximately equal.

(B) Attachment. Wire rope guys shall be secured by weldless steel sockets, thimble and splice connections, thimbles with proper size and numbers of rope clips or cast steel guy plates having grooved bearing surfaces of the same shape and size as the wire rope thimbles, using a spliced or wire rope clip attachment.

(C) Anchoring. Guys shall be attached to strong, permanent construction or to substantial “deadmen” or counterweights securely anchored in the ground.

(3) Breast-type derricks.

Breast-type derricks shall be guyed from both the front and rear. Where front guys are not possible because of derrick operation, provisions shall be made to prevent such derricks from tipping backward. Breast-type derricks that are operated by hand power shall have the hand grips securely and positively fastened to the shaft and a ratchet and pawl shall be provided that will hold any load.

(4) Derrick construction.

(A) Materials. The mast, boom, frame and similar parts of a derrick shall be constructed of suitable steel or of selected wood of proper strength and durability.

(B) Mast fittings. On derricks that have booms longer than the masts, the gudgeon pins, mast tops and goosenecks shall be securely fastened to the tops of the masts to prevent such parts from pulling out when the booms are raised.

(5) Derrick capacity charts.

(A) A capacity chart shall be provided for every derrick and such chart shall be posted conspicuously on the job site. Unless furnished by the manufacturer or builder of the derrick, the capacity chart shall be prepared and certified by a professional engineer licensed in the state of Connecticut and a copy thereof shall be submitted to the Commissioner of Public Safety upon request.

(B) A derrick shall not lift any load that exceeds the relevant maximum specified on its capacity chart.

(Adopted effective February 2, 2010)

Hoisting Equipment Operators and Apprentices

Sec. 29-223-13a. Definitions

For the purposes of sections 29-223-13a to 29-223-26a, inclusive, of the Regulations of Connecticut State Agencies:

- (1) “ANSI” means the American National Standards Institute;
- (2) “Board” shall have the meaning ascribed to it in section 29-221 of the Connecticut General Statutes;
- (3) “Commissioner” means the Commissioner of Public Safety;
- (4) “Competent person,” as determined by the employer or the employer’s designee, shall have the meaning ascribed to it in 29 CFR 1926.32, including a hoisting equipment operator if such operator meets the requirements of 29 CFR 1926.32;
- (5) “SAE” means the Society of Automotive Engineers; and
- (6) “Qualified,” as determined by the employer or the employer’s designee, shall have the meaning ascribed to it in 29 CFR 1926.32, including a hoisting equipment operator if such operator meets the requirements of 29 CFR 1926.32.

(Adopted effective February 2, 2010)

Sec. 29-223-14a. Operator and apprentice qualifications

- (a) An operator or apprentice shall be 18 years of age or older.
- (b) An operator or apprentice shall meet the physical requirements of regulations of the U.S. Department of Transportation, Federal Motor Carrier Safety Administration, at 49 CFR 391.41.
- (c) An operator shall successfully complete the licensing examination.

(Adopted effective February 2, 2010)

Sec. 29-223-15a. Requirements for examination

(a) General examination.

Each applicant for a hoisting equipment operator’s license shall be required to take a general written examination designed to test the applicant’s knowledge of generally accepted safety standards.

(b) Practical operating examination.

The board shall require each applicant for an initial hoisting equipment operator’s license who receives a passing score on the general examination to successfully complete a practical operating examination.

(c) Examination of an applicant for license renewal.

Each license renewal applicant shall continue to maintain the technical knowledge and skills required to operate hoisting equipment. Where appropriate, the The board may require demonstration of such knowledge or skills by general examination, a practical operating examination or both or by requiring the submission of such other information as may be necessary to make a determination. Such demonstration may be required in the event of an

accident or where the board receives information that an applicant has not maintained his or her technical knowledge or skills.

(Adopted effective February 2, 2010)

Sec. 29-223-16a. Procedures for issuance and renewal of licenses and registrations

(a) Application for a new operator's license.

Each applicant for a new operator's license shall complete an application form and pay an examination fee of \$50. If such candidate meets the age and experience requirements, the board shall schedule a general examination. If the applicant receives a passing score on the general examination, the board may schedule a practical operating examination. Upon successful completion of the examination or examinations, payment of the licensing fee and submission of a passport-sized photograph, the board shall issue a two-year operator's license.

(b) Application for a new apprentice's certificate of registration.

Each applicant for a new apprentice's certificate of registration shall complete an application form, pay an application fee of \$50, provide a passport-sized photograph and submit a letter from an employer or training officer stating that the applicant shall receive training under the supervision of a licensed hoisting equipment operator.

(c) Licensing fees.

(1) The fee for both the initial two-year operator's license and each two-year renewal thereof shall be \$200.

(2) The fee for both the initial two-year apprentice's certificate of registration and each two-year renewal thereof shall be \$50.

(d) License and registration certificate renewal and replacement.

(1) The holder of a license or registration certificate shall submit a renewal application, together with a passport-sized photograph and payment of the renewal fee.

(2) An application for renewal of a hoisting equipment operator's license or apprentice's certificate of registration shall be made no later than 60 days after the expiration date of the license or certificate of registration. During this 60-day period, operation shall be deemed to be operation without a license or certificate of registration. Any application for license or certificate renewal received more than 60 days after expiration of the current license or certificate shall be processed as an application for initial licensing or registration, which shall require examination in the case of the operator's license.

(3) The holder of a valid operator's license or apprentice's certificate of registration may, upon application and payment of a \$25 fee, obtain a duplicate license or certificate, in the event that the originally issued license or certificate is lost or mutilated.

(Adopted effective February 2, 2010)

Sec. 29-223-17a. Training of apprentices

(a) The employer shall provide an apprentice with sufficient training so that said apprentice may safely operate hoisting equipment.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-18a

(b) The tasks performed by the apprentice while operating the hoisting equipment shall be within the apprentice's ability.

(c) A trainer supervising an apprentice shall meet the following requirements:

- (1) The trainer shall be an employee or agent of the apprentice's employer;
- (2) The trainer shall hold a Connecticut hoisting equipment operator's license;
- (3) The trainer shall be familiar with the proper use of the hoisting equipment's controls;
- (4) While supervising the apprentice, the trainer shall perform no tasks that detract from the trainer's ability to supervise the apprentice; and

(5) The trainer and apprentice shall be in each other's direct line of sight and shall communicate verbally or by hand signals.

(d) The apprentice shall be supervised by the trainer at all times, except during breaks by the trainer lasting no longer than 15 minutes, provided that there shall be no more than one break per hour. The trainer shall inform the apprentice of the specific tasks to be performed, as well as any limitations associated with such tasks. Such tasks shall be within the apprentice's abilities.

(e) The apprentice shall not operate the hoisting equipment in any of the following circumstances:

- (1) If any part of the hoisting equipment, load line or load, including rigging and lifting accessories, if operated up to the hoisting equipment's maximum working radius in the work zone, could get within 20 feet of a power line that is over 350 kilovolts (kV);
- (2) If the equipment is used to hoist personnel; or
- (3) If the lift to be performed involves multiple pieces of hoisting equipment.

(Adopted effective February 2, 2010)

Hoisting Equipment Operator Safety Code

Sec. 29-223-18a. Operating safety rules and practices. Operator responsibility

(a) Safe operation is the responsibility of the operator; the operator is responsible for operations under his or her direct control. The operator shall develop safe working habits and be aware of hazardous conditions in order to protect the operator, other persons and the hoisting equipment and material.

(b) The operator shall be responsible for providing firm footing for the hoisting equipment to complete the lift safely or to transport the machine in a safe manner.

(c) **Storage of items in the cab.**

(1) Necessary clothing and personal belongings shall be stored in such a manner as to avoid interfering with access or operation.

(2) Tools, oil cans, waste and other necessary items shall be stored in the toolbox and shall not be permitted to lie loose in or about the cab.

(d) Whenever there is any concern about safety, the operator shall consult with a supervisor and cease operations until a qualified person has determined that the hoisting equipment may be safely operated.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-18a

Department of Public Safety

- (e) The operator shall obey a stop order from any legitimate source.
- (f) The operator shall be familiar with the operation and function of all hoisting equipment controls and instruments.
- (g) The operator shall read and be familiar with the operator's manual for the particular equipment operated.
- (h) The operator shall not engage in any practice that may divert such operator's attention from hoisting equipment operation.
- (i) The operator shall not operate hoisting equipment when mentally or physically unfit.
- (j) The operator shall respond to signals from the person directing the lift or the appointed signal person.
- (k) Before leaving hoisting equipment unattended, the operator shall:
 - (1) Land any load, bucket, lifting magnet or other device;
 - (2) Disengage the master clutch, if equipped;
 - (3) Set travel, swing, brakes and other locking devices;
 - (4) Put controls in the off or neutral position;
 - (5) Secure the hoist against accidental travel; and
 - (6) Stop the engine. When stops are frequent, the operator may leave the engine running when the operator is situated to observe unauthorized entry and the hoisting equipment is located within an area protected from unauthorized entry.
- (l) If the operator finds a warning sign on the switch or engine starting controls, the operator shall not close the switch or start the engine until the warning sign has been removed by a person with authority to do so.
- (m) Before closing the switch or starting the engine, the operator shall see that all controls are in the off or neutral position and that all persons are clear of the hoisting equipment.
- (n) If power fails during operations, the operator shall set all brakes and locking devices, move all clutches or other power controls to the off or neutral position and, if practical, land the suspended load under brake control.
- (o) The operator shall be familiar with the proper care of the hoisting equipment. The operator shall test all controls at the start of a new work shift, as provided by subsection (f) of section 29-223-23a of the Regulations of Connecticut State Agencies. If adjustments or repairs are necessary, the operator shall promptly report to a person responsible for the repair of such equipment and to the next operator. Operations may not begin until the necessary adjustments or repairs have been made.
- (p) The operator shall follow the manufacturer's boom assembly and disassembly procedures. If there is to be any deviation from such procedures, the boom or boom sections shall be blocked to prevent the boom from inadvertently dropping.
- (q) When removing pins or bolts from a boom, workers shall not be positioned underneath the boom.
- (r) The operator shall not operate such hoisting equipment unless a written copy of the load capacity chart is located by the operator's controls.
- (s) The operator shall not operate hoisting equipment for more than 16 continuous hours

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-19a

and the operator shall rest for at least 10 hours between shifts.

(Adopted effective February 2, 2010)

Sec. 29-223-19a. General lifting requirements

(a) Handling the load.

(1) No hoisting equipment shall be loaded beyond the specifications of the load-rating chart, except for test purposes as specified by the manufacturer.

(2) The load to be lifted shall be within the rated capacity of the hoisting equipment in its existing configuration.

(b) Loads of unknown size.

When a load whose size is not accurately known is to be lifted, the person responsible for the job lift shall ascertain that the weight of the load does not exceed the ratings at the radius at which the load is to be lifted. For the purposes of this subsection, the size of the load may be determined by contacting the manufacturer, by weighing the load, by considering known unit weights and by using such other engineering techniques as are applicable given the circumstances. For each such lifting assignment, the following requirements shall be met:

(1) A specific person shall be appointed to direct each lift;

(2) A qualified person shall ascertain that the rope or other rigging hardware is in satisfactory condition both before and after lifting;

(3) Operations shall be conducted in such a manner and at such speeds as to minimize dynamic effects;

(4) Each lift shall be recorded in the hoisting inspection record and prior uses shall be considered before permitting another such lift; and

(5) Duty cycle or repetitive lifts shall not be made with operating design factors less than five.

(c) Attaching the load.

The operator is responsible for ensuring that the load is attached and secured properly.

(d) Holding the load.

(1) The operator shall not leave the controls while the load is suspended.

(2) The operator shall not permit any person to stand or pass under a suspended load.

(e) Moving the load.

The person directing the lift shall ensure the following:

(1) The hoisting equipment is stable and, where necessary, blocked;

(2) The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches;

(3) The lift and swing path is clear of obstructions;

(4) All persons are clear of the swing radius of the hoisting equipment's counterweight, if equipped;

(5) The effect of ambient wind on the load and hoisting equipment is considered;

(6) During lifting operations, care shall be taken that there is no sudden acceleration or

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-20a

Department of Public Safety

deceleration of the moving load, and that the load, boom or other parts of the machine do not contact any obstruction; and

(7) Loads are not carried over people.

(f) **Multiple hoisting equipment lifts.**

Before performing a lift in which more than one piece of hoisting equipment is to be used to support the load, the following requirements shall be met before the lift may proceed:

(1) The lift shall follow a written plan developed by a qualified person;

(2) Where the qualified person determines that engineering services are needed, such services shall be provided;

(3) The lift shall be supervised by a person who meets the criteria for a competent and qualified person, or by a competent person assisted by one or more qualified persons; and

(4) The plan shall be reviewed with all workers involved with lift operations.

(Adopted effective February 2, 2010)

Sec. 29-223-20a. General signal requirements

(a) A signal shall be provided in the following instances:

(1) When the point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator;

(2) When the equipment is traveling and the view in the direction of travel is obstructed;

or

(3) When, due to site-specific safety concerns, either the operator or the person handling the load determines that it is necessary.

(b) Signals shall be discernable or audible at all times.

(c) An operator shall not respond to a signal unless the operator clearly understands the signal.

(d) Signals to a hoisting equipment operator shall be by hand, unless voice communication equipment is used.

(e) **Hand signals.**

(1) Standard method: Hand signals shall be as provided in SAE J1307-2002, *Excavator and Back Hoe Hand Signals*. SAE J1307- 2002, *Excavator and Back Hoe Hand Signals*, may be obtained from sae.org.

(2) Non-standard hand signals: Where use of the standard method is not feasible, or where the standard method does not cover an operation or use of an attachment, non-standard hand signals may be used. When using non-standard hand signals, the signal person, hoisting equipment operator and lift supervisor, if applicable, shall agree in advance of the operation on the non-standard hand signals to be used.

(Adopted effective February 2, 2010)

Sec. 29-223-21a. Preventive maintenance. Maintenance procedures

(a) A preventive maintenance program based on the hoisting equipment manufacturer's recommendations shall be established.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-22a

(b) Dated maintenance records shall be made available to the Department of Public Safety.

(c) Before adjustments and repairs are made on hoisting equipment, the following precautions shall be taken, unless they are not applicable:

(1) Hoisting equipment shall be placed where it will cause the least interference with other equipment or operations in the area;

(2) All controls shall be placed in the off position and all operating features shall be secured from inadvertent motion by brakes, pawls or other means;

(3) Starting mechanisms shall be rendered inoperative;

(4) The power plant shall be stopped or disconnected at the power takeoff;

(5) The boom shall be lowered to the ground, if possible, or otherwise secured against dropping;

(6) The load block or attachment shall be lowered to the ground or otherwise secured against dropping; and

(7) Hydraulic oil pressure from all hydraulic circuits shall be relieved before loosening or removing hydraulic components.

(d) “Warning” or “Out of order” signs shall be placed on equipment controls.

(e) After adjustments and repairs have been made, the hoisting equipment shall not be returned to service until all guards have been reinstalled and trapped air has been removed from the hydraulic system, safety devices are reactivated and maintenance equipment has been removed.

(Adopted effective February 2, 2010)

Sec. 29-223-22a. Adjustments and repairs. Lubrication

(a) Any hazardous conditions disclosed by the inspection requirements of section 29-223-23a of the Regulations of Connecticut State Agencies shall be corrected before operation of hoisting equipment is resumed. Only personnel so designated by the equipment owner shall perform adjustments or repairs.

(b) Adjustments shall be maintained to ensure correct functioning of components.

(c) Repairs or replacements shall be provided as needed for operation. Examples include critical parts of functional operating mechanisms that are cracked, broken, corroded, bent or excessively worn or critical parts of the hoisting equipment structure that are cracked, bent, broken or excessively corroded.

(d) Replacement parts or repairs shall have at least the original design factor.

(e) Instructions for the removal of air from hydraulic circuits shall be obtained from the manufacturer and followed.

(f) Lubrication.

(1) All moving parts of the hoisting equipment for which lubrication is specified shall be regularly lubricated. Lubricating systems shall be checked for proper delivery of lubricant. The manufacturer’s recommendations as to the points and frequency of lubrication, maintenance of lubricant levels and types of lubricant used shall be followed.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-23a

Department of Public Safety

(2) Machinery shall be stationary while lubricants are being applied and protection provided as called for, unless equipped for automatic or remote lubrication.

(g) Modifications, nameplates, markings and capacity.

(1) Modifications and additions that affect capacity or safe operation shall not be performed without the manufacturer's prior written approval. Where such approval is granted, capacity, operation and maintenance instruction plates, tags or decals shall be changed accordingly.

(2) If the hoisting equipment is equipped with one or more attachments, equipment shall be marked to identify the attachments and show the capacity of the hoisting equipment with attachments at lowest capacity rating.

(3) All nameplates and caution and instruction markings shall be in place and legible.

(4) The user shall consider that changes in load dimension may affect capacity ratings on certain types of hoisting equipment such as forklifts.

(5) All required field assembly, operation and maintenance information shall be obtained from the manufacturer.

(Adopted effective February 2, 2010)

Sec. 29-223-23a. General inspection requirements

(a) Prior to initial use, a qualified person shall inspect all new and altered hoisting equipment to verify compliance with the manufacturer's recommendations.

(b) Inspections shall be performed in accordance with the equipment manufacturer's recommendations.

(c) Hoisting equipment that has been modified or received additions that affect the safe operation of the equipment or its capacity shall be inspected by a qualified person after such modifications or additions have been completed, but prior to use. The inspection shall ensure that the modifications or additions have been performed in accordance with the manufacturer's recommendations and shall include a functional test.

(d) Hoisting equipment that has been repaired or adjusted shall be inspected by a qualified person after such repair or adjustment has been completed, but prior to use. The qualified person shall determine if the repair or adjustment meets the manufacturer's recommendations. Where such recommendations are unavailable or inapplicable, the qualified person shall determine if a registered professional engineer is needed to develop criteria for the repair or adjustment. Final inspection shall include a functional test.

(e) A qualified person shall inspect any hoisting equipment that requires assembly or reassembly to ensure that it meets manufacturer's recommendations. Where such recommendations are not available or are inapplicable, a registered professional engineer familiar with the equipment shall develop criteria. Final inspection shall include a functional test.

(f) A competent person shall inspect the hoisting equipment and any attachments prior to use each shift. This visual inspection shall consist of observation for apparent deficiencies including, but not limited to: hydraulics system, fluid level, engine oil level, air, hydraulic

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-24a

or other pressurized lines for deterioration or leakage, cracks on welds or structural components, tires for proper inflation and condition (if equipped), safety devices and operational aids for proper operation.

(g) When the hoisting equipment is in service, a competent person shall inspect such equipment on a monthly basis.

(1) The inspection shall follow the manufacturer's recommendations as to items to be inspected.

(2) The competent person shall follow a daily inspection schedule if the manufacturer specifies no inspection items. For purposes of this section, a daily inspection shall meet the requirements of subsection (f) of this section.

(3) The monthly schedule shall be documented in writing, showing what items were inspected and the results of the inspection.

(4) The monthly inspection shall include the name and signature of the person who conducted the inspection and the date such inspection occurred.

(h) Hoisting equipment shall not be used until an annual inspection shows that no corrective action is required. In conducting such inspection, manufacturer's recommendations shall be followed. Inspection reports shall be maintained for three years.

(i) Hoisting equipment subjected to severe use shall be inspected by a qualified person at intervals to be determined by the manufacturer or a qualified person. Severe use or conditions may include, but shall not be limited to: exceeding rated capacity, shock loading or prolonged exposure to a corrosive environment.

(j) A qualified person shall inspect hoisting equipment that has been idle for three months or more in accordance with the manufacturer's recommendations for an annual inspection.

(k) If a hoisting equipment manufacturer's recommendations regarding inspections are more comprehensive or inspections are required more frequently than this section, then such manufacturer's recommendations shall be followed.

(Adopted effective February 2, 2010)

Sec. 29-223-24a. Personnel lifting

(a) The following special procedures shall be followed when personnel are to be lifted:

(1) The person specifically responsible for the overall work to be performed shall determine that there is no practical alternative way to perform the needed work or gain access to the area. Such person then may authorize the personnel lifting procedure;

(2) For each personnel lifting procedure, the person responsible for the task shall attest to the need for the operation and shall issue a written statement describing the procedure and its time frame. The statement shall be retained at the jobsite;

(3) When used for lifting personnel, the hoisting equipment shall be inspected on a daily basis;

(4) Lifting and supporting shall be made under controlled conditions and under the direction of an appointed signal person;

(5) The operator, signal person and the person responsible for the task shall meet on a

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-24a

Department of Public Safety

daily basis to plan and review procedures to be followed. The person responsible for the task shall also instruct all personnel who will occupy the personnel platform regarding the proper procedures to be followed, including procedures for entering and leaving the personnel platform and the points at which persons will enter and leave the personnel platform;

(6) The operator and signal person shall conduct a test lift with the empty personnel platform or basket and verify adequacy of footing;

(7) Communication between the operator, signal person and person or persons being lifted shall be maintained;

(8) When personnel from the personnel platform or basket perform welding, the electrode holders shall be protected from contact with metal components of the personnel platform or basket;

(9) Personnel being lifted or supported shall wear safety belts with lanyards attached to one or more designated anchor points;

(10) The operator shall remain at the controls when the personnel platform is occupied;

(11) Movement of the personnel platform shall be done in a slow, controlled, cautious manner with no sudden movements of the personnel platform;

(12) Hoisting equipment shall not travel while personnel are on a personnel platform or in the basket;

(13) The personnel being lifted or positioned shall remain in continuous sight or communication with the operator or signal person;

(14) Hoisting equipment used for lifting personnel shall be supported by a firm surface. When provided, outriggers shall be fully extended and properly set;

(15) The total weight of the lifted load, including personnel, shall not exceed 50 per cent of the rated capacity under the planned conditions of use;

(16) A suspended personnel platform shall be used only for personnel, their tools and sufficient materials to do their work. Such platform shall not be used for transporting bulk materials;

(17) Personnel shall keep all parts of their bodies inside the suspended personnel platform during raising, lowering and positioning to avoid pinch points. Personnel shall not stand on or work from the top rail, mid-rail or toe-board of the suspended personnel platform;

(18) If the personnel platform cannot be landed, it should be tied to the structure before personnel get off or on;

(19) A personnel platform shall not be used in winds in excess of 15 mph (25 Km/h), electrical storms, snow, ice, sleet or other adverse weather conditions that could affect the safety of personnel; and

(20) After positioning the personnel platform, all brakes and locks on the lift equipment, if equipped, shall be set before personnel perform any work.

(b) A personnel platform shall meet the following requirements:

(1) A qualified person shall design the personnel platform;

(2) The personnel platform shall be limited to a capacity of six persons;

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-25a

(3) The personnel platform and attaching devices shall have a minimum design factor of five;

(4) The personnel platform shall have a plate specifying the weight of the empty personnel platform and the maximum number of persons and weight for which the personnel platform is rated;

(5) The personnel platform shall have standard railing as defined in ANSI A1264.1-1995, *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*;

(6) A grab rail shall be provided inside the suspended platform to minimize hand exposure;

(7) The sides of the personnel platform shall be enclosed from floor to mid-rail;

(8) If access doors are installed, they shall open only to the interior of the personnel platform and access doors shall be equipped with a device to restrain the door from inadvertently opening;

(9) The personnel platform shall have overhead protection when there is an overhead hazard;

(10) The personnel platform shall be easily identifiable by high visibility color or marking;

(11) The personnel platform shall be attached by means such as, but not limited to: a shackle, hook (latched or secured), wedge or socket attachment. A wedge and socket attachment shall have a clip on the free end of the load line;

(12) The suspension system shall minimize inclination of the personnel platform due to the movement of the personnel on the personnel platform;

(13) All rough edges shall be ground smooth;

(14) All welding procedures and welding operator qualifications shall be in accordance with the 2004 edition of ANSI/AWS D1.1/D1.1M, *Structural Welding Code – Steel* when welding is to be performed on load sustaining members. Where special steels or other materials are used, welding procedures shall be obtained from the manufacturer;

(15) A welder certified by the American Welding Society or similar organization shall perform all welding; and

(16) The personnel platform shall be securely attached to the hoisting equipment.

(c) Suspended personnel platform testing and inspection.

(1) Prior to use each working shift, the platform and lifting hardware used to attach the platform to the hoisting equipment's load line attachment shall be inspected.

(2) At each new jobsite, and at least annually, personnel shall not be hoisted in the suspended personnel platform until the personnel platform, rigging and hook block is proof tested to twice the personnel platform's rated capacity by holding it in a suspended position for five minutes with the test load suitably distributed on the personnel platform.

(Adopted effective February 2, 2010)

Sec. 29-223-25a. Operating near electric power lines

(a) Hoisting equipment shall be operated so that no part of the hoisting equipment or

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

§29-223-26a

Department of Public Safety

load enters into the danger zone identified in the “*Required Clearance for Normal Voltage in Operation Near High Voltage Power Lines and Operation in Transit with No Load and Boom or Mast Lowered*” table contained within ANSI B30.5-2004, *Mobile and Locomotive Cranes*, hereafter “the ANSI table.” ANSI standards may be obtained by contacting ANSI at ansi.org.

(b) Exceptions to subsection (a) of this section include those instances where the electrical distribution and transmission lines have been de-energized and visibly grounded at the point of work, or insulating barriers that are not a part of nor an attachment to the hoisting equipment have been erected to prevent physical contact with the lines. In the case of a line that has been de-energized, the operator shall obtain written verification from the property owner or electric utility before work begins.

(c) The minimum clearance for lines rated 50 kV or below shall be 10 feet.

(d) Caution shall be exercised when working near overhead lines because they can move horizontally or vertically due to wind.

(e) A qualified signal person shall be assigned to observe the clearance when the hoisting equipment moves to within a boom’s length of the limits specified in the ANSI table.

(f) The requirements of this section shall be met notwithstanding the use of such safety features as cage-type boom guards, insulating links or proximity warning devices. When used, operators shall understand the limitations of such devices and shall test them in such manner and with such frequency as the manufacturer may prescribe.

(g) Durable signs shall be installed at the operator’s station and on the outside of the hoisting equipment warning of the possibility of death or serious bodily injury if appropriate clearances are not maintained.

(Adopted effective February 2, 2010)

Sec. 29-223-26a. Additional safety requirements

(a) Fire extinguisher.

(1) A portable fire extinguisher with a basic minimum extinguisher rating of 10 BC shall be installed in the cab or at the machinery housing.

(2) Operating and maintenance personnel shall be familiar with the use and care of the fire extinguishers provided.

(b) Re-fueling.

(1) The storage and handling of liquid fuels, such as gasoline and diesel fuel, shall comply with ANSI/NFPA 505-2002, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operation*, and ANSI/NFPA 30-2000, *Flammable & Combustible Liquids Code*.

(2) The storage and handling of liquefied petroleum gas fuel shall comply with ANSI/NFPA 505-2002, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operation*, and ANSI/NFPA 58-2001, *Liquefied Petroleum Gas Code*.

(c) Warning device.

Regulations of Connecticut State Agencies

TITLE 29. Public Safety & State Police

Department of Public Safety

§29-223-26a

(1) Hoisting equipment shall be equipped with an operator-controlled horn, whistle, gong or other sound-producing device or devices. The operator shall ensure that all warning devices are in place and in working order.

(2) The operator shall determine if operating conditions require the hoisting equipment to be equipped with additional sound-producing or visual devices. The operator shall ensure that all such devices are provided and maintained.

(d) **Load-handling controls.**

(1) Load-handling controls shall be located for right-handed operation.

(2) Load-handling controls shall be self-centering.

(3) Load-handling controls shall be clearly and durably identified on the control or in close proximity thereto in order to indicate function and direction of motion of load or equipment.

(4) A single lever may be used to perform more than one function.

(5) The upper surface of a rotary control device shall move in the same direction as a lever.

(6) Special controls, such as for pre-selective or automatic devices, shall be identified and shall meet the requirements of this section.

(e) **Travel controls.**

Travel controls shall be clearly and durably identified. Such identification shall be on the control or in close proximity to it and shall indicate function and direction of motion of load or equipment.

(Adopted effective February 2, 2010)